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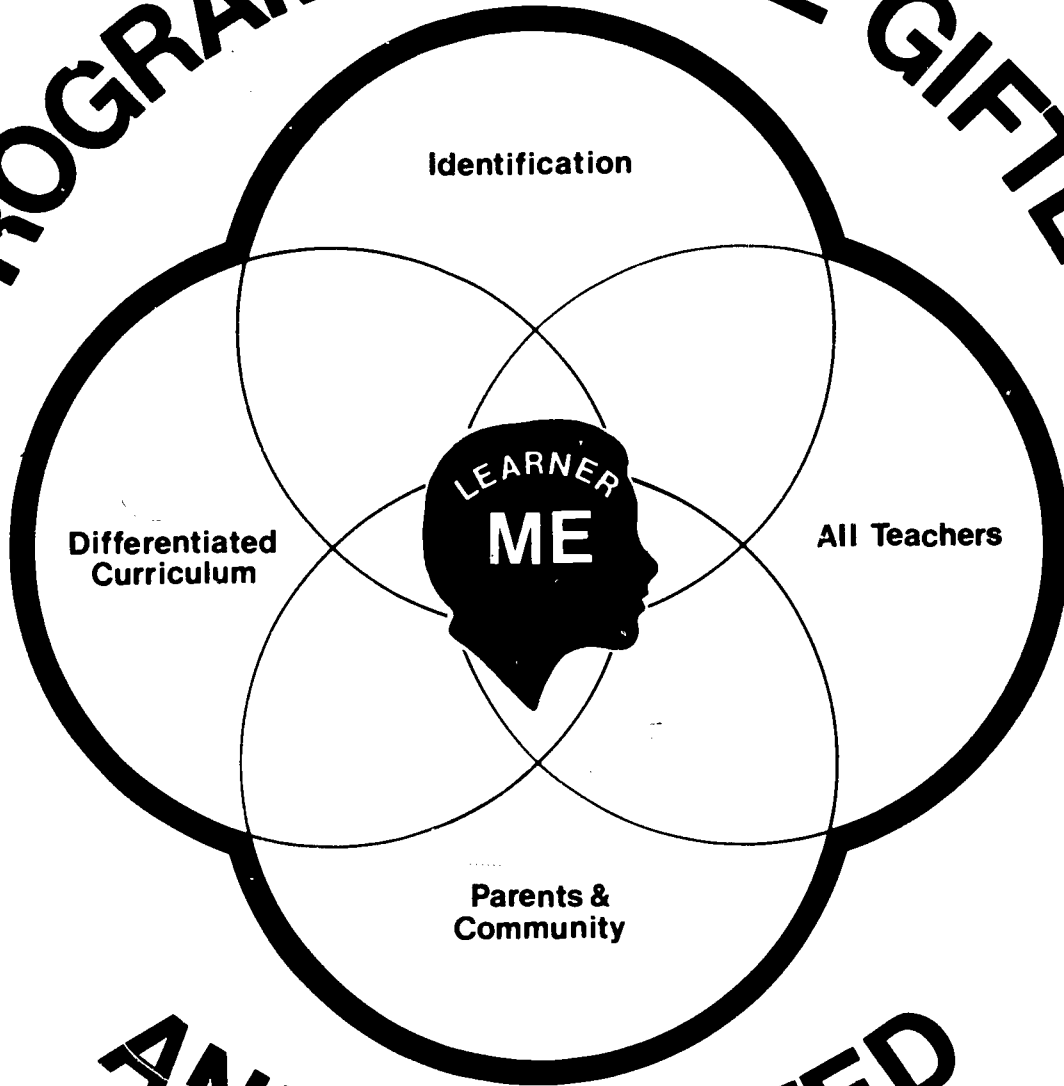
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ABSTRACT

Intended for teachers, the document provides a framework for developing curricula for gifted and talented students in Georgia. Section 1 offers a rationale for the curriculum framework and considers components of curriculum design. It is pointed out that by providing varied and ongoing experiences in the composite world of the learner (arts/sciences/humanities), the entire curriculum program for the gifted learner renders an open-ended framework for exploring vocations and avocations compatible with interests, needs, and abilities of individual students. Section 2, which makes up most of the document, contains a variety of mini-courses or units of study designed for and field tested with gifted and talented students enrolled in special education programs within local Georgia school systems. Courses represent a variety of ages and levels of development (primary through senior high). Each mini-course is presented as a sample, model, or prototype. The section begins with an introduction to the mini-course and a sample evaluative instrument. Goals and procedures for conducting an independent study program are outlined. Another part contains an outline for teachers to use in organizing a study tour (a project in which the student develops a product which helps gain more sophisticated skills in specified performance areas). A mini-course titled "Say Cheez" contains nine parts with lessons and activities for primary through senior high school students. Subsequent mini-courses cover subjects which include the following: emotions and creativity, American Indian art and customs, proverbs and fables, flying machines, rocks and minerals, string sculpture, creative dramatics, family finances, communication, architecture, oceanography, career exploration, speedreading, Greek and Roman mythology, and humor in literature. Usually outlined for each mini-course are student objectives, thought processes to be developed, instructional materials, content, questions to be considered by students, activities and strategies, and evaluation procedures. (SW)

ED223061

PROGRAM FOR THE GIFTED



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PREFACE

This publication is made possible by a U.S. Office of Education, Office of Gifted and Talented Grant G007604112, in progress from September 1, 1976, through August 31, 1979. The material was developed by teachers of the gifted as they participated in statewide staff development workshops and 35 regional workshops held during the 1977-78 school year.

During the summer of 1978 a selected group of teachers worked for one week to complete a draft of the publication. This group used suggestions and materials from teachers. All teachers of the gifted attending the 1978 statewide staff development workshop were given the opportunity to react to the draft. All reactions and recommendations were reviewed and incorporated whenever appropriate.

The content of this publication is not meant to be a final product. It is to be updated as research, experimentation and use indicate a need for revision. The choice of the loose-leaf binder is conducive to addition, deletion, revision, expansion or omission.

This publication can provide teachers with a framework to aid them in designing appropriate instructional materials for their students. The development of a program for any student with special needs is unique in that it must draw upon the expertise of many. It must also insure a flexible framework for establishing new programs and upgrading present programs. Ongoing development should help classroom teachers, administrators and local boards of education in their respective areas of accountability and provide them with information to use as a quality control guide.

This publication has two sections. Section I includes a framework for developing curricula for gifted and talented students. Also included is a compendium of areas in which gifted and talented students should develop competencies. Section II is a variety of mini-courses, or units of study, designed for and field tested with gifted and talented students enrolled in special education programs for the gifted and talented within local school systems in Georgia. The courses represent a variety of ages and levels of development. Each is presented as a sample, model or prototype. The mini-courses offered are suggestions; by no means are these courses to be considered as mandates to the curriculum for the gifted. The teacher and student can select mini-courses applicable to specific needs and adapt these mini-courses to individual goals. Each mini-course in this publication is used with the permission of its originator(s).

The cover logo represents the many components that must be considered in planning, implementing and operating a specially designed program for the gifted and talented. The learner and the world in which she or he lives becomes the center. To provide adequate planning for students, there must be a team to identify and assess needs. All teachers, including the resource teacher of the gifted and talented, who deal with the student must be a part of the assessment team. Teachers must vary the curriculum to include special materials and resources. The parent, the community and the gifted students' peers are vital components in the completion of an individually designed and implemented program.

ACKNOWLEDGEMENT

To the many teachers of the gifted in Georgia who took time from their summer vacations and gave their weekends to help put this publication together goes a sincere expression of appreciation. Without the work done by them, the publication would not have been possible. We feel that this is just a beginning and as ideas and concepts expressed here are used, revisions, expansion and refinement will take place.

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CURRICULUM FRAMEWORK

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CURRICULUM FRAMEWORK

Rationale

The curriculum framework for Georgia's gifted and talented students is designed to comply with the APEG mandate. It is the responsibility of the individual educational system to provide a separate curriculum. The assumption that gifted children and youth can reach their potential without a specifically designed educational program is unfounded.

The curriculum framework for gifted and talented students should consider each individual's style of thinking and learning. Each student's abilities, strengths, weaknesses and interests should be assessed. A framework which provides a foundation, not a strick guide, should give the flexibility needed for establishing a more structured framework and guides as deemed necessary at local levels.

Gifted and talented students need to acquire and develop coping skills. The affective domain is an integral part of the individual's development. Cognitive powers and the accompanying affective responses are expressed in both overt and covert behaviors. Educators can deal more effectively with a student's self-actualization needs if they have a greater understanding of problems which result from an individual's feelings about work and study.

Expertise, exceptional quality and an intense quest for perfection often lead to frustrations when mediocrity seems to overpower the exciting challenges of living life to its fullest. Gifted students must learn to bend with the bends and curve with the curves if they are to find the coping skills necessary for life adjustments. When gifted students are given the opportunity to meet challenges head on, the excitement of discovery and the recognition of the need to conform without losing individuality gives the expanded curriculum importance in the ongoing process of receiving and responding. With an empathetic as well as a realistic approach to the demands of society, gifted and talented learners can recognize and value learning as a stimulating lifelong process.

Like educational programs for the exceptional or normal child, a curriculum framework for gifted and talented students should create a basis for self unity which places emphasis on the total child. Because gifted and talented students of today will be tomorrow's decision makers, they must be equipped with abilities and skills which enable them to identify problems and find effective solutions. The curriculum for these students should be outlined so that new materials and ideas can be added as needs and interests dictate.

The curriculum for gifted and talented students should provide special programs of instruction for students possessing outstanding needs which might not be met in the regular classroom. A curriculum framework for gifted and talented learners should allow participation by gifted and talented learners of all ages so that they may develop the powers to become high level innovators, evaluators and problem solvers in our complex society.

The program for gifted and talented learners in Georgia is geared to the needs and abilities of the students it serves. In keeping with the overall goals for gifted and talented students as spelled out by APEG guidelines and the State Board of Education, a flexible curriculum provides stimulation and opportunities for accomplishment for the entire range of giftedness—the underachiever, the culturally different in a given school population, any gifted learner who is in some way disadvantaged, the undecided seeker and the confident, well-adjusted, self-directed seeker. Career planning, vocational experiences and college-focused preparation should be incorporated into the curriculum so that the program for the gifted and talented extends beyond the high school level. Acknowledging also that much of a learner's potential can be inhibited or variously channeled before he or she enters school, curriculum planners should also expand Georgia's program for gifted and talented students to meet the needs of the preschool child.

Curriculum Design

The four components of curriculum design, as illustrated on the log of this publication, are interdependent as they overlay the learner in his world. The curriculum should allow variety for teachers and peers, parents and community and the identified gifted learner to develop studies encompassing areas of investigation. The method or strategies for relating to the world and the behaviors which result are entwined in each student's study as he or she progresses. In addition to students, teachers and peers, parents and the community are important in planning learning materials and should be encouraged to participate. The community's role in expanding horizons and experiences for gifted and talented learners is vital to a flexible curriculum. Knowledge of the characteristics and needs and implementation of strategies whereby the gifted and talented learner can reach his or her potential are essential for all educational personnel.

The curriculum content for gifted and talented learners should allow project work in the least restrictive environment so that students are stimulated into thought processes and learning procedures which help develop the continuing education of the total child in the total environment. The learning materials which are selected and developed for the gifted and talented students should be constructed according to the interests, needs and abilities of the students.

A prerequisite to any curriculum is classroom adventure into the living, growing, emerging self. Included in these curriculum adventures are respect for scientific investigation, appreciation of the arts, creative expression and the progressive development of personal competencies. Individual studies and group interaction using problem solving techniques and group dynamics are essential.

The curriculum framework for gifted and talented students must provide freedom from constant supervision as in the use of library resources and other materials that cover broad topics of interest selected by students. Curriculum flexibility provides time for just reading for free investigation without the confines of deadlines and specific requirements. The free investigation can turn into studies within the scope of the individual's own response to his or her work.

Through experimentation, failure, revamping of plans and repeated experimentation, students gain exposure to ways of recognizing initiative, self-discipline, resourcefulness, productivity and self-actualization.

The following figures are presented and explained to represent a curriculum framework model for gifted and talented learners.

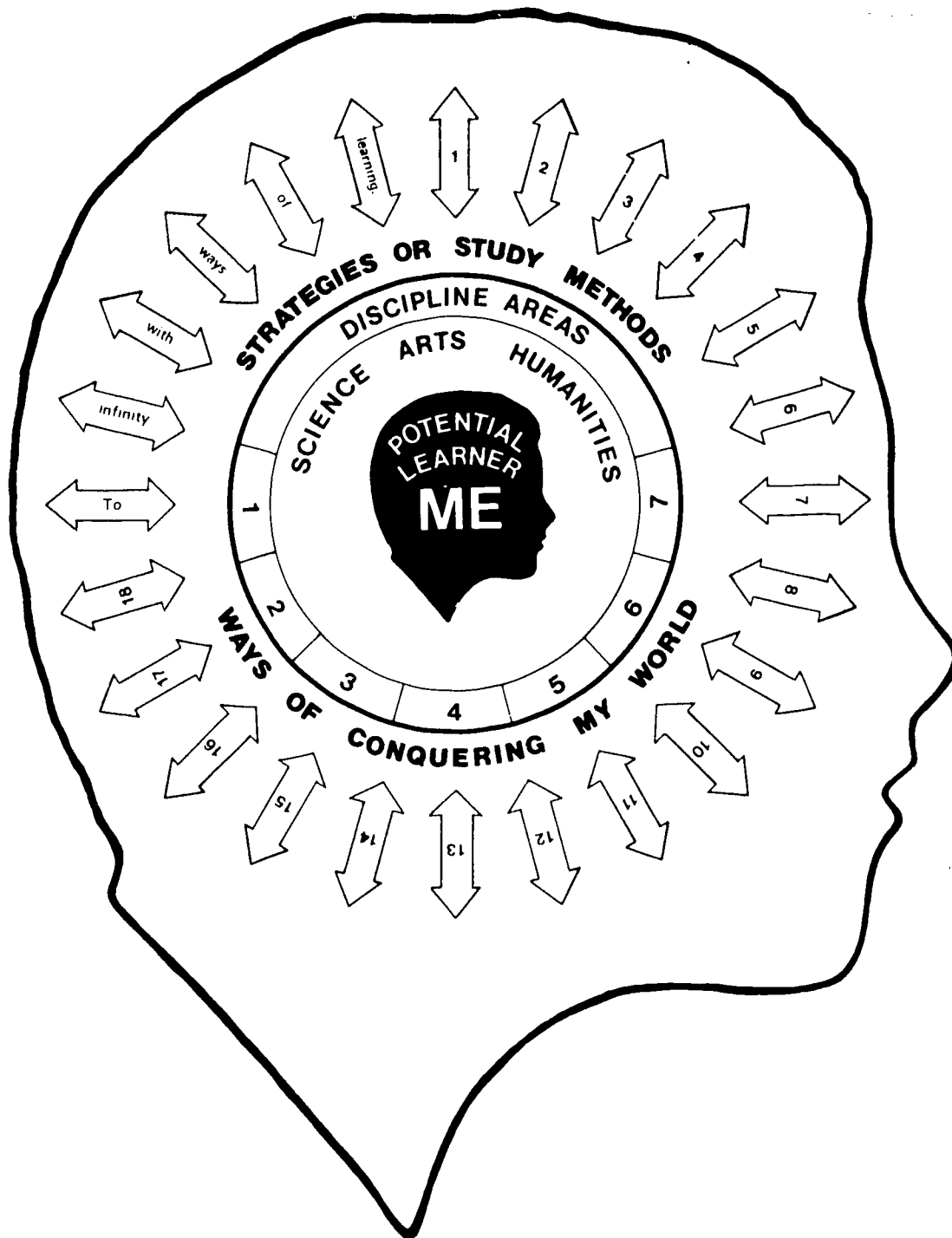


Figure 1

Figure 1 represents a model of a curriculum framework for gifted and talented learners to investigate, relate to and become a valuable part of the world around them. The double-headed arrows and rotating discs used throughout the model indicate an open-ended flexible framework through which varied and individualized programs of study may be developed.

In theory, it is possible for all the aspects of a learner's receiving-responding patterns to interact at once. It is also possible for a learner to experience a learning atmosphere created by any combination of disciplines, strategies and performance objectives. For the model, categories are used to distinguish the learning atmosphere for any one individual—the learner, the subject content and the ways of learning.

Represented in the center of Figure 1 is the learner with all his or her inherent potential. The potential learner is the main focus of the curriculum framework model and occupies the central area within the model of his or her total work. It is the intent of the curriculum framework model to provide day-to-day experiences which help the individual attain the goals of self-actualization—of finding the unity of self.

The disciplines, or subject areas, may be seen as a subject disc which represents any areas of study or investigation. The disciplines serve as the total world of study through which the learner engages in experiences which help develop potential. The rotating disc represents arts, sciences and the humanities which overlap the total responding-receiving patterns of the learner. The rotation and overlapping of subject areas allows the learner to be exposed to varied possibilities for learning.

Figure 2 shows that the arts and sciences may be divided into seven flexible areas. The areas may be as flexible as the user of this curriculum framework deems possible.

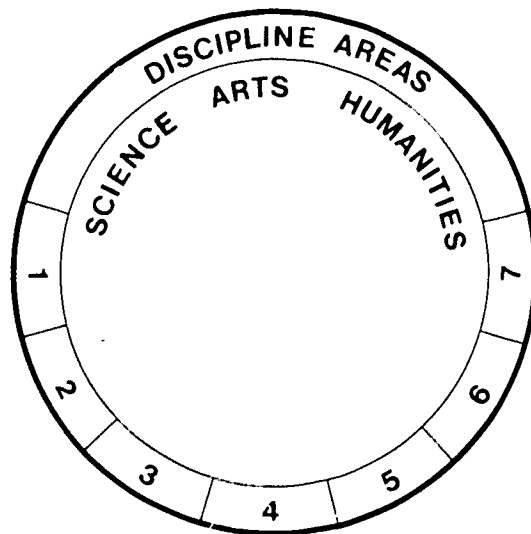


Figure 2

The following subject divisions for the disciplines are merely suggestions, not intended as a structured guide. Overlapping is possible. Specific topics for investigation are as unlimited as the world of the learner. Blanks have been added at the end of each subdivision of topics to show that addition and further subdivision of topics are expected. No set of discipline divisions would satisfy every scholar-expert. The divisions suggested in the model are used primarily for demonstration. Alternatives abound and should be used.

DISCIPLINE AREA I — Life Sciences

Biology	Physiology	_____	_____
Health	Microbiology	_____	_____
Nutrition	Bacteriology	_____	_____

DISCIPLINE AREA II — Social Sciences

Archeology	Education	Anthropology	Sociology
Social Science	Psychology	Geography	History
Ecology	_____	_____	_____

DISCIPLINE AREA III — Physical Sciences

Earth Science	Physics	Chemistry	_____
Astronomy	Aerodynamics	Mathematics	_____
Oceanography	_____	_____	_____

DISCIPLINE AREA IV — Applied Science

Architecture	Design	Radio Technology	Business
Photography	Medicine	Mathematics	Mechanics
Advertising	_____	_____	_____

DISCIPLINE AREA V — Language Arts

Grammar	Composition	Languages	Spelling
Reading	Writing	Creative Writing	Poetry
Literature	Media	Speech	Communication
_____	_____	_____	_____

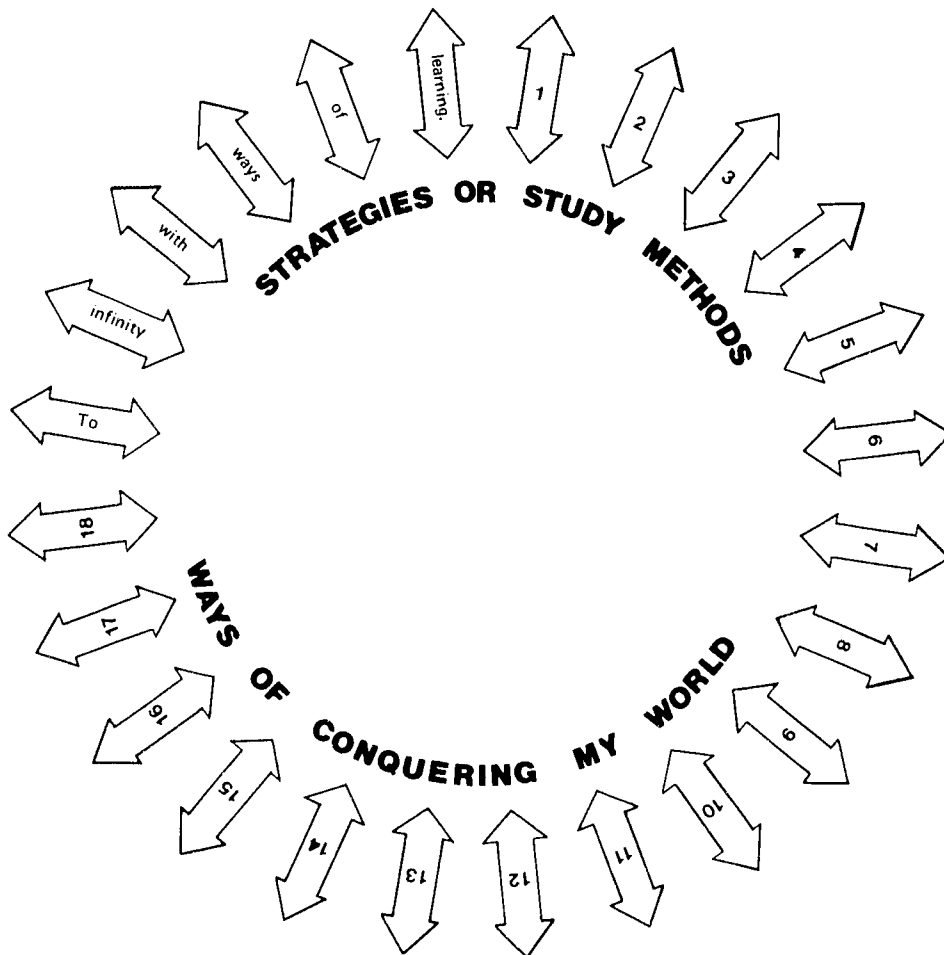
DISCIPLINE AREA VI — Performing Arts

Dance	Drama	Music	_____
Sports Skills	Manual Dexterity	_____	_____
_____	_____	_____	_____

DISCIPLINE AREA VII — Fine Arts

Music	Painting	Sculpture	Appreciation
_____	_____	_____	_____

Figure 3 represents ways of relating to or conquering the world of the learner. Double-ended arrows which form a rotating disc allow for affective and cognitive interaction within any area of study. With this open-ended flow, rotation for contact with any study area and blank arrows for additional strategies, learners may maintain their individual style of learning while they conform to the social structures of educational objectives.



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Figure 3

Although the strategies used for this model have been based on those developed by Frank Williams, they have been adapted and redefined to demonstrate the flexibility of a specific learning methods system for the curriculum framework suggested in this model.

- STRATEGY 1 — **Visualization.** What I do can be seen. What I think about can be seen abstractly.
- STRATEGY 2 — **Example of Habit.** Practice
- STRATEGY 3 — **Attribute.** I analyze to find inherent characteristics. Why does something work?
- STRATEGY 4 — **Study of Creative People and Processes.** I look at how creative people work. This helps me solve problems, invent ideas, think more deeply and understand more clearly.
- STRATEGY 5 — **Skill of Search.** I learn research skills. I read and experiment to learn about the past, present and future.
- STRATEGY 6 — **Intuitive Perception and Expression.** It just has to feel right. My senses help me find what I need to know.
- STRATEGY 7 — **Creative Reading Through Role Playing.** I pretend I am someone else using what I've learned as I read.
- STRATEGY 8 — **Analogy.** A dog is to a puppy as a cat is to a kitten. I can look at how things are alike and how they are different, then I can make decisions about things that are new to me.
- STRATEGY 9 — **Tolerance for Ambiguity.** Puzzling and intriguing questions make me think more deeply. "If I am what I am becoming, who am I?"
- STRATEGY 10 — **Paradox.** I see something which doesn't make sense, but is nonetheless true. Even though something doesn't seem right to me, I know that it is and I try to figure out why. (The horizon makes the earth look flat, but I know that it is round. I sail into the great beyond!)
- STRATEGY 11 — **Example of Change.** I am becoming something new through the process of change. I can change what is into something new. By making the change, I can make new and exciting discoveries. I study changes taking place around me.
- STRATEGY 12 — **Adjustment to Change.** This is where I let one idea grow from another so that a change in thinking takes place. In the world around me this would be like land settling after a volcano so that new ground is created.
- STRATEGY 13 — **Organized Random Search.** This is almost like "anything goes," but I'm looking for an answer to a real question or problem. I do random study and keep on the lookout for answers which fit my questions.
- STRATEGY 14 — **Provocative Questions.** The questions make me think not just recite facts. "If I learn what I'm studying, what will I know?"
- STRATEGY 15 — **Discrepancy.** Gaps or limitations in what I know make me want to find answers. The dissatisfaction I feel at not knowing should lead to solving the riddles of the missing parts.
- STRATEGY 16 — **Opportunity for Evaluative Situations.** I can measure the consequences of what I study; I can see the implications, and then I can make judgements.
- STRATEGY 17 — **Creative Perception and Adaptation.** I perceive and I adapt an idea, then I come up with idea patterns of my own.
- STRATEGY 18 — (Your own) _____

Additional strategies are as numerous as the ingenuity and creativity of the students and the teachers in the world. The strategies in this model should demonstrate a student's ability to cope with educational theory and to use that theory in adapting its precepts to individual needs.

Figure 4, representing performance objectives, has four appendices (Appendix A, B, C and D). Because any purely cognitive response must come from the technological advances of the computer age, performance objectives must be duo-directional in nature. They must include the double-helix type intertwining of affective and cognitive areas of a learner's progress in receiving, responding, assessing, producing and evaluating so that the learner's special education goals are met.

Performance objectives help the learner internalize the world to which he or she relates. This process helps the learner to find the productive nature and value of self within the total environment. The performance objectives resemble hierarchies of learning only in that some areas are outgrowths of others. Conscious ordering of performance objectives is not necessarily a factor. Gifted students are often those who transcend the basics without conscious or formal training in the acquisition of those basics. The term taxonomy should be avoided except for reference and adaptation where applicable. Verbs describing performances and nouns describing competencies might easily be channeled into the gifted learner's process of acquiring the skills for relating to his other world. If categories for evaluation are deemed necessary, appendices A, B, C and D are suggested for setting up individualized and varied evaluation procedures (See competency statement on page 21.)

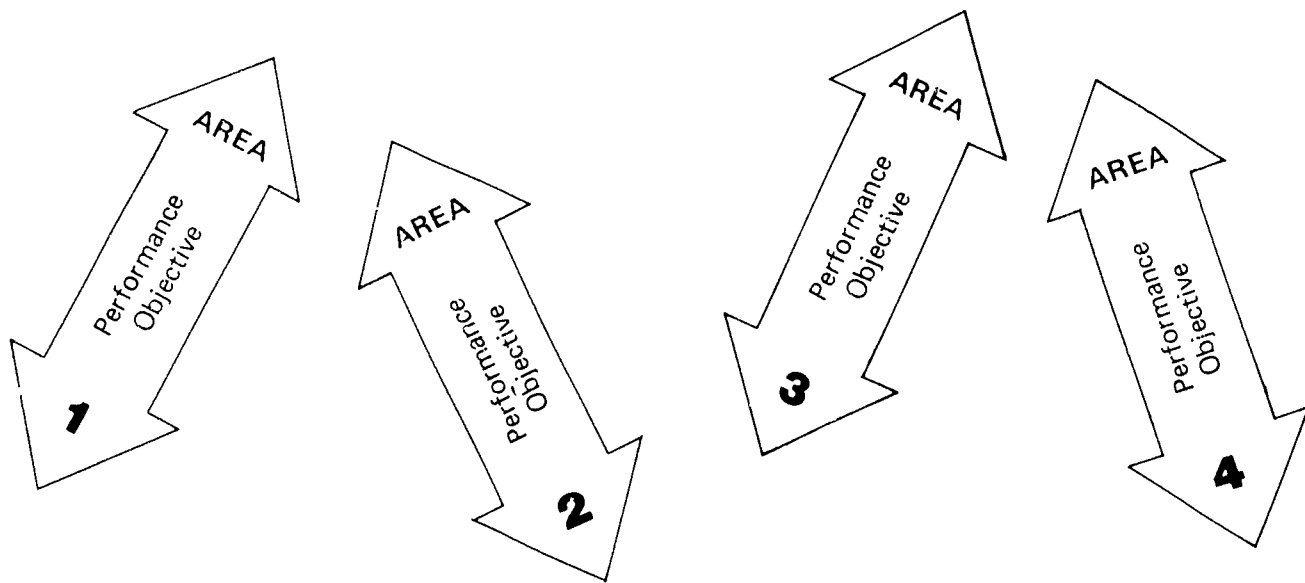


Figure 4

Performance objectives are not separate entities; they are intermingling aspects of the different learning styles of gifted students. **Performance Objective Area I — Response to Perception** allows learning through responses to sense perception. The proficiencies or competencies are descriptive and objective. Elaboration and the quest for fluency provide a base for expanding the investigative, inventive and evaluative learning nature.

Performance Objective Area II — Response through Investigation enhances learning through analysis and classification. The proficiencies or competencies take on a more subjective nature. Internalization and continued elaboration add to the complexity which leads to innovation.

Performance Objective Area III — Response through Invention allows learning to become productive as new ideas and concepts are assimilated in the process of invention. The proficiencies or competencies, both objective and subjective in nature, become tangible.

Performance Objective Area IV - Response through Valuation allows learning to assume the characteristics of balanced objectivity and subjectivity. Valuative learning leads to judging, explaining and transforming. The world of ideas and abstractions results in evaluation for greater efficiency in producing both tangible and intangible learning outcomes.

Gifted students often demonstrate logic, reasoning and critical thinking abilities in varying degrees of proficiency within all performance areas. Perceptual responses, innovative responses, conceptual responses and abstract responses are primary areas which overlap. Attention to variety in the process and product of learning is made possible through flexibility in this curriculum framework which provides variable performance objectives.

Figure 5 should be closely associated with performance objectives. The four questions below allow learners to consider themselves and their place in the world as they relate to it. These questions show that the learner perceives, feels, thinks and responds simultaneously. The learner strives toward becoming an entity—a person who efficiently and satisfactorily relates to the world by asking the following questions.

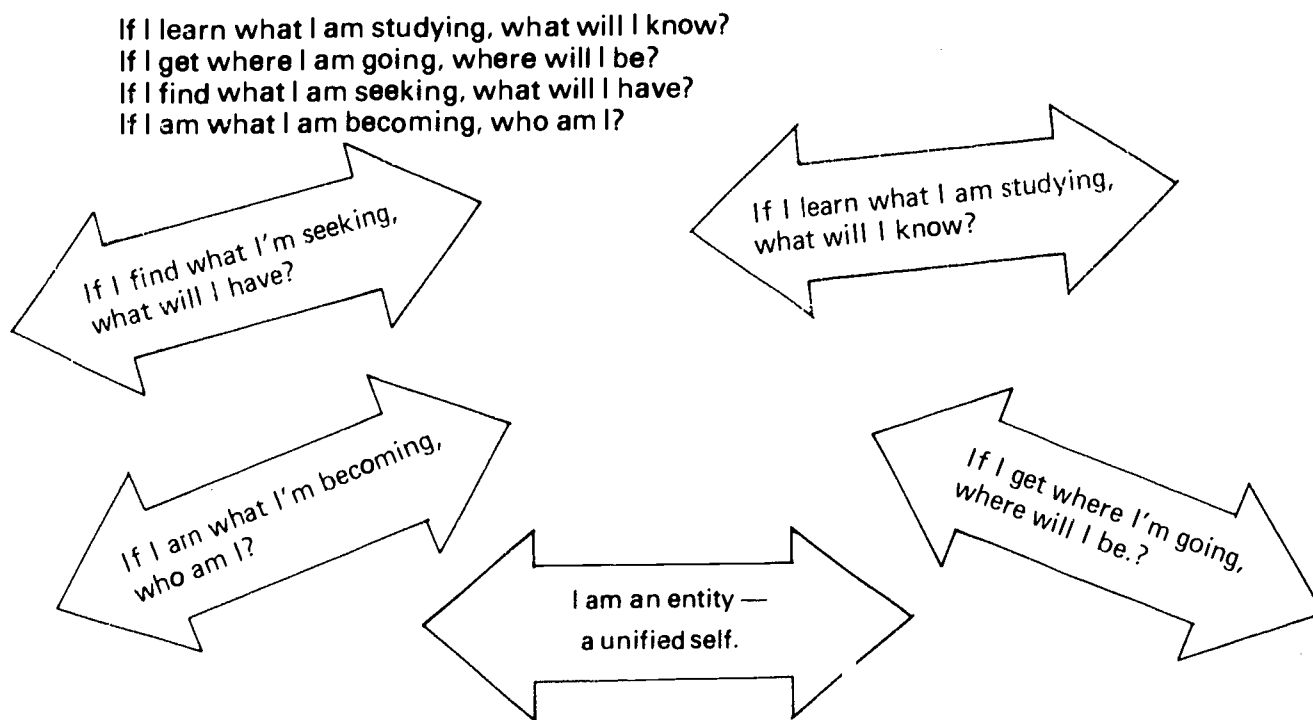


Figure 5

Summary and General Observations

Day-to-day activities which involve students with adventurous learning whether in the classroom or miles away from the traditional school environment are valuable considerations for the curriculum planning committee. Experiences involving frustration and anguish can be quite revealing also. Each new idea or process should contribute to overall group involvement and reveal valuable lessons in discipline and cooperation for present and future relationships to the world around the learner.

Students are encouraged by the flexible curriculum to explore their own relationships to society and to the total environment; thus they are better able to define their responsibility to and for both by sharing the growing experiences of learning. Environmental education, conservation and effective use of our natural resources are major areas of concern. Learning experiences in a world picture of survival versus extinction should increase awareness and provoke concern.

A varied and flexible curriculum allows for insights into people-to-people interaction in work and play when the classroom walls are expanded to include the world surrounding the learner. Sciences and arts encompassed by the humanities bring the learner into focus within his or her world. The studies within a curriculum for gifted and talented students should project learning as a pleasurable, ongoing experience, and contact with problem-solving situations should enable students to develop their own value systems based on their own assessments of moral and ethical principles. Positive input into preferable futures is encouraged through opportunities for students to consider long or short-range possibilities.

By providing varied and ongoing experiences in the composite world of the learner (arts/sciences/ humanities), the entire curriculum program for the gifted learner renders an open-ended framework for exploring vocations and avocations compatible with the interests, needs and abilities of individual students.

Your name _____

Date _____

In my studies I am able to do the following.

Judge using internal criteria

Judge using external criteria

Write a review, investigate, ascertain, discern, determine,
discriminate, settle, decide, resolve or form an opinion

Create, make, form, devise, conceive, propagate, invert,
plan, originate, bring into being, establish, or put
together

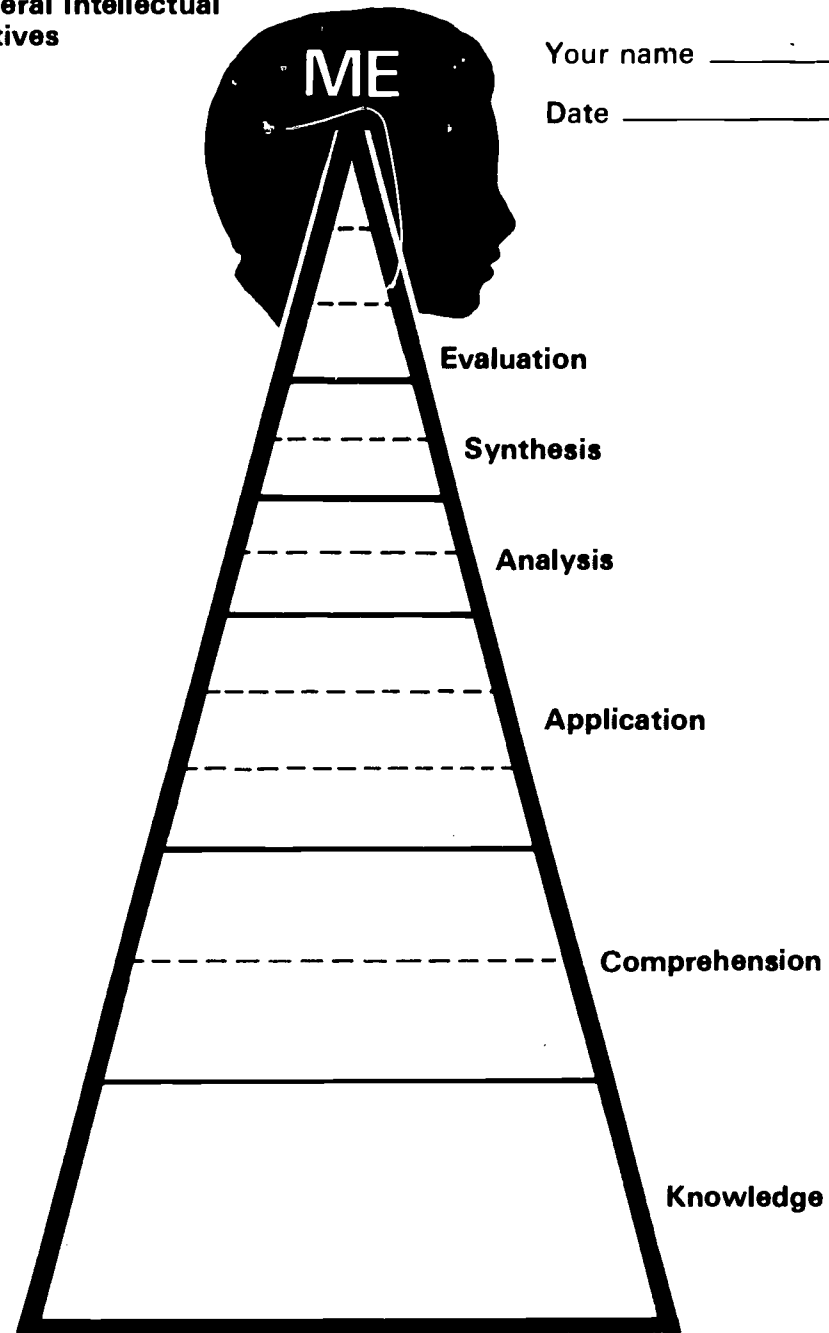
Compare, distinguish, determine, identify, select, match,
classify, organize, take part, relate, reorganize

Use my knowledge, canvas, solicit, investigate, employ my
knowledge to particular and concrete situations

Interpret, explain, define, construe, render, spell out,
clarify, illustrate, disentangle, unravel, account for,
clear up, exemplify, decipher, expound, solve or discover
relationships

Translate, transform, render, decode, decipher, transfer,
remove, change, interpret, construct, transmute or
change the form of information gathered

Write, list, number, classify, categorize, serialize, recall
information, use terms correctly, specify facts, relate,
recall, recollect, recite



Appendix C

**How Well Do I Use My Intellect?
Eloise S. Wolferstein 1978**

Your Name _____

Date _____

In class

I can solve problems using evaluation criteria
I can make decisions
I can work through implications
I can form an opinion

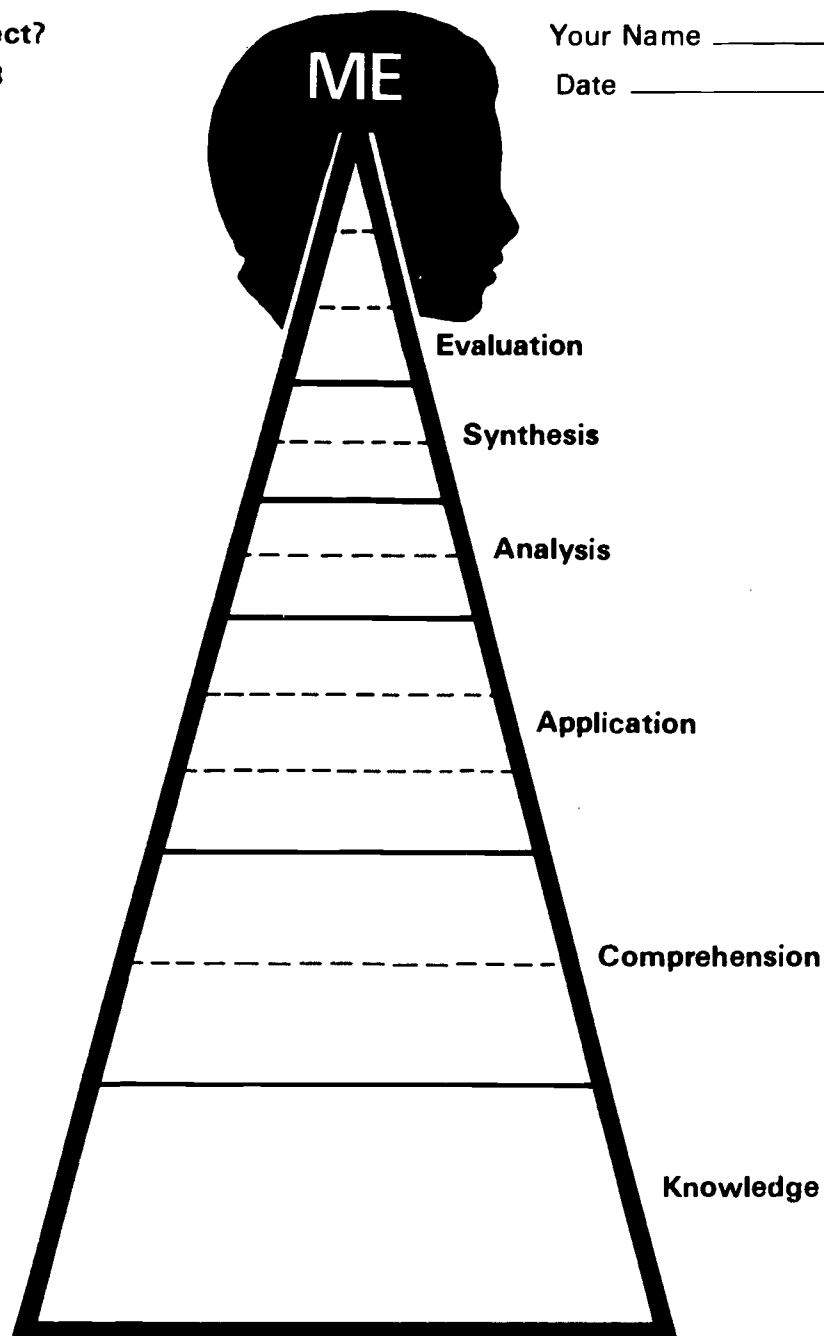
I can put things together

I can classify units and their relations and systems
I can take things apart

I use the knowledge I have learned daily in the classroom

I can figurally, symbolically and semantically interpret the
knowledge I have learned

I can recite something from memory
I can relate my experiences by speaking and writing words
I can remember my past experiences
I understand sequential systems and can prove it by
enumerating and following patterns



Self-Actualization Needs
Have I Met My Needs?
Eloise S. Wolfersteig 1978

Your Name _____

Date _____

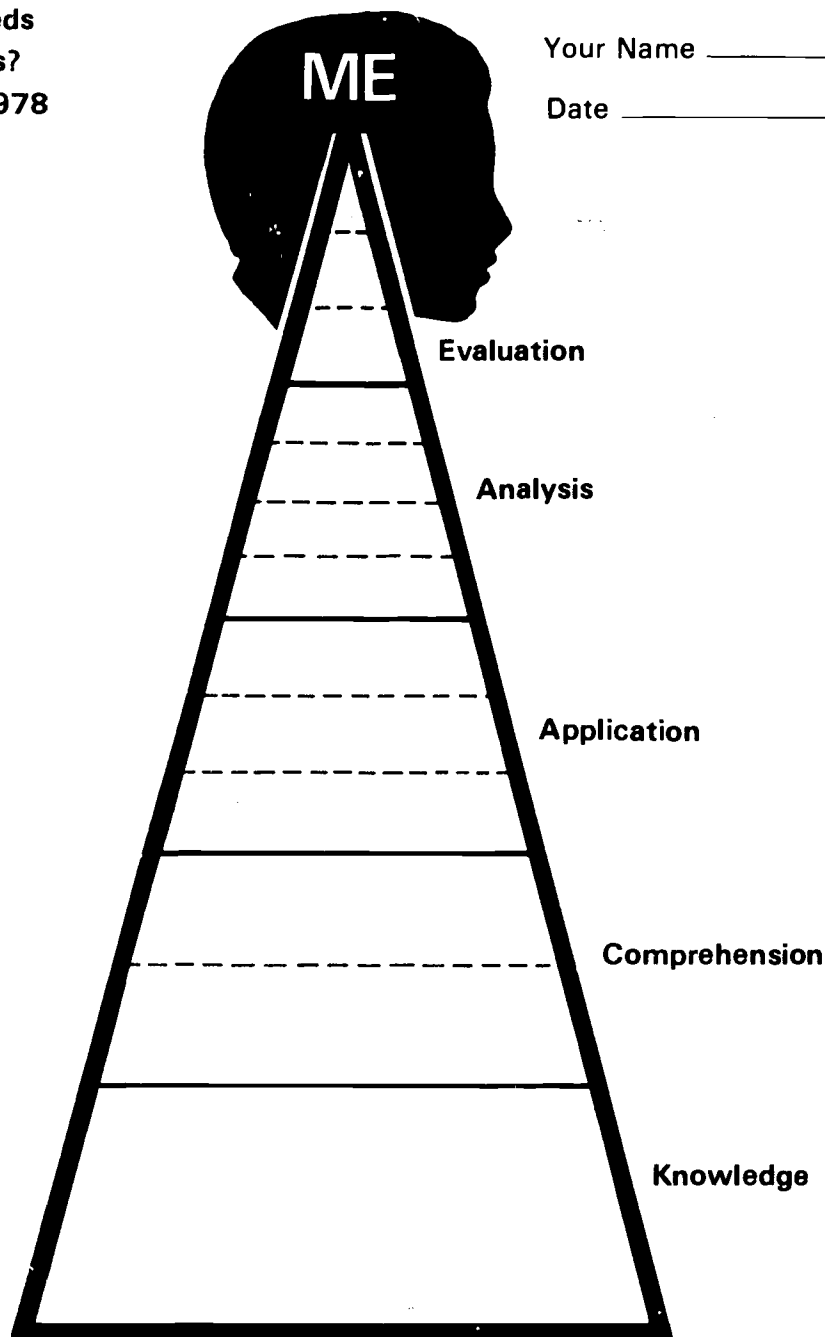
I think my peers are OK
I'm OK
I am a leader among my peers
I can accept the group's decisions
It's OK for a peer to know more than me

I think of the consequences of my actions when involving
my friends in my adventures
I think of the consequences to myself when planning my
adventures

I use all my talents
I work hard to do my best in everything I do
I do for myself without a reminder

I understand the responsibility that comes with freedom

I know what talents I have
I know how to do for myself



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**AREAS IN WHICH GIFTED
STUDENTS SHOULD DEVELOP
COMPETENCIES**

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AREAS IN WHICH GIFTED STUDENTS SHOULD DEVELOP COMPETENCIES

For this guide, competencies for intellectually gifted are defined as proficiencies in responding, developing and functioning in identified areas. Since there is a wide range of differences in general intellectual ability, specific academic aptitude and talent among gifted students, it is neither expected nor desired that these students become equally proficient in all areas.

Through identification and assessment, areas of intellectual ability, specific academic aptitude and talent should be determined for those intellectually gifted students placed in a special program. The instruction program for these students should be based on and planned from the compiled data. The differentiating factors of the program for gifted are delivery models, curriculum content, pacing, teaching strategies, materials and learning environment.

It is expected that identified gifted students entering the program have the basic knowledge appropriate to their grade level in academic skills, consumer education, career education, psychomotor skills, self-awareness and citizenship. Instruction in these areas is, and will continue to be, the responsibility of the home, community and the regular school program. If the teacher of the gifted becomes aware of a deficiency in any one or more of these areas, the teacher of the gifted will work with the regular classroom teacher, other specialists, parents and the student in an attempt to correct this deficiency through the regular school curriculum.

Gifted students need educational programs and services beyond those offered by the regular school program in one or more of the following areas — general intellectual ability, specific academic aptitude, creative or productive thinking, psychosocial ability and visual and performing arts. These five designations serve as major divisions in the following list of areas in which competencies for the intellectually gifted should be developed. The delineated list employed terms used by authorities on learning theories defined in Addenda. Terms which do not have generally accepted meanings in current educational literature are defined parenthetically.

Students who have participated in programs for gifted in Georgia should be able to demonstrate proficiency in responding, developing and functioning in as many of the following areas as are indicated by their special abilities and degree of involvement in the program.

I. General Intellectual Ability

- A. Higher level thinking processes (See Addenda—Bloom)
 - 1. Comprehension
 - 2. Application
 - 3. Analysis
 - 4. Synthesis
 - 5. Evaluation
- B. Critical thinking (Cutts and Moseley)
- C. Divergent production (Guilford)
- D. Convergent production (Guilford)
- E. Intuitive expression (Williams)
- F. Deductive thinking (Deese)
- G. Inductive reasoning (Gallagher)

II. Specific Academic Ability

- A. Knowledge in many fields (breadth)
- B. Advanced academic growth in at least one area (depth)
- C. Content pacing (tempo)
- D. Research skills

E. Communication skills

1. Thinking
2. Speaking
3. Listening
4. Comprehending
5. Writing
6. Nonverbal communicating (sending, receiving and interpreting nonwritten or nonspoken messages)

III. Creative or Productive Thinking

A. Cognitive Domain (Torrance)

1. Fluency
2. Originality
3. Flexibility
4. Elaboration

B. Affective Domain (Williams)

1. Curiosity
2. Risk-taking
3. Complexity
4. Imagination

C. Heuristics (processes which use self-educating techniques)

1. Discovery methods (learning by doing)
2. Continuing quest for knowledge
3. Problem identification
4. Problem solving (Gagné)
5. Organizing
6. Inferring
7. Concluding
8. Facilitating (keeping the project moving)
9. Innovating
10. Persisting/desisting (pursuing a goal until project completion/knowing when it would be fruitless to continue)
11. Self-motivation
12. Self-discovery
13. Self-actualization (Maslow)
14. Awareness of individual learning style

D. Accountable production

IV. Psychosocial Ability

A. Group process

1. Risk-taking
2. Facilitating (behaving in a way that keeps group process moving)
3. Innovating
4. Decision making
5. Intuitive thinking
6. Respecting (tolerating and accepting others and their needs)

B. Citizenship

1. Civic responsibility
2. Survival conformity (maintaining individuality while adapting to mores of society)

- C. Values clarification (Raths)
- D. Responsibility for giftedness
- E. Realistic self-concept
- F. Appropriate sense of humor
- G. Career awareness
- H. Wise use of leisure time

V. Visual and Performing Arts

- A. Performing
 - 1. Developing areas of talent
 - 2. Sharing talent with others
- B. Appreciating
 - 1. Exposure to various arts
 - 2. Knowledge of art forms

This list is necessarily general. Each school system should develop its specific program based on the framework and competency statements.

ADDENDA

I. General Intellectual Ability

A. Higher level thinking processes (Bloom)

BLOOM'S TAXONOMY OF THE COGNITIVE DOMAIN
(STRUCTURE FOR EDUCATIONAL OBJECTIVES)

EVALUATION:	Judgment by internal criteria Judgment by external evidence
SYNTHESIS:	Derivation of abstract relations Production of plan-pattern Production of uniqueness
ANALYSIS:	Organizational principles Relationships Elements
APPLICATION:	Particular and concrete situations
COMPREHENSION:	Extrapolation Interpretation Translation
KNOWLEDGE:	Classifications—categories Sequences—series Specific facts Terminology Recall of information ¹

B. Critical thinking (Cutts and Moseley)

"the ability to distinguish between relevant and irrelevant information and between fact and fiction."²

C. Divergent production (Guilford)

"generation of information from given information where the emphasis is upon variety and quality of output from the same source. Likely to involve what has been called transfer. This operation is most clearly involved in aptitudes of creative potential."³

D. Convergent production (Guilford)

"generation of information from given information where the emphasis is upon achieving unique or conventionally accepted best outcomes. It is likely the given information (cue) fully determines the response."⁴

E. Intuitive expression (Williams)

"feelings about things through all the senses. Skill of expressing emotion. Be sensitive to inward hunches or nudges."⁵

F. Deductive thinking (Deese)

"a concept is presented to the individual, and he or she is expected to manipulate it in certain ways. The rules of logic which are propounded and argued by logicians have been arrived at by experience. They are rules which enable us to deal with our external world in a way which achieves workable results."⁶

G. Inductive reasoning (Gallagher)

"sequencing topics and assignments so as to lead the child through the necessary stages of thought so that he or she will at last discover his or her own major ideas of his or her own."

II. Creative or Productive Thinking

- A. Cognitive domain (Torrance)
- B. Affective domain (Williams)

DIMENSION 3
Pupil Behaviors

Behavior	Meaning
COGNITIVE—INTELLECTIVE	
Fluent thinking To think of the most	Generation of a quantity Flow of thought Number of relevant responses
Flexible thinking To take different approaches	Variety of kinds of ideas Ability to shift categories Detours in direction of thought
Original thinking To think in novel or unique ways	Unusual responses Clever ideas Production away from the obvious
Elaborative thinking To add on to	Embellish an idea Embroider a simple idea or response to make it more elegant Stretch or expand things or ideas
AFFECTIVE—FEELING	
Risk taking To have courage to	Expose oneself to failure or criticisms Take a guess Function under conditions devoid of structure Defend own ideas
Complexity To be challenged to	Seek many alternatives See gaps between how things are and how they could be Bring order out of chaos Delve into intricate problems or ideas
Curiosity To be willing to	Be inquisitive and wonder Toy with an idea Be open to puzzling situations Ponder the mystery of things To follow a particular hunch just to see what will happen
Imagination To have the power to	Visualize and build mental images Dream about things that have never happened Feel intuitively Reach beyond sensual or real boundaries ⁸

C. Heuristics

Problem solving (Gagné)

"Problem solving is frequently called 'thinking' and consists of combining two or more learned principles to create a new principle of a high order."⁹

III. Psychosocial Ability

A. Values clarification (Raths)

"Valuing, according to Raths, is composed of seven sub-processes: prizing one's beliefs and behaviors (prizing and cherishing and publicly affirming; when appropriate); choosing one's beliefs and behaviors (choosing from alternatives, choosing after consideration of consequences, choosing freely); acting on one's beliefs (acting with a pattern, consistency and repetition)."¹⁰

Footnotes

1. Benjamin Bloom et al., *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain* (New York: David McKay, 1964).
2. Norma Cutts and Nicholas Moseley. *Providing for Individual Differences in the Elementary School*. (Englewood Cliffs: Prentice Hall, Inc., 1960).
3. Mary Meeker, *The Structure of Intellect: Its Interpretation and Uses* (Columbus, Ohio: Charles E. Merrill Publishing Co., 1969), p. 20.
4. Ibid., p. 19.
5. Frank E. Williams, *Classroom Ideas for Encouraging Thinking and Feeling* (Buffalo, New York: D.O.K. Publishers, Inc., 1970), p. 202.
6. James Deese, *The Psychology of Learning* (New York: McGraw-Hill Book Co., 1952), p. 272.
7. James J. Gallagher, *Teaching the Gifted Child* (Boston: Allyn and Bacon, Inc., 1975), p. 225.
8. Williams, *Classroom Ideas for Encouraging Thinking and Feeling*, p. iii.
9. Ronald C. Doll, *Curriculum Improvement: Decision Making in Process*. (Boston: Allyn Bacon, Inc., 1974), p. 50.
10. Sidney Simon, Leland Howe and Howard Kirschenbaum, *Values Clarification*. New York: Hart Publishing Co., Inc., 1972), p. 19.

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SECTION II
Mini-courses

This section is composed of a number of mini-courses or units of study, designed and field-tested by teachers of the gifted in Georgia. Each course has been field-tested and evaluated by the teacher or teachers who designed it. In preparation for drawing up the course, teachers were given the basic outline shown on pages 34-35. They were not held to the outline but instead were allowed to incorporate their own ideas and creativity. Because of this privilege, all courses are not uniform in design, neither are all complete as far as total implementation is concerned. Completion for use is left up to the teacher using the mini-course. Those designing the courses felt that major topics and ideas would enable teachers to use their own creativity and resources in implementation.

As a part of developing a mini-course, some evaluative technique must be employed to ensure that planned activities will be or can be used as springboards to the development and use of higher thought processes. The evaluation instrument on pages 37-40 is recommended as one possible way for teachers to review a proposed mini-course to see if it is designed for the development of higher thought processes in both the cognitive and affective domains.

When using the instrument, teachers should keep in mind the statement below which was written by the Houston County teachers of the gifted who also designed the recommended evaluation instrument.

"A differentiated educational program for gifted children should include a curriculum that denotes higher cognitive and affective concepts and processes. Most students are receiving classroom instruction in facts, knowledge and comprehension through basic skill training in the classroom. It is, therefore, imperative that gifted instruction encompass strategies that develop the more neglected higher thought processes. If activities for mini-courses require students to analyze, synthesize and evaluate bodies of knowledge, they are more likely to develop higher affective levels of thinking which involve valuing, conceptualizing and internalizing. As values and attitudes are internalized, they become a part of a student's way of life; and when this happens, his or her actions and behaviors are changed.

"It is more challenging to use teaching strategies that encourage students to think divergently in new and original ways, and to form a value system by integrating bits of information into a new and unique combination that fits into their way of life. Only then can a student find opportunities to apply or use the facts and knowledge he or she has learned."

GEORGIA DEPARTMENT OF EDUCATION
State Office Building
Atlanta, Georgia 30334

Office of Instructional Services
Division of Instructional Leadership
and Pupil Personnel
Curriculum Leadership Unit

Charles McDaniel
State Superintendent of Schools

MINI-COURSE OUTLINE

Mini-course Title

Student Objectives

Cognitive

Affective

Thought Processes to be Developed

Content (Topics to be Studied)

Questions to be Considered by Students

Activities and Strategies

Student

Teacher

Instruction Materials

Evaluation (In line with Objectives and Content)

Course

Student

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MINI-COURSE EVALUATION INSTRUMENT

MINI-COURSE TITLE _____

COGNITIVE

AFFECTIVE

(Lowest)

(Highest)

(Lowest)

(Highest)

I. OBJECTIVES
List

Knowledge	Compre- hension	Appli- cation	Analysis	Synthesis	Evaluation	Receiving	Responding	Valuing	Concep- tualizing	Internalizing

II. THOUGHT PROCESSES
(Check those that are included
in the mini course.)

--	--	--	--	--	--	--	--	--	--	--

III. ACTIVITIES
List

IV. DISSEMINATION
Process

--	--	--	--	--	--	--	--	--	--	--

Product

--	--	--	--	--	--	--	--	--	--	--

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V. QUESTIONS
 (to be considered by students)
 List

	NARROW		BROAD	
	COGNITIVE-MEMORY	CONVERGENT	DIVERGENT	EVALUATIVE
	Recall-Define Identify-Observe-Name Designate Yes or No	Explain-State relationships- Compare-Contrast	Infer-Predict- Hypothesize- Reconstruct	Judge-Value- Defend-Justify choice

Houston County School System
 Gifted Program

STUDENT BEHAVIORS

STRATEGIES	COGNITIVE (INTELLECTIVE)				AFFECTIVE (FEELING)			
	Fluent Thinking	Flexible Thinking	Original Thinking	Elaborative Thinking	Curiosity (Willingness)	Risk Taking (Courage)	Complexity (Challenge)	Imagination (Intuition)
Paradoxes								
Attributes								
Analogies								
Discrepancies								
Provocative Questions								
Examples of Change								
Examples of Habit								
Organized Random Search								
Skills of Search								
Tolerance for Ambiguity								
Intuitive Expression								
Adjustment to Development								
Study Creative People And Process								
Evaluate Situations								

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4 48

STRATEGIES	COGNITIVE (INTELLECTIVE)				AFFECTIVE (FEELING)			
	Fluent Thinking	Flexible Thinking	Original Thinking	Elaborative Thinking	Curiosity (Willingness)	Risk Taking (Courage)	Complexity (Challenge)	Imagination (Intuition)
Creative Reading Skill								
Creative Listening Skill								
Creative Writing Skill								
Visualization Skill								
Other								

INDEPENDENT STUDY GUIDE

for

THE GIFTED PROGRAM

Committee

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Independent Study Guide

Definition and Philosophy

Independent study has been defined in a variety of ways. Some definitions are broad, others are restrictive. For this program, independent study will be interpreted as **self-initiated** and **self-directed** study. It is not to be any form of teacher-designed or assigned project. Although the advisor may assist the student in the development or a class topic may generate an idea, the impetus must come from the student and the bulk of the decision-making must be the student's.

Goals of the Independent Study Program

The independent study program will provide an opportunity for

- individual learning experiences not included in the existing school curriculum;
- student-structured learning experiences;
- development of individual responsibility and self-discipline;
- development of individual interests;
- expansion of individual creativity;
- exploration and development of inquiry skills;
- interdisciplinary learning experiences;
- wide reading experiences;
- career and avocation exploration;
- development of self-evaluation procedures;
- learning experiences which emphasize life and the out-of-school world,
- learning experiences which involve community interaction.

Objectives

The student will be able to

- define and limit a problem as a basis for an independent study;
- develop a plan of self-evaluation based on defined objectives;
- develop and implement a plan to achieve the defined objectives;
- develop and implement a procedure for communication and consultation with the advisor.

Eligibility and Placement

Independent study will be open to gifted students in all subject matter areas and grade levels. To be accepted into the program, the student must define the problem and must design a study that is considered acceptable for credit. An advisor will assist in the design and approve it. *Since the school's space, facilities and personnel for the gifted are limited, there may be limitations placed on the number of students permitted to participate in a given time period.*

Types and Categories of Independent Study

Independent study may be an individual course in addition to a student's existing schedule or as a total or partial substitute for a course. If it is a course substitute, permission must be granted by a committee which includes the department chairperson, guidance counselor, parent, student, coordinator and principal. The basis for granting permission will include evaluation of past performance, recommendations and above all, comparative value of the alternatives to the

specific needs of the student. It is expected that further education, vocational interest and motivation would be major factors in such a decision.

Categories and Examples

Individualized Reading

Philosophy
Selected author
Selected type of literature—poetry, mystery, science fiction

Experimental Research

Psychology - learning experiments
Biology - genetic studies, marine biology
Earth Science - pollution studies, geology
Parapsychology

Historical Research

Writing a history - school, community, etc.
Archeological dig
Ethnic cultural comparative studies

Literary Research

Writing an original work
Mass media - tv, radio, etc.
Propaganda
Literary analysis

Project - Industrial and Fine Arts

Original creative work - music, art
Developing a copy
Improvement of the school through art and music

Vocational, Avocational Exploration

Athletic officiating
Instructional aides
Computer application
Surveying
School secretary

Community Assistance

Hospital skills
Legal work
Environmental improvement
Drug center
Social work
Political work

All possible areas will be considered.

Participation Time

Time to be devoted to independent study will be dictated by the nature of the study. In-school studies may be a full year or as little as one report period. It is recommended that studies be developed to coincide with a given report period.

Schedules, Meetings and Records

The student's schedule may be adapted to permit a block of time for independent study.

Student/advisor meetings will be scheduled by the student at the discretion of the advisor. It is recommended that advisors and students meet often enough to carry on a reasonable level of communication and assistance and that a record of the meetings with a note on problems and accomplishments be maintained.

A student file will be established in the coordinator's office to keep a record of all communications. This file will be available to the student at any time. All grade reporting information will be placed in the permanent record file in the guidance office.

Advisor's Role and Selection

In-school independent study advisors may be any classroom teacher, administrator, counselor or professional staff member.

Out-of-school study advisors may be any adult competent in the area of the student's interest who will accept the responsibility. It is hoped that parents with professional and vocational competencies will be interested in becoming advisors.

Advisor selection will be based on availability and interest and will be determined by the coordinator. Students may recommend an advisor, but the final decision will be made by the coordinator.

The advisor is responsible for providing professional guidance in the development and evaluation of the product and work of the student. The advisor should do as little of the work as possible and rely on the student to be responsible enough to carry forth the study.

The advisor should be gentle enough not to destroy initiative and creativity and strong enough to stimulate consistent growth and completion.

The advisor should meet with the student often enough to provide steady progress and assistance.

Student's Role

The student will be responsible for requesting independent study and identifying or selecting an area of interest.

The student will develop a set of specific study objectives.

The student will meet with the advisor to develop the study.

The student will have a deadline for accomplishing the objectives and a schedule of meetings with the advisor.

The student will submit a final product as defined by the objectives.

The student will evaluate self to determine a grade, if appropriate.

The student will follow any existing rules for conducting business in any school area or out-of-school area.

Coordinator's Role

The coordinator will be responsible for the development, organization, coordination and advisorship of the independent study program.

The coordinator will be involved in all decision-making concerning the program.

The coordinator will disseminate information concerning the program.

The coordinator will secure in-school advisors, schedule seminars and evaluate studies.

The coordinator will provide a plan of presentation for sharing information on the completed studies.

The coordinator will develop a plan for evaluation of the program in an organized fashion. (At the end of each year, a report will be submitted summarizing the level and type of participation, quality of productivity and any significant research findings with recommendations for any needed changes.)

Parent's Role

It is the responsibility of the parent to become aware of the independent study undertaken and grant approval for participation of her/his child. Such participation may entail transportation and other monetary considerations beyond the school's capacity. The parent should provide encouragement but should never become a party in the preparation of any portion of the study taken.

Evaluation: Student - grading, credit

The major purpose of evaluation is to assist the student to develop the ability to evaluate progress. Student progress will be evaluated on the basis of the achievement of objectives defined for the program and objectives defined by the student for a given study.

For in-school and course substitute studies the student will be given an option of a pass-fail system or a course substitute, the letter grading system is required. Level of performance as defined by the student, advisor and coordinator as co-equals will determine the student's grade. If the pass-fail system is chosen, the student, advisor and coordinator in a majority decision will determine the final outcome. In any case, the grading will be based on the final product in relation to the defined objectives. In all cases where a pass-fail system is used for evaluation, credits will be granted, but they will not be figured in class standing. The credit value of an independent study will be determined by the use of the state formula which is based on the time spent in participation. Credit value will be determined by the coordinator, principal and guidance department.

Evaluation: Program

The program will be evaluated on an ongoing basis. Surveys of students, teachers, and parents will be used in determining program effectiveness. An annual report will reflect student involvement and accomplishments.

**INDEPENDENT STUDY
PRELIMINARY APPLICATION**

DATE _____

NAME _____ GRADE _____ AGE _____

SCHOOL _____ HOME ROOM TEACHER _____

HOME ADDRESS _____

HOME PHONE _____

PARENTS _____

PROPOSED TOPIC STUDY

REASONS FOR TOPIC SELECTION

METHOD (How will you do it?)

RESOURCES YOU WILL USE (i.e. people, material)

INTENDED PRODUCT

INTENDED AUDIENCE(S)

RECOMMENDED ADVISOR _____ DEPARTMENT _____

If there are any questions call the coordinator.

Signature (Student) _____

Signature (Parent) _____

INDIVIDUAL PROGRESS CHART

	PROGRAM OBJECTIVES	PERSONAL OBJECTIVES	PERFORMANCE OBJECTIVES	CONTRACT OBJECTIVES
PERFORMANCE LEVELS	Definition of Problem	Objective Writing	Plan of Action	Plan of Evaluation
	Communication	Responsibility	Self-discipline	Self-motivation
		Productive Use of Allotted Study Time	Performance for Results	Achievement According to Expectancy
			Production of Worthwhile End Product	Social/Personal Relationships
ABOVE SATISFACTORY				
SATISFACTORY				
BELOW SATISFACTORY				

SESSION _____

TEACHER _____

STUDENT _____

TEACHER

STUDENT

COMMENTS

STUDY TOUR GUIDELINES

The following is a suggested outline for teachers to use in organizing a study tour. The outline may also be used by students in deciding what they wish to study while on a tour and how they plan to go about it. The outline has been filled in to give teachers an example of how it may be used.

Gloria Harrison
Walton County School System

- I. **Tolerance for ambiguity**—Opportunities for students to deal with open-ended questions, some of which are puzzling and intriguing may often arise during study tours. Use of questions during discussions and for research purposes should aid students in learning to question and to ponder, to pursue knowledge for the sake of personal growth toward that integrated self.
- J. **Examples of change**—Study tours should provide opportunities for students to make new, sometimes fantastic discoveries by observing, studying and describing changes they see which take place.
- K. **Adjustment to change**—The study tour process allows ideas to grow and piggy back from each other. Changes in thinking can begin to take place as students grow into the larger world of study and experience.
- L. **Paradox**—Ample opportunities should be provided for figuring out the strange and illusive truths which just don't seem right. Even if answers are not to the student's satisfaction, the questions help them see beyond the world of absolute to a world of probability.
- M. **Organized random search**—Through study tours students should have an opportunity to seek answers to real questions related to the study tour. Random search activities allow students to keep on the lookout for answers which fit old, new or incubating questions.
- N. **Provocative questions**—Provocative questions provide an opportunity for students to use their higher thought processes.
- O. **Discrepancy**—On any study there will be gaps or limitations in what is known and in what is perceived. The frustrations that students experience as they try to fill the gaps should challenge them to solve the riddles for locating missing parts.
- P. **Evaluative situations**—Students should be given opportunities for measuring the long and short range consequences of study tour activities. Implications can be seen and judgements made. Tour activities can lead to activities such as investigative reporting and concept formation through creative expression.
- Q. **Creative listening through imitative expression**—Students, through study tours can adapt ideas and see new idea patterns which can be used for combinations of productive ideas.

III. Outline of Plan of Action for Beginning and Completing A Study Tour

A. How will I begin?

Each tour requires individualization according to the specific needs of each group. Answers to the above question provides the individualization.

B. Materials I will need to put together the tour.

Each study tour will be unique to the group making the plans. The nine steps given below should help to give direction to planning.

1. Obtain a highway map of the area to be visited. Note historical sites, wildlife refuges and other points of interest.
2. Write to the department of natural resources — local, state or national. Ask for additional addresses and phone numbers which might help.
3. Write or call any or all of the following possibilities for help in planning study tour activities.
 - Area planning and development commissions
 - Archive departments (city, county, state)
 - Government administrative agencies (C,C,S)
 - Historical societies (C,C,S)
 - Cultural arts centers (C,C,S)
 - CESA units
 - National parks and recreation services
 - Businesses, industries, corporations (oil companies or any big companies which sponsor the educational television programs—look for those which have sponsorships of any type educational projects)
 - Education departments in public schools, colleges, private schools, subject area contacts in these places and individual contacts, even personal acquaintances.
 - Hotels, motels, park lodging facilities
 - Environmental education agencies
 - Any other viable contacts including contacts made through local newspapers and magazines or public relations brochures
 - Friends and colleagues
4. Write letters of request for information regarding tours, facilities lodging and cost.
5. Follow up on replies. Expressions of gratitude helps public relations.
6. Narrow plans and firm up schedule of events to a point so that cost (if any) per participant can be established — travel, lodging, food, admission cost, insurance (if needed) and extra spending money.
7. Send tentative schedule of activities and estimated cost to parents. Request a response. Sometimes it may be necessary to request a deposit to guarantee travel cost.
8. Compile results and make final arrangements for transportation, lodging and scheduled events. In many instances it is advisable for the teacher to make the trip, stopping at all tour highlights. This avoids confusion when the study tour is actually in progress.
9. Get permission slips signed and collect all monies so that checks for paying can be written prior to leaving.

IV. Performance Objectives

A. Accomplishments

Students should be able to make successful contributions to the study tour that relate to four performance areas; I investigate, I integrate and I become a part of my world.

B. Study tour product

The tour itself is a product which should help students gain more sophisticated skills in above performance areas. Other products may be planned.

C. Skills to be accomplished

The skills to be accomplished must be individualized according to each student. New skills in synthesizing and integrating the world outside the student's with the world of themselves should emerge.

D. Integration of learning experiences with day to day living

Study tours require the involvement of self in a total day-to-day existence; therefore, the overall learning activities become a part of the student's living.

V. Dissemination of Study Tour Results

A. Student interaction

B. News articles

C. Essays

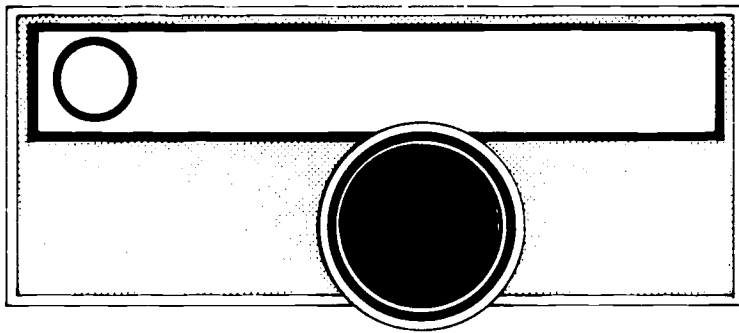
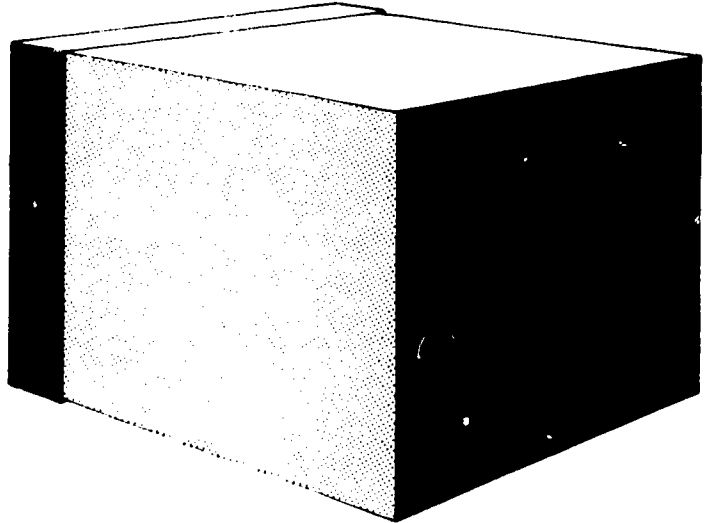
D. Photographs

VI. Additional Comments

If a student plans the study tour, other students may participate. Parents, teachers or students can plan valuable tours which, if shared, can become the basis for individual study activities. In this way interpersonal relationships aid the overall developmental process toward the integrated self. Parent and teacher approval should be obtained for any student planned tour or individual study plan.

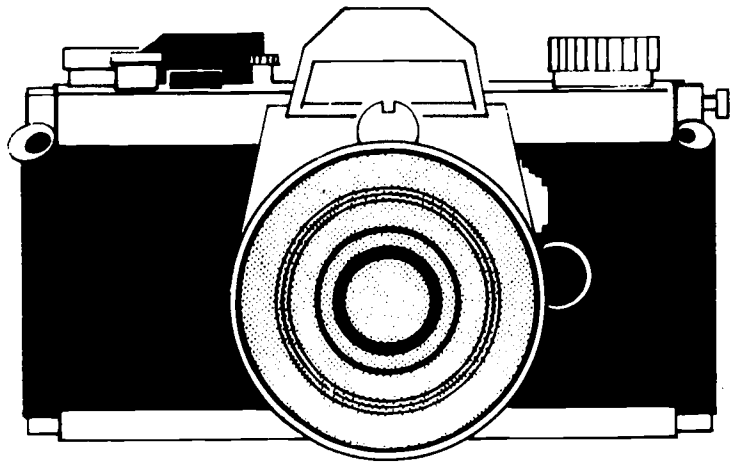
SAY CHEEZ

Pinhole camera



Instamatic camera

35mm camera



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This unit consists of compiled mini-units of basic through advanced photography.

Target Groups

Part I	Primary Grades
Part II	Primary Grades
Part III	Upper Elementary
Part IV	Upper Elementary
Part V	Junior High School
Part VI	Junior and Senior High School
Part VII	Junior and Senior High School
Part VIII	Junior and Senior High School

Committee

Brenda Bowman	Morgan County
Pat Brady	Clayton County
Mary Nell Clarke	Clayton County
Nancy Hodge	Baldwin County
Jan May	Clayton County
Charles E. Smith	Richmond County
Helen Solomon	Walker County
Glenda Willis	Clayton County
Ann Donalson	Wayne County
Cobb County Teachers of the Gifted	

SAY CHEEZ

PART I

Mini-course Title: Beginning Photography - **You Can Take Pictures**

Age Group: Primary grades

I. Student Objectives

A. Cognitive

To be able to take four out of six pictures with an instamatic - type or any other simple camera without camera movement or other serious technical error.

B. Affective

1. To be able to work productively and congenially with a group to plan and produce a picture story for others to enjoy.
2. To begin to think of picture taking at home as a personal pleasure.

II. Thought Processes to be Developed

- A. Deductive reasoning to determine cause of snapshot errors
- B. Creative story planning in a group
- C. Sequencing the telling of the story for snapshot illustrations

III. Instructional Materials

- A. A simple-type camera and two rolls of film with processing
Sax Arts and Crafts Ask for Diana camera approximately \$1.60 plus shipping charges.
207 N. Milwaukee St.
Milwaukee, WI 53202
Power Sales Co. Must order Diana cameras by the case—72 cameras per case.
Box 113
Willow Grove, PA 19090
Visual Motivations Co. Ask for Snapshotter Camera information.
Div. KFL
Regal Road
King of Prussia, PA 19406
- B. Materials for mounting photos into book form with captions. Laminate the pages if possible.
- C. *Peter and His Camera*, by Gunger Spitzing and Karl Steinorth, published by Morgan and Morgan, Inc.

IV. Content

- A. Vocabulary
- B. How a camera works. Draw a picture of a camera and label the parts.
- C. Using a simple-type camera
- D. Creative story writing in a group
- E. Planning and taking a sequence of pictures illustrating the story
- F. Preparing a booklet of the picture story for library lending

V. Questions to be Considered by Students

- A. How are parts of a camera like parts of our eyes?
- B. What kind of story could happen right here at our school?
- C. Which parts of the story would be important to photograph?
- D. What should be written beneath each photo to tell the story?

VI. Activities and Strategies

A. Student

1. Practice shooting pictures with empty cameras.
2. Plan a story with a small group.
3. Take turns being actor and cameraman while shooting the story.
4. Write captions for the pictures arranged in book form.

B. Teacher

1. Demonstrate parts of the camera.
2. Demonstrate use of the camera to avoid blurred pictures.
3. Show samples of blurred pictures to illustrate mistakes.
4. Guide students to select a story suitable for filming on the school grounds.
5. Direct the acting and picture taking.
6. Have film developed and printed.
7. Arrange preparation of an illustrated story book and its distribution through the school library.

C. Enrichment Suggestions

1. Type I

- a. Field trip to photographic exhibit
- b. Guest speaker photographer with display of his or her work (i.e. newspaper photographer)
- c. Show selected programs from *Your Programs from Kodak* (see listing of sources for Type III activities for address).

2. Type III

- a. Have a child take the photo story book to the primary rooms to let everyone know the book will be available in the library.
- b. Have a child take pictures of geometry in nature.
- c. Have student create and complete word finds using the vocabulary listed.
- d. Sources for more Type III activities

Price, Ed. "Slide's - Eye View," *Teacher* May/June 1976; p. 40-41.

Graves, Ginny. "Education for Viewing," *Arts and Activities* December, 1970, p. 24-25.

Meere, Paula D. "Picture-Taking and Story Making," *Teacher*, April, 1977; p. 58, 62.

Freeman, Valdora Y. "An AV Classroom for Every Classroom," *Teacher*, May/June, 1976; p. 44-45.

Classroom Projects Using Photography Part I: For the Elementary School Level. Eastman Kodak Company, 1975. Order from Eastman Kodak Company, Rochester, N.Y. 14650. \$6.95.

Outline for Teaching a Course in Basic Darkroom Technique. Order free from Consumer Markets Division of Kodak.

Outline for Teaching a Course in Basic Photography. Order from Kodak.

Photography as a Fourth "R." A packet of reprints from *Popular Photography*.

Order packet from Popular Photography, Educational Information Division, One Park Avenue, New York, N.Y. 10016. Phone number is (212) 725-3777.

Your Programs from Kodak. This catalog describes movies and slide shows which are available on a free loan basis. Write to Eastman Kodak Company, Photo Information, Department 841, 343 State Street, Rochester, N.Y. 14650.

VII. Evaluation

A. Course

1. Did most of the students contribute and work together well?
2. Did the class produce a story book worthy of placing in the school library?

B. Student

1. Did I take clear, sharp pictures?
2. Did I make many mistakes?
3. Did I contribute ideas for the story?
4. Did I write my best in the book?

Vocabulary Development

1. **box** keeps light out and holds other parts.
2. **lens** round piece of glass or plastic through which light goes into the box.
3. **shutter** a door in front of the lens; it opens to let light through the lens then closes to keep light from going through the lens.
4. **shutter release** a button or lever to press to take a picture; the shutter release opens the shutter so light can enter the lens.
5. **film advance** a lever to push to make the film move inside the camera; it puts a new piece of the film behind the lens.
6. **viewfinder** what the photographer looks through when taking a picture; it is used to "frame" the picture.
7. **film** roll of sensitized material that is put into the camera; the light from the subject goes through the lens and hits the film.
8. **subject** person, animal or other object of which a picture is being taken.
9. **negative** unfinished picture; the black and white colors are reversed.
10. **exposure control** a lever that makes the shutter open smaller or larger; how you set this depends on the amount of light available.
11. **distance control** move this according to whether a portrait, group or scenic picture is being made.

Definitions 10 and 11 will not be needed with instamatics or other very simple cameras. However, these mechanisms are on the inexpensive Diana cameras.

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PART II — EASY PHOTOGRAPHY

Age Group: Primary grades or any group that has no experience with photography.

I. Student Objectives

A. Cognitive

1. To aid the student's understanding of the general process of photography
2. To demonstrate the various types of cameras
3. To explain basic darkroom procedures
4. To build a simple pinhole camera
5. To become familiar with the historical development of photography

B. Affective

1. To help students enjoy photography
2. To help students set the artistic qualities in some photography
3. To help students discover mysteries of photography

II. Thought Processes to be Developed

- A. Discrimination between types of cameras
- B. Sequence - What steps are necessary when developing film.
- C. Analysis - deciding what went wrong in bad pictures
- D. Memory - learning the basic parts of a camera

III. Instructional Materials

- A. Interesting pictures
- B. Materials for pinhole cameras

IV. Content - (See Attachment)

- A. Basic camera parts
- B. Four basic types of cameras
- C. Basic darkroom procedures
- D. The historical development of photography
- E. Procedure for building a pinhole camera

V. Questions to be Considered by Students

- A. What are the critical variables differentiating between cameras?
- B. What is the purpose of each camera part and how does it affect the picture?
- C. What are the proper chemicals used in the darkroom?
- D. When did the big breakthrough in photography occur?
- E. How can I change my pinhole to make better pictures?
- F. Why study photography?

VI. Activities and Strategies

A. Student

1. Bring his or her camera to class
2. Build a pinhole camera
3. Cut out pictures in magazines and discuss why they like or dislike them

B. Teacher

1. Lead the discussion in content areas
2. Provide most of the materials for pinhole camera
3. Find interesting pictures and bring them to class for discussion
4. Find (or put together) a darkroom and let students experience seeing a picture being developed

VII. Evaluation

For evaluation procedures or questions for this mini-course, see "Teaching Basic Camera Parts" which is Section III of Part VII of the completed mini-courses.

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PART III

Age Group: Upper elementary

I. Student Objective

A. Cognitive

Students will

1. identify basic darkroom equipment;
2. list the procedures for developing paper film;
3. describe the chemical change taking place in the developing process;
4. define clearing agent, contact print, cropping, darkroom, developer, developing tank, emulsion side, enlarger, fixing bath, negative, overexposure, print, safelight, stop bath and underexposure;
5. interpret chart contained in film package to determine developing time;
6. give examples of overexposure, underexposure, cropping;
7. predict consequences of unclean negatives and enlarger lens and contamination of chemicals;
8. distinguish between chemicals used in film and paper process;
9. construct chart indicating weather conditions; exposure time, results of prints and solutions for problems;
10. use darkroom equipment to demonstrate how to develop paper prints, film, mix chemicals, enlarge a negative, crop a print, prepare a contact print;
11. produce a clear print;
12. list all the problems and solutions involved in taking pictures and developing paper and film;
13. create a photo essay and list steps in preparing a photo essay;
14. set standards for evaluation of prints—which are good, which are bad, which are liked;
15. rate from good to bad the prints made, according to standards set;
16. compare a print developed by a professional with his or her own developing of the same print;
17. summarize the value of learning photography.

B. Affective

Students will

1. ask questions concerning photography, identify darkroom equipment, name steps in processing paper and film;
2. read additional material on photography; perform voluntary tasks outside the class;
3. share knowledge gained outside class with classmates
 - Join a photography club
 - Form a photography club
 - Set up own darkroom at home;
4. recognize the role of systematic planning in solving problems concerning photography;
5. display safety consciousness in the darkroom, demonstrate self-reliance in working independently in the darkroom;
6. practice cooperation in group activities;
7. use objective approach in solving problems.

II. Thought Processes to be Developed

Logical thinking
Decision making
Creative expression

III. Instructional Materials

Photographic paper, developer, stop bath, fixer, interesting objects such as scissors, paper clips, weeds, keys or simple cutouts of objects, light source and chart from Kodak entitled "Photography—How it Works."

IV. Content

- A. Chemistry
- B. Ratio
- C. Measurement
- D. Estimation

V. Activities and Strategies

A. Student

1. Plan what he or she wants to accomplish.
2. List problems involved in planning a photo essay using as few words as possible.
3. List improvements that can be made in the arrangement of a darkroom.
4. Design own darkroom.

B. Teacher

1. Present background information on photography (see *Camera Obscura*)
2. Construct milk carton camera to discover that a camera "sees" an inverted image (directions for assembly in Additional Information Section).
3. Construct a pinhole camera (directions for assembly in "How to Make and Use a Pinhole Camera").
4. Emphasize safety in the darkroom.

VI. Questions to be Considered by Students

No specific questions are outlined for this mini-course. Each teacher, in adapting this mini-course must outline those questions he or she feels necessary.

VII. Evaluation

Each teacher must determine his or her own evaluation procedures in light of objectives, questions and activities chosen for a specific group.

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PART IV

Mini-course Title: Intermediate Photography - "Taking Pictures People Like"

Age Group: Grades four, five and six

I. Student Objectives

A. Cognitive

Students will

1. be able to handle a simple type camera under varying light conditions and for special effects,
2. apply principles of art composition to photography,
3. understand what makes "human interest" in a photograph.

B. Affective

Students will

1. enjoy the competition in a photo contest,
2. use creative imagination in taking pictures,
3. develop pride in ability to take pictures people like,
4. apply rules fairly and objectively, even when judging your own photos.

II. Thought Processes to be Developed

- A. Evaluation processes as used in acting as a photo contest judge
- B. Decision making in choosing subjects and compositions for contest pictures with a limited amount of film
- C. Creative imagination in finding subjects for contest

III. Instructional Materials

- A. Enough instamatic-type cameras for one for each two students, plus black and white film and commercial developing and printing.
- B. A teacher-collected set of magazine photos to illustrate lessons.
- C. Enlargements of winning photos.
Peter and His Camera by Gunter Spitzing and Dr. Karl Steinorth, published by Morgan and Morgan, Inc. is recommended as a resource book.
- D. Diana Cameras
Sax Arts and Crafts
207 N. Milwaukee St.
Milwaukee, WI 53202

Power Sales Co.
Box 113
Willow Grove, PA 19090

IV. Content

- A. Vocabulary
- B. Lighting in photography—back lighting, fill flash, reflector fill, silhouettes

- C. Special effects with instamatics or simple cameras—trick photography, stopping action, foreground for depth, unusual angles, story-telling photos and photo series.
- D. Principles of art applied to photo composition—placement of center of interest, emphasis, unity and harmony.
- E. A snapshot contest with each student taking six pictures with a simple type camera and black and white film, shooting two each for the contest divisions (1) people in action or candid poses, (2) close-up pictures and (3) pictures with no people or animals. All photos are to be taken on the school campus during class time.

V. Questions to be Considered by Students

- A. What makes a photograph have "human interest"?
- B. How is photography "art"?
- C. How can you use your technical knowledge in handling instamatics to make interesting pictures?

VI. Activities and Strategies

A. Student

- 1. Collect examples of photographs from magazines illustrating the use of art principles and human interest.
- 2. Plan carefully, on paper, what pictures you will take for the contest.
- 3. Help judge the contest fairly, applying all the information you have learned, even to your own picture.

B. Teacher

- 1. Illustrate the principles of art and human interest and special effects you are teaching by using examples.
- 2. Have students bring more examples from magazines, then arrange these into an informal quiz. (You could mount the examples and display them on a blackboard ledge.)
- 3. Conduct the snapshot contest.
Have enlargements made of the winning pictures for prizes.

C. Enrichment Suggestions

1. Type I

- a. Show selected programs from *Your Programs from Kodak* (See source list activities in primary section for address.)
- b. Set up a display of cameras and discuss four basic types.
- c. Show a scrapbook of photographs.
- d. Look at pictures in magazines and discuss composition techniques.

2. Type III

- a. Hang enlargements of winning photos in hall, lobby of the school, or enter them in an art show.
- b. Try to get some winning photos published in local newspapers or in magazines of children's work.
- c. Have a student photograph nature - trees, for example, then compose a haiku poem to accompany your photo. (Remember, Haiku is a Japanese form usually consisting of three unrhymed lines containing respectively five, seven and five syllables. Traditionally it centers on nature.)

VII. Evaluation

Course

1. Did each student enjoy some success in improving their picture-taking ability?
2. Are the students enthusiastic about picture taking?

Student

1. Did you take technically good pictures while trying to be creative?
2. Were you able to be fair in the contest judging?

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PART V

A PHOTOGRAPHIC FINISH

Age Group: 7th grade

I. Student Objectives

A. Cognitive

Students will

1. gain a basic understanding of photography;
2. learn basic information about cameras through examining and using them;
3. become acquainted with the various kinds of films through research information and purchasing and using film;
4. become familiar with picture taking by taking pictures;
5. understand film developing through lectures, demonstrations, and actually developing film;
6. become acquainted with enlarging and printing;

B. Affective

Students will

1. stimulate individual creativity;
2. heighten perception of their environment;
3. appreciate photography.

II. Thought Processes to be Developed

- A. Knowledge
- B. Application
- C. Analysis
- D. Synthesis

III. Instructional Materials

- A. Cameras
- B. Films
- C. Photographs
- D. Filmstrips
- E. Film processing essentials

IV. Contents

- A. Photography
- B. Cameras
- C. Films
- D. Picture taking
- E. Processing film and picture production

V. Questions to be Considered by Students

- A. What is photography?
- B. How do still pictures differ from motion pictures?
- C. What is the basic piece of photographic equipment?
- D. How do fixed controls work? Adjustable controls?
- E. What is focusing? Exposure?
- F. What are the two basic kinds of film?
- G. How does black and white film differ from color film?
- H. How do color sensitivity and film speed affect the choice of film to be used?
- I. What effect do the following have on picture taking — (a) lighting, (b) background, (c) scenery, (d) focusing, (e) camera movement?
- J. How do these processing techniques work — (a) developing, (b) enlarging, (c) printing?

VI. Activities and Strategies

A. Student

1. Locate and discuss the following camera parts — (a) view finder, (b) shutter release button, (c) shutter, (d) aperture, (e) lens, (f) film advancer, (g) take-up spool, (h) flash.
2. Go on a picture taking field trip.
3. Develop film and print pictures.
4. Make slides.
5. Make animated movies.
6. Have discussions.

B. Teacher

1. Lectures
2. Demonstrations
3. Discussions
4. Assist students
5. Bring in resources (persons and materials)

VII. Evaluation

A. Course

1. Did the mini-course include the things that you thought were necessary? Suggestions?
2. Is there anything that you think should be added to the mini-course? Deleted?
3. Were the methods and materials used appropriate? If no, please comment.

B. Student

1. The students will demonstrate certain things that they learn as they take the mini-course.
2. What did you like most of all about the mini-course? Least?
3. Has the mini-course helped you to be more observant of your surroundings? Explain.
4. Do you plan to become more involved in photography in the future? How?

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PART VI

Mini-course Title: Advanced Photography and Darkroom Work

Age Group: Junior and senior high school

I. Student Objectives

A. Cognitive

Students will

1. take pictures under different conditions illustrating useful knowledge of all the workings of a good 35mm camera;
2. plan a story-telling sequence, take color slide pictures, edit them and add a taped narrative while working in a small group;
3. understand the chemistry involved in black and white photographic film developing and darkroom printing;
4. make good black and white prints in the darkroom and develop film in a daylight tank.

B. Affective

Students will

1. feel confident in using photography as a communication skill;
2. feel satisfaction in helping to produce a slide show that is useful to the school.

II. Thought Processes to be Developed

A. Planning skills

B. Attention to precise detail in learning new procedures.

C. Artistic judgement in "cropping" prints in the darkroom.

III. Instruction Materials

A. A good 35mm camera, with automatic exposure, through-the-lens reflex viewing, at least an f2 lens, and electronic flash and case

B. Cyr, Don. "Develop Your Own Film," *Arts and Activities*, December 1970, p. 28-32

C. A black bag, tanks and chemicals to develop film

D. An established darkroom.

(If families of students have good 35 mm cameras they will let them use, it would be even better for each student to use his or her own.)

E. A complete darkroom outfit with an enlarger and supplies of chemicals and paper

F. Bulk film loader and 50 foot rolls of black and white film of ASA400 (to eliminate need for flash) and empty film cartridges

G. Color slide film and processing—about eight rolls of 20 exposure per slide show

H. A slide viewing box for editing, a slide projector and tape recorder with blank tapes

- I. Kodak (or other) instructional films on camera use and darkroom work (free rental)
- J. Large sheets of paper for planning boards

IV. Content

- A. Use of a 35mm camera
- B. Planning, shooting, editing and narrating a 35mm color slide show with a sound tape in a small group
- C. The chemistry of photography, including the importance of silver halides, film and paper differences and what developing does to negatives and prints
- D. Individual practice in developing black and white film in a daylight tank
- E. Individual practice in printing enlargements

V. Questions to Consider by Students

- A. When would I use black and white, and when would I prefer to use color slide film or color print film in a 35mm camera?
- B. What are some ways I can use my knowledge of 35mm cameras and darkroom work for better communications?
- C. Why is silver so important to our country?
- D. What are some reasons for being neat and orderly in a darkroom?

VI. Activities and Strategies for Student and Teacher

A. Camera

1. Show the class the particular 35mm camera to be used and demonstrate its features.
2. Discuss special techniques in using color slide film.
3. Contact the principal or otherwise determine a need for a color slide taped presentation in your school.
4. Have the class, or small groups, plan the story-telling picture sequence by sketching the scenes on a planning board.
5. Shoot four times as much film as needed for the finished show.
6. Have the students edit the pictures, then write and tape record a narrative with a musical background.

B. Darkroom

1. Show a Kodak (or other) film on darkroom procedures.
2. Demonstrate the particular equipment in your darkroom.
3. Discuss procedures for your darkroom, stressing cleanliness.
4. Review the chemistry involved. 80

5. Discuss and illustrate the artistic composition and possibilities in the selective enlarging (cropping) of negatives.
6. Arrange a schedule that allows each student to practice making enlargements from his or her **own** negatives.
7. Demonstrate the use of a bulk film loader and have each load a short roll, shoot it and immediately develop it.

C. Type I Enrichment Activities

1. Field trip to Eastman Kodak processing plant in Chamblee.
2. Resource speaker—professional photographer from a newspaper, professional studio, camera shop or parents.
3. Field trip to a photography exhibit - Contact High Museum of Art in Atlanta and local sources.
4. Show selected programs from *Your Own Programs from Kodak* (see sources of Type III activities for address).

D. Type III Enrichment Activities

1. Set up your own darkroom.
2. Make a photographic comic strip.
3. Make a study of your photographs and evaluate your work.
4. Make a photo report.
5. Make a study of the different uses and examples of lighting (back, side, front, existing or natural)
6. Learn to take pictures of your television screen.
7. Form a photography club.
8. Let the students make a ceremony of showing and presenting the slide show to the school.
9. Students should be using their photography to do classroom projects in social studies, science, etc.

VII. Evaluation

Course

1. Did everyone participate enough to get first-hand experience?
2. Did we produce a useful slide show product?
3. Did the darkroom schedule run efficiently?

Student

1. Do I feel confident about using a good camera to express myself.
1. Could I load film, develop it and make good enlargements in the darkroom without help?

SAY CHEEZ

PART VII

Mini-course Title: Cinematography and Review of Still Photography

Age Group: Junior and senior high school

I. Student Objectives

A. Cognitive

Students will

1. review still photography and urge its use as a communication tool in regular school work or some other activity;
2. add movie taking to photographic skills;
3. plan, shoot and edit a movie, working with a small group.

B. Affective

Students will

1. understand the complexity of the processes involved in film making for movies or TV;
2. decide individually whether they want an opportunity for a career or avocation in the photographic field.

II. Thought Processes to be Developed

- A. Planning in a group
- B. Application of photographic skills to solving communications problems.

III. Instructional Materials

- A. A good super 8 movie camera with lots of features (single frame, lap dissolve, zoom lens, etc.) is desirable, but any 8mm or 16mm camera could be used, or even a video tape recorder, especially if it is portable
- B. Enough film for four times the length of finished movie after editing
- C. A good, sturdy tripod for the movie camera
- D. Kodak (or other) books of instruction in movie-making
- E. Kodak (or other) films on movie techniques, including animation
- F. Sample films of animation
- G. A good 35mm camera for photography, for photography review and lending
- H. Cyr, Don. "Develop Your Own Film," *Arts and Activities*, December, 1970, p. 28-32

IV. Content

- A. Keep a good 35mm camera available for student use and encourage students to use it for special class reports or experiments in regular classrooms.
- B. If there is not already such, arrange to have a student or students be school photographers.

- C. Instruct the class in the use of your movie equipment and in techniques of movie photography.
- D. Let two or three students plan and shoot a short animated film to demonstrate the techniques involved.
- E. Let the class plan, act, shoot, edit and add narration to a movie that will be useful to the school.

V. Questions to be Considered by Students.....

- A. How can photography help you express yourself better?
- B. What special talents do you have to offer the movie-making groups?
- C. Are you best at being a writer, director, actor or technician?

VI. Activities and Strategies

A. Student

- 1. Make an effort to practice your photographic skills by using them for a report, project or experiment in some regular class.
- 2. Take an active part and contribute fully to the group movie production.

B. Teacher

- 1. Have students brainstorm on possible ways to use photography in school classes or outside activities, then let them share anything they produce with the class.
- 2. Borrow a free Kodak (or other) film for instruction in movie cameras and techniques.
- 3. Have students watch movies or TV shows and make notes on the camera techniques used.
- 4. Let students practice filming techniques by using a video tape recorder, if one is available.
- 5. Consult with school principal to find a useful subject for the movie your group will produce. (It does not have to be a mundane film just because you have a mundane subject.)
- 6. Supervise movie production, but try to let decisions be made by the students.
- 7. Allow some film for two or three students (only) to produce an animated film.
- 8. Invite a camera shop to send someone to demonstrate the Polaroid instant movies.

C. Type I Activities for High School

- 1. Field trip to Eastman Kodak processing plant in Chamblee.
- 2. Resource speaker - a professional or amateur photographer from (a) newspaper (b) camera shop (c) magazine (d) studio (e) parent (f) photography club member in high school (g) military installations (contact P.R. Officer) (h) TV
- 3. Field trip to a photography exhibit. Contact High Museum of Art in Atlanta on local sources.
- 4. Show selected programs from *Your Own Programs from Kodak* (see primary type III source list for address).
- 5. Field trip to TV studio.
- 6. Field trip to movie set to observe filming.
- 7. Field trip to photography department at a newspaper or magazine.

D. Type III Enrichment Activities

- 1. Show the finished film to a PTA meeting or student assembly.
- 2. Enter your film in Kodak's annual high school movie making contest.
- 3. Inquire about the Kodak prize annually for photography used in a science fair project.
- 4. Set up your own darkroom.
- 5. Form a photography club.
- 6. Make a study of your photographs and critique your work.

7. Spend a day with a professional photographer.
8. Become a school photographer on your school newspaper or annual staff.

VII. Evaluation

Course

1. Does it seem that the movie produced will be useful to the school?
2. Did all students contribute to the production of the movie?
3. How many students are using photography as a tool?

Student

1. Do you feel confident about being able to use 35mm and movie cameras in your career, or for fun?
2. Did you contribute your best efforts to the movie the group produced?

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SAY CHEEZ

PART VIII

Mini-course Title: Film Animation

Target Group: Junior and senior high school

I. **Student Objectives**

A. **Cognitive**

Students will

1. understand the characteristics of a movie camera and to use them effectively;
2. grow in the ability to use the elements of art and the principles of design to relate an idea, to analyze visual information and to become aesthetically sensitive;
3. develop problem-solving skills by coping with many variables.

B. **Affective**

Students will

1. more objectively interpret the influence of media on our self concepts and our feelings about the world;
2. establish positive self-concepts and an appreciation of the contributions of others by working together and sharing individual talents and skills;
3. become aware of different points of view through the exploration of the time-space relationships possible with a movie camera;
4. better understand the patience and self-discipline necessary to achieve a long-range goal.

ii. **Thought Processes to be Developed**

- A. Creative imagination and originality through brainstorming and interaction with the available materials and the options within the camera.
- B. Research through visual and verbal communication skills.
- C. Problem solving and evaluation through the challenge of daily interaction with fellow cinematographers and the materials.

III. **Instructional Materials**

- A. A work area for filming including two light stands, a tripod and a 8mm or super 8 movie camera with single frame feature, diopters #1, 2, 3 and a zoom lens, if possible.
- B. A splicing center equipped with an editor, splicer, extra reels, super 8 splicing tape and egg cartons for film storage
- C. A storage area for art supplies which includes tempera paint, brushes, drawing paper, bristol board, play dough, fabrics, string and tape
- D. A research center including books on film animation, art, photography and other reading materials if a documentary approach is used

IV. Content

- A. Photography vocabulary
- B. Camera skills including, focus, zooms, fades, single frames, lighting, framing, special effects
- C. Camera care
- D. Animation technique (camera and drawings)
- E. Planning and limiting an idea for a film
- F. Preparing a storyboard
- G. Titling
- H. Credits
- I. Bibliography, if necessary
- J. Planning an accompanying tape
- K. Coordinating tape and film
- L. Presentation
- M. Evaluation

V. Questions to be Considered by Students

- A. How can I limit my ideas to something that I can handle in a film that will be seen for one to three minutes?
- B. How can I give my idea quality and depth?
- C. How can I use the options available in the camera to best present my idea?
- D. How can I help my partner film the action for his movie?
- E. How can man control light to do other things?

VI. Activities and Strategies

A. Student

1. Independently study the directions for using the camera and other equipment.
2. Brainstorm for ideas.
3. Plan and organize ideas using a story board or picture outline.
4. Plan for the title and accompanying tape.
5. Practice contour drawing from real objects and people.
6. Read about animation and art concepts from books and magazines in our classroom library.
7. Prepare backgrounds and moving figures or parts.
8. Film work with a partner.
9. Edit and splice film.
10. Prepare tape and coordinate with film.
11. Present work.

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B. Teacher

1. Create interest by showing films that were made using animation.
2. Plan a discussion on the development of movies and their dual role of reflecting and influencing our way of life.
3. Demonstrate how to take care of and use the equipment.
4. Plan brainstorming sessions.
5. Plan drawing sessions.
6. Demonstrate how to make figures that move from bristol board, play dough, or by using real people (pixillation).
7. Provide vocabulary for better communication during filming.
8. Organize work centers so students can handle equipment and clean up.
9. Work with each student independently.
10. Provide outlets for presenting work.
11. Help the student limit his ideas to a workable problem.
12. Suggest reading for solving different kinds of problems.

VII. Enrichment Suggestions

A. Type I

1. Plan field trips to art and photography exhibits, libraries which have video equipment, TV workshops, photographer's studio or go to a movie.
2. Invite a local photographer to your classroom.
3. Use state department films for discussion.
4. Plan a film festival for friends, other classes, parents or local clubs.
5. Compete in the annual media festival (contact your school librarian).

B. Type III

1. Design a mock Kinetoscope using drawings on paper.
2. Create flip card movies.
3. Draw directly on 16mm film with water proof markers and water proof inks (old movie film can be cleared with clorox). Show on school 16mm projector.
4. Make your own slides by drawing directly on the film and adding colored tissue.
5. Study the history of movies or the work of a famous director.
6. Analyze television commercials for film sequence, angles, transitions.
7. Plan a movie about your community, friends, feelings or for another class.

C. Sources for More Type III Activities

1. Anderson, Yvonne. *Teaching Film Animation to Children*. New York: Van Nostrand Reinhold Co., 1970.
2. Lidstone, John and Don McIntosh. *Children As Film Makers*. New York: Van Nostrand Reinhold Co., 1970.
3. Valdes, Joan and Jeanne Crow. *The Media Works*. New York: Cebco pflaum, 1973.

VIII. Evaluation

A. Course

1. Were the materials and information presented to the student so that he or she could use them in a productive and independent way?
2. Was the student included in planning and organizing the course?
3. Did the students grow in their concepts concerning creative thinking?
4. Was the process an exciting learning experience?
5. Is the product a worthy example of the experience?

B. Student

1. Do you feel that you know more about film making?
2. Did you extend yourself to do your very best?
3. Did you learn from your mistakes?
4. Were you willing to try new things?
5. Did you put up your materials so that your work would not interfere with another students filming?
6. Did you cooperate with your partner?
7. How can you use your new knowledge?

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PART IX

This section of the Say Cheez compiled mini-courses includes three sections, each of which is a course syllabus for teaching various aspects of a photography course. Section I was prepared by Jan May, a SCORE teacher in Clayton County. Section II was prepared by Glenda Wills, a SCORE teacher in Clayton County. Section III was prepared by Cobb County TARGET teachers.

SECTION I

COURSE IN BASIC PHOTOGRAPHY

I. Basic Objectives

- A. To learn the basics of picture taking
 - 1. Camera handling
 - 2. Proper exposure
 - 3. Flash photography
 - 4. Composition.
- B. To learn how to make effective photo reports

II. LESSON 1

A. What is a camera?

All cameras have the same basic parts.

1. A light tight box to keep light out and serve as a frame to hold other parts.
2. A lens to collect the light reflected from a subject which forms an image on the film. The lens may be factory-set for normal picture-taking distances, or it may be of the focusing type. The focusing type of lens is adjustable for the correct distance between the camera and the subject.
3. A lens opening to control the intensity of light reaching the film. The size of the lens opening may be fixed or adjustable. Some automatic cameras have a variety of lens openings.
4. A shutter to control the length of time that light reaches the film. The shutter keeps all light out until you take a picture. Simple cameras have one or two shutter speeds. Automatic and more versatile cameras may have wide range of shutter speeds. A fast shutter speed has the advantage of letting you capture actions scenes.
5. A shutter release to open and close the shutter.
6. A film-advance mechanism to advance the film for the next exposure.
7. A viewfinder to frame your picture area. If your camera didn't have a viewfinder, you wouldn't be able to tell what your camera sees when you take the picture. Today most cameras have the eye-level type of viewfinder.
8. Most cameras have a socket for flipflash, magicube, flashcube or flashbulb holder.

Draw a picture of a camera and label the parts.

B. Types of Cameras

Although all cameras are basically the same, some cameras offer certain features that others don't. There are basically three types of cameras: simple cameras, adjustable cameras and automatic (including instant) cameras.

1. **Simple Cameras.** We call any camera simple that doesn't offer a wide range of manual adjustments for shutter speed, distance setting and lens opening and that doesn't have an exposure-control system. Simple cameras have only one or two shutter speeds. And most simple cameras are factory-focused for normal picture-taking distances (four or five feet to infinity).

2. **Adjustable Cameras.** An adjustable camera has controls that allow you to take pictures under a wider range of conditions than is possible with a simple camera. Adjustable cameras have a selection for shutter speeds including very fast shutter speeds for action shots. Most adjustable cameras have focusing lenses which can be focused for close-ups — two to three feet and sometimes closer. Adjustable cameras also offer a wide range of lens openings. These lens openings are set by moving a lever, a pointer or a dial and are usually designated by f-numbers.

The small f-numbers on your camera correspond to large lens openings, and the large f-numbers refer to small lens openings. The largest lens opening in this series is $f/2.8$ and the smallest $f/22$.

3. **Automatic Cameras.** An automatic camera combines the ease of operation of a simple camera with some of the picture-taking versatility of an adjustable camera. Automatic cameras have an exposure-control system that regulates the size of the lens opening or the shutter speed (or both). Some automatic cameras have a fixed focus and a fixed shutter speed. On others, you set the shutter speed or lens opening as well. Instant cameras fall into this category.

C. What is Film?

Film is very simply, light-sensitive emulsion on a plastic base.

An easy way to think of film is to compare it with bread and butter. Think of the bread as the base, the butter as the emulsion. When you hold this combination in your hand, what you feel and see is mostly bread, the base—not butter, the emulsion. The base (bread) holds and supports the emulsion (butter), the active part of the film.

As butter gives your bread flavor, emulsion gives your film an image-recording ability. Emulsion is a gelatin made of millions of light-sensitive silver halide crystals. When you open your camera shutter and light strikes these crystals, a reaction takes place — preserving on film the image of what the camera has seen.

But you can't see that image—yet. In fact, if you could examine the emulsion before and after exposure to light, you would see no difference. Although the image is there, it's latent. It has to be processed before it becomes a picture that you can see.

Negative and reversal films—How are they different? How are they similar? Negative color film — like black-and-white — is used to print the finished picture on photographic paper. When you send in negative color film for processing, color prints are returned.

With reversal film it is possible to make a full-color, transparent image on your original film — slides and movies.

Reversal films contain three separate color pictures in three layers on one base. After processing, the top layer has positive yellow image of everything in your picture that is yellow or nears yellow in its finished color. The middle layer is a magenta (purple-red) image, and the bottom is cyan (blue-green). The three layers, when viewed together, form a complete color transparency with infinitely varied and delicate shades.

As for negative film, the top emulsion layer is sensitive to blue light. Beneath this layer is a filter coating which stops the blue light from penetrating deeper. Lower layers are green sensitive and red sensitive.

A color negative will be dark where the subject was light, just like a black-and-white negative. Moreover, a negative's color will be opposite that of the subject. For example, if the subject is red the negative will be greenish-blue.

Some of these relationships are difficult to see behind the characteristic dull-orange tint that covers color negatives. But the image from the color negative is printed on the color photographic paper.

D. How does film work?

Light . . . reflected off a subject . . . passes through a lens . . . onto film.

Snap! The shutter opened and closed for only a fraction of a second. But that was enough time for light to burst through and strike the emulsion. The silver halide crystals that were struck by light have been rearranged.

Later, when the film is placed in a developer solution, (a solution used to turn the latent image into a visible image on exposed films or photographic papers) the light-struck silver halide crystals react chemically with the developer to form black grains of silver which remain in the film.

After the developer is removed and the film rinsed, a chemical fixer is added. The fixer removes the crystals which were not exposed to light. What is left of your original film is now called a developed negative.

A negative is a reverse image of the picture you took. The blackest areas show where the densest concentration of black silver grains are — where the greatest amount of light struck the emulsion. The lightest parts of the negative — where there is little or no black silver at all — show where the scene had been darkest and had reflected no light onto the emulsion. All other areas are in shades of gray, varying in proportion to the brightness of each subject in the scene.

But you can't enjoy a negative. You need a positive image. To get it, we pass light through the negative and onto photographic paper. This is a special paper coated with light-sensitive silver compounds — just like film. And the exposure of your negative upon photographic paper is called printing.

The printed paper is put through its own developer, rinse bath, and fix and at last, you have your snapshot.

Color film has several layers, each emulsion recording a different color. Between the emulsions are protective interlayers and all of these layers together aren't as thick as a human hair. Delicate handling is needed to process it properly.

III. LESSON 2

A. Camera Handling

1. **Hold the camera steady.**
2. **Using your camera viewfinder** (You look through the viewfinder to see the subject area that will be in your picture.)

If your camera has a luminous-frame viewfinder (a luminous line inside the finder that outlines the picture area), simply hold the camera so that when you look through the viewfinder you can see all four sides of the luminous frame.

If your camera has a conventional viewfinder (with no luminous frame), begin by holding the camera several inches in front of your eye with your eye centered on the viewfinder. While you're looking through the finder, slowly bring the rear opening closer to your eye until you are just able to see all four edges of the front finder frame (this usually happens when your eye is about $\frac{3}{4}$ inch from the rear opening).

a. Eye Position Relative To Viewfinder

- Correct eye position — Picture is framed properly.
- Eye too close — You get less than you saw.
- Eye too far — You get more than you saw. Main subject too small.
- Eye is to one side of center — Subject is to one side in picture, perhaps cut off.

3. Focusing

- a. Fixed-focus cameras
- b. Adjustable-focus cameras

When you focus your camera you adjust it for the proper camera-to-subject distance (some have set scale and some have a rangefinder).

There are two main types of rangefinders — split-image and super-imposed-image. With both types, you look at your subject through the viewfinder and turn the focusing ring until the two images in the viewfinder line up.

Some cameras have another system of focusing called "ground-glass focusing." With such cameras, you turn the focusing ring until the subject looks sharp in the viewfinder.

4. Loading (You may want to see "How to load a 35mm Camera")

Proper exposure under different outdoor lighting conditions (simple cameras have already been set but adjustable ones you change the shutter-speed — lower if picture is too light or higher if picture is too dark).

B. Basic tips from Kodak for good pictures

1. Keep your camera steady. Gently squeeze the shutter release.
2. Take close-ups of your subjects when possible.
3. Keep it simple. Have one center of interest and avoid cluttered backgrounds.
4. Keep subjects busy.
5. Include a foreground subject when shooting distant scenes.

Assignment

1. Ask students to take pictures of any subject matter that appeals to them. They should concentrate on proper exposure (depending on camera), correct focusing and holding the camera steady.
2. Ask the students to have their film processed and pictures ready for evaluation at next meeting.

IV. LESSON 3

Evaluate the Assigned Pictures from Last Meeting

A. Flash pictures indoors

1. Exposure

- a. Pictures too light — too close to subject with your camera.
- b. Pictures too dark — too far from subject.
- c. Glare spots — Shiny surfaces such as window, mirrors, eyeglasses and even shiny woodwork will reflect the flash and cause glare spots in your pictures. To avoid flash reflections, stand at an angle to the shiny surface when you take the picture instead of trying to take it head on.
- d. Reflections in the eye — Red or amber spots in pupils of subjects' eyes are caused by reflections of the flash in the eyes. In black-and-white pictures, the reflections in eyes look white. Minimize this effect by using a flash extender. Another way to minimize the effect is to turn on all the room lights, causing the subjects' pupils to contract. This reduces the intensity of the reflected light that causes eye reflections in pictures because less light is let into and out of the eyes.
- e. Uneven exposure in flash pictures — Since flash exposure depends on flash-to-subject distance, subjects at different distances in group photos will appear lighter or darker depending on how far away they are from the flash. The people close to the flash receive too much light, and those too far away receive too little light. You will get more even exposure if all subjects that appear in the picture are about the same distance from the flash. Having the subjects closer together also makes the picture more interesting.
- f. Guide numbers — Determine f-number for average subjects by dividing guide number for reflector and flashbulb by distance in feet from flash to subject. If pictures are consistently too dark, increase exposure by using lower guide number; if it is too light, reduce exposure by using higher guide number.

2. Successful flash operation

- a. Clean battery contacts
- b. Clean equipment contacts
- c. Make sure there is firm contact between battery and contacts.
- d. Attach the flash holder correctly
- e. Use recommended batteries for your equipment
- f. Do not use weak batteries
- g. Make sure that the batteries are properly installed
- h. When you take flash pictures with cameras that have adjustable shutter speeds, use the speed recommended by the manual

3. Flash Failure

- a. Cameras that accept magicubes or flipflash
 - Faulty magicube or flipflash.
 - Camera flash mechanism in need of repair.
- b. Cameras that accept flashcubes or flashbulbs
 - Faulty flashcube or flashbulb.
 - Battery contacts need cleaning. Clean the contacts on the batteries and in the battery compartments by rubbing them with a rough cloth or a pencil eraser.
 - Weak or dead batteries. Check batteries periodically and replace when necessary.
Camera flash mechanism in need of repair.

B. Composition

Photographic composition is simply the selection and arrangement of subjects within the picture area.

1. Have one strong center of interest, and place the subject slightly off center for the most pleasing composition.
2. Divide your picture area into thirds, both vertically and horizontally. Place your center of interest at one of the four places where the lines intersect. Have the subject look or move toward the center of the picture.
3. Look at your subject from several angles and then select the best one. Move in close to fill your picture area with the subject.
4. Place the horizontal line high or low in your picture, and check to make sure the horizontal is straight before you squeeze the shutter release.
5. Select a camera angle that will show an interesting line, such as a road, path, fence or river. For example, the repetition of figures in a line adds interest and unity to this type picture.
6. Watch the background in your picture; busy backgrounds can steal attention from your subject.
7. Add a natural frame to your scenics by including a foreground object such as a tree or an overhanging branch.
8. You can often improve the composition of a picture by cropping.

C. Lighting — front, side and back

1. Frontlighting — light shining on the subject from the direction of the camera
2. Sidelighting — light striking the subject from the side relative to the position of the camera; produces shadows and highlights to create modeling on the subject.
3. Backlighting — light shining on the subject from the direction opposite the camera, distinguished from frontlighting and sidelighting.

Assignment — Take at least four (preferably more) pictures indoors with flash. There should be at least one example of good composition and one each of front-lighting and sidelighting. Have film developed.

V. LESSON 4

A. How to plan a photo report

1. **Select your topic.** Your report can be on any subject, but select one clearly defined topic.
2. **Organize your material.** It's time to arrange the facts you have collected and determine the type and number of photographs you will need to convey your message. Begin by sorting your index cards according to subject. Arrange the cards in a logical or chronological order. While establishing a sequence, think about the photographs you will need. Decide which elements of your story should be illustrated. Indicate on a separate index card what each photograph will include.
3. **Plan your photographs.** Planning your photos before you begin taking pictures will save you time, money and frustration. Use index or file cards just as you did for the research — one card for each photo. Make a rough sketch on each card to show what that picture should include. Next to the sketch, write all pertinent data — message of the picture, location, camera-to-subject distance, number of people in the photo and any necessary props. Each card will be a blueprint that takes the guesswork out of picture-taking.

B. How to illustrate term papers and reports with photographs

1. **The finished book.** Your report should state the goals of your project, preferably in the opening paragraphs; be neat and clean; type all copy and captions if possible; be a standard size (for example, 8½ x 11 inches); be complete but concise; include photographs that demonstrate what you want to explain help to tell your story.
2. **How to use photos.** Photographs should be a vital part of your report. They can show progress and results; accurately illustrate activities that would be difficult to describe with words alone; and make your report attractive, exciting and inviting to read.

- Prints are best.
- Color pictures are generally more effective or in combination with black and white.
- Use pictures to convey as much of your message as possible.
- When showing a sequence, use all color or all black-and-white.
- You can use a general-purpose white glue to mount your pictures.
- Type captions indicating locations, dates, names and other pertinent data.
- Sometimes a montage of pictures can tell your story effectively.

3. Assembling Your Report

- Make an outline of the report.
- Select the prints you want to use.
- Type the written part of your report. Leave room for pictures and captions.
- Attach prints with a general-purpose white glue.
- Type the captions and attach them next to the photographs.
- Number all the pages in your report.
- You may want several copies of your report so that many people can review it at the same time.

Assignment

Ask each student to make at least one photo report (a simple picture sequence) of four or more pictures (color or black-and-white film). The report should include captions if they help tell the story. Students should have their film processed and pictures ready for evaluation at next meeting.

VI. LESSON 5

A. Brief description of the variety of films that are available and how they can be used.

Three kinds of color films for still cameras are available. One kind produces color negatives which are used to make color prints; another kind produces color slides, and the third kind of film, for use in instant cameras, produces instant color prints.

Use black-and-white film for general picture taking.

B. Depth of field

The distance range within which objects in a picture look sharp is called depth of field. From a practical point of view, depth of field varies with the size of the lens opening, the distance of the subject focused upon and the focal length of the lens. Depth of field becomes greater as

1. the size of the lens opening decreases
2. the subject distance increases
3. the focal length of the lens decreases (and subject distance remains unchanged).

C. Assignment

Ask each student to make another photo report (picture sequence) of four or more pictures. These pictures should illustrate the various principles of good picture-taking that the students have learned throughout the course. Students should have their film developed before next meeting.

Section II

BASIC PRINCIPLES OF EXISTING LIGHT 35 MM PHOTOGRAPHY

This is a course designed to familiarize students with the basics and operation of 35 mm cameras. Students will also be taught elementary darkroom techniques.

I. Objectives

- A. To acquire a basic understanding of photographic terminology
- B. To present students with a variety of films and their usage in order that they might realize the options open in film selection
- C. To provide experiences in developing and enlarging photographs in a basic and inexpensive darkroom set up by students

II. Materials

- A. 35 mm cameras (Be sure to have on hand a camera manual that has a diagram of the parts of the camera.)
- B. Various film samples
- C. Darkroom equipment and photographic supplies as specified in the sections on developing and enlarging photographs

III. Activities

A. Learning about your camera and films

1. Background light — an illumination thrown on the background to lighten it giving the scene depth, separating the subject from the background.
2. Depth of field — the distance within a scene from the closest point in focus to the farthest.
3. ASA — a number assigned to a film by the manufacturer which indicates the relative emulsion speed of the film for determining camera setting.
4. F-stop — the lens opening setting selected from a series of numbers consisting partially of 2, 2.8, 4, 5.6, 8, 11, 16, 22.
5. Focal frame — a camera attachment that overcomes the parallax problem and permits accurate framing and focusing of objects very close to the lens.
6. Focal length — a classification for lenses, being the distance from the center of the lens to the film plane within the camera when the lens is focused at infinity.
7. High angle shot — a scene photographed with a camera placed high, looking down at the subject.
8. Lens opening — the opening through which light enters the camera; its size is controlled by an adjustable diaphragm (f stops).
9. Photographic light meter — a device for measuring light levels, either incident upon or reflected from a scene.
10. Reflected-light method — the measurement of light reflected from a scene by the use of a reflected light meter held near the camera and aimed at the subject.

11. Shutter speed — the speed at which the shutter blades of the camera open and close, measured in fractions of a second.
12. Single-lens reflex camera — a compact camera employing a mirror and prism for accurate viewing directly through the camera lens.
13. Stop-bath — a chemical solution which stops the action of the developer on exposed film.
14. Telephoto lens — a camera lens which permits a closer view of a subject than would be obtained by a normal lens from the same position.
15. Wide-angle lens — permits a wider view of subject and surroundings than a normal lens.
16. Zoom lens — lens of variable focal length which permits a smooth change of subject coverage between distance and close up without changing the camera position.

B. Color Films

1. Kodacolor 400: High speed color print film. ASA 400.
2. Kodacolor II: Color film for prints. ASA 100. For use with daylight, blue flash or electronic flash.
3. Kodachrome 25: Daylight color slide film. ASA 25.
4. Kodachrome 64. Daylight color slide film. Lets you use higher shutter speeds or smaller lens openings under normal lighting conditions. ASA 64.
5. Ektachrome 64. Professional color slide film. ASA 64.
6. Ektachrome 200: "Fast" daylight color slide film. ASA 200.
7. Ektachrome 60: Professional color slide film. For use with 3200 K tungsten lamp or existing tungsten light. ASA 160.
8. Ektachrome 400: Very fast daylight color slide film. For use in extreme low light conditions. ASA 400.

C. Black and White Films

1. Kodak Verichrome Pan Films. ASA 125. Extremely fine grain, excellent general purpose film for prints (not for 35 mm cameras).
2. Panatomic X. ASA 32. Excellent definition characteristics, designed for making prints with a very high degree of enlargement.
3. Plus X Pan Film: ASA 125. Moderate speed, very fine grain film.
4. Tri X Pan Film: ASA 400. High speed, very good definition, good for fast action shots/dim lighting.

D. Tips for existing light photography

1. Take pictures by existing light for natural expressions and realism.

2. Use a camera with a fast lens, $f/1.8$, or faster and a high speed film for hand-held pictures.
3. If your camera has a slow lens, use a tripod to make time exposures.
4. For color pictures, use daylight color film with daylight or fluorescent illumination; use tungsten film for tungsten illumination. For color pictures outdoors at night you can use either type of film.
5. Outdoor lighting on overcast days is very flattering for pictures of people.
6. Indoors, open all the window drapes in the room for existing daylight pictures. For pictures at night, turn on all the lights.
7. Photograph your subject so that window light or household lamps are lighting the side or front of his or her face. Try to avoid photographing your subject with back lighting.
8. Select camera angles that show a minimum of shadows on your subject.
9. Use a reflector or bounce lighting to lighten deep shadows and reduce lighting contrast.
10. You can take pictures of your television screen. With leaf shutters, use a speed of $1/30$ second or slower; with focal plane shutter, use a shutter speed of $1/8$ second or slower.
11. Take a flashlight along to make camera adjustments in low lighting.
12. To help stop action in sports photography, use a very high speed film and the highest shutter speed that the lighting conditions permit. Then snap the picture at the peak of the action. Panning with the subject also helps stop subject motion in pictures.
13. Focus accurately, because depth of field is small at the large lens opening you will use. You can gain more depth of field by using a smaller lens opening and a slower shutter speed when the picture-taking situation permits.
14. Use a camera support for shutter speeds slower than $1/30$ second.

E. Developing black and white film.

1. Equipment needs

- a. A developing tank designed to take your film size
- b. Darkroom thermometer
- c. Kitchen measuring cup
- d. Film clips or spring type clothes pins
- e. Two quart containers
- f. A darkroom timer or clock with a sweep second hand
- g. Chemicals: Kodak Microdol-X developer or Tri-X developer, Kodak Fixer or KodaFix Solution.
- h. Sink with running hot and cold water
- i. Viscose sponge

2. Developing Procedure

- a. Mix the developer according to the instructions packaged with it. Bring the temperature of the developer to 68° F and store in large jar.
- b. Mix the fixer according to the directions. Bring to 68° F and pour it into a separate jar.
- c. Take your tank, your film and yourself into the darkroom. Close the door and turn off the lights.
- d. In total darkness, rip the exposed sticker from the roll of film. Use a bottle opener to open 35mm magazines. Hold a 126 or 110 cartridge so that the label faces you; place your thumbs on the label and bend the chambers back against your thumbs to open cartridge. Minimize the possibility of scratching 110 film by pulling film and paper in a direction that rubs the paper against the inner surface of the cartridge back.
- e. Load film into developing tank. With a Kodacraft tank, slide the end of the film into the notch made by the loop of the apron. Although you can't fit 110 film into the apron of a Kodacraft tank, you may use the 110 reel. Roll the film into the apron, guiding the edges with your fingertips. Detach the end from the backing paper. Put top on tank and turn on light.
- f. Set timer for developing time listed on film information sheet. Pour developer into tank and start timer.
- g. Agitate the tank gently about five seconds every 30 seconds. Agitation should include inverting the tank and turning it right side up again. At the end of the developing time, pour the developer back into quart container.
- h. Pour in a water bath at 68° F through the opening in the top of the tank. Agitate for 30 seconds and pour out.
- i. Set timer for proper fixing time, pour in the fixer solution and agitate as before. At the end of the fixing time, pour the solution into its container.
- j. Remove the tank cover and weight. Place the tank under running 68° F water and let the film wash for about ½ hour. After washing take film off apron and rinse both apron and tank.
- k. Hang up the film with a film clip or clothspin at each end. Wipe both sides of the film with a viscose sponge to remove large droplets of water. Let film dry.

F. Enlarging the film

1. Equipment needs

- a. Enlarger
- b. Safelight
- c. 8x10 paper: Kodak Kodabromide II RC, grade 2 or Polycontrast Rapid II RC
- d. 1602 graduated container
- e. An easel to hold the paper
- f. Four 8x10 trays
- g. Kodak Automatic Try Siphon or other washing device
- h. Chemicals such as Kodak Tri-Chem packs
- i. A photo blotter such as the Kodak Photo Blotter Roll
- j. Camel's hair brush
- k. Sink with running water
- l. Darkroom timer or clock with sweep second hand and luminus dial
- m. Darkroom thermometer

2. Enlarging Procedure

- a. Mix chemicals according to the instructions packaged with them. Bring them to 68° F.
- b. Put eight ounces each of developer, stop bath and fixer into three separate trays, just as you did for the contact printing.
- c. The fourth tray is for washing prints and goes to the right of the fixer. Slip the siphon over one edge so that its exhaust spout hangs over the sink. Connect the hose to the faucet and adjust the water to give a steady flow at 68° F.
- d. Holding the negative gently by its edges, dust it on both sides with the camel's hair brush. Select the correct negative carrier and place your negative in it so that its emulsion side (the dull one) is down. Slide the carrier into the enlarger.
- e. Slide a piece of 8x10 white paper beneath the guides of the enlarger easel for a focusing aid; turn the safelight on and the room lights off. Wait a minute for your eyes to adjust.
- f. Set the enlarger lens at its largest opening, turn the enlarger on and adjust its height so that the whole negative image appears within the guides.
- g. By adjusting the enlarger lens focus control, bring your picture into the sharpest possible focus. Once this is done, change the lens setting to f/8 and turn the enlarger off. Cut a two-inch wide strip of enlarging paper and place it on the easel, shiny side up.
- h. Cover all but about a sixth of this test strip with a piece of cardboard and turn on the enlarger for five seconds. At the end of five seconds turn off enlarger and move the cardboard to reveal more of the paper. Turn on the enlarger again for another five seconds. Follow this procedure until you have uncovered and exposed the whole test strip.
- i. Process the test strip for one minute in the developer, five to 10 seconds in the stop bath and two minutes in the fixer. Now turn the room lights on.
- j. From the strip, choose the exposure time giving the most pleasing result. Turn out the room lights and put into the easel, shiny side up, a whole sheet of photographic paper.
- k. Expose the paper for the selected time and process it as you did the test strip, but with a five to 10 minute fixing time. Lights can go on after a minute or two. Wash the enlargement for 15 minutes in running water at 68° F.
- l. Dry the print in your blotter roll, with the picture side toward the linen surface. If the picture isn't completely flat, moisten its back, place it between white blotters and put it in under a book for two to three hours.

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I. Suggested Sequence of Lessons

- (A) Photograms or Sun Pictures (directions in "How to Turn Your Kid on to Photography," Project 1).

- (B) Contact Prints or Positive Image (directions in "How to Turn Your Kid on to Photography, Project 1" and "Pinhole Photography by Dot Forthing).

Materials needed - clear plastic or glass, wood or heavy cardboard, developer, fixer, stop bath.

- (C) Use pinhole camera to take pictures outdoors. Have students record weather conditions, exposure time, results and proposed solutions to any problems in chart form.

- (D) Introduce film photography.

Materials needed - "Snapshot Camera Handling"—62 color slides, script, narration tape, 20 min. Mechanical aspects of handling simple camera by Kodak. "Photography—How it Works," 10½ min., color; Animated introduction to basic principles of photography, film (Kodak); cameras, exposed film, blindfold, "Pocket Guide to Good Pictures," a booklet from Kodak.

Practice loading developing tank blindfolded using an unexposed roll of film. Go over "Kodak Pocket Guide to Good Pictures." Have students take home cameras, take pictures and bring camera and film to next class meeting.

- (E) Process black-and-white film.

Materials needed - "Processing Black-and-White Film," 60 color slides, script and narration tape, 19 min. Beginners' lesson on film processing; developing tank, darkroom thermometer, graduate or kitchen measuring cup, film clips or spring-type clothes pins, a timer, chemicals—Kodak Microdol-X Developer, Kodak Indicator Stop Bath and Kodak Fixer or Kodafix Solution.

Go over chart for developing black-and-white film included in each package of film.

Develop film as time permits.

- (F) Enlarging

Materials needed - "Let's Make an Enlargement," 49 color slides, script and narration tape, 25 min. Basics of making black-and-white enlargements; enlarger, developer, stop bath, fixer, dryer.

See slides as an introduction.

Enlarge negatives.

Practice exposure controls (see Kodak booklet, "Enlarging").

Use negative already prepared to enlarge and compare prints.

II. Additional Activities

- (A) Photo Greeting Cards (for introduction, see "Photo Greeting Cards are for Keeps," 62 color slides, script and narration tape, 25 min., available from Kodak).

- (B) Your Eyes Can Fool Your Brain—activities chart introducing many projects on trick photography; Learning Magazine, April, 1977.

- (C) Illustrate an original story with pictures.

- (D) Photographic bookplates (Kodak Booklet—"Basic Developing, Printing, Enlarging," page 27).

- (E) Photo cutouts (Kodak booklet—"Basic Developing, Printing, Enlarging," page 27).
- (F) Make black-and-white transparencies (Kodak booklet mentioned in #E).
- (G) Illustrate constructive community, improvement programs in the areas of beautification, conservation and pollution.
- (H) Use photography to illustrate a science project.
- (I) Add color to black-and-white prints (see Additional Information).
- (J) Printing with blueprint paper (see Additional Information).

REFERENCES

- Adventures in Existing Light Photography* — published by Eastman-Kodak Co.
Basic Developing, Printing and Enlarging — published by Eastman-Kodak Co.
Kodak Films for the Amateur — published by Eastman-Kodak Co.
Kemp, Jerrold E. *Planning and Producing Audiovisual Materials*. San Francisco: Chandler Publishing Co.

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SECTION III

BASIC CAMERA PARTS

Draw a simple box on the board and add the following parts explaining the purpose of each. Have the students draw their camera while you are adding each part.

1. Viewing system — shows the scene the picture will cover; usually through a lens (sometimes it is just a gun sight).
2. The film — receives the image of the object being photographed and records the image on its light sensitive surface.
3. The film advance — winds the film from one spool to another. It protects film from all light except that which enters through the lens.
4. Diaphragm or aperture — a light control device usually made of overlapping metal leaves (forms an adjustable hole to let light in).
5. Shutter — the second light control — a moveable protection shield that opens and closes for a preset time to allow a measured amount of light to strike the film.
6. The lens — focuses light rays from a subject and creates a reverse upside down image on the film at the back of the camera.
7. The focusing control — moves the lens back and forth to create a sharp image on the film.

FOUR BASIC TYPES OF CAMERAS

Draw each of the following camera types on the board explaining the parts as you draw. Ask students to make their own drawings as you make yours. After completing all four types, erase the board and let students draw each type without any assistance. (Students may volunteer to draw them on the board.)

1. Viewfinder — the light travels from the subject through a viewfinder to the eye and through another lens to the film. (The difference in what the viewfinder sees and what the film records is called parrallax.)
2. Single lens reflex (SLR) — The key to a SLR is the moveable mirror. The light comes through the lens and is reflected upward to a viewing screen and then through a five-sided prism that corrects the image left to right and top to bottom. When the picture is taken the mirror flips out of the way and light strikes the film. There is no parallax error with an SLR. You get a picture of exactly what you see.
3. Twin lens reflex camera — The TWR has separate viewing and picture taking systems. It has twin lenses — one lens is used for viewing and the other lens is used to record the picture. A mirror on the upper lens reflects the image upward for viewing.
4. View Camera — Light comes directly through the lens to a viewing screen at the back of the camera. Film is inserted behind the screen after the picture is composed.

BASIC DARKROOM PROCEDURES

To get a photo once you have exposed the film involves two basic procedures — developing film to produce negatives and printing the negatives onto photo paper.

1. Developing the negative — (the negative image)
 1. Remove the film from the spool (in the dark).
 2. Place film in developer (use a separate reel) and leave it there a certain time.
 3. At the appropriate time place the film in a stop bath — this stops the development.
 4. Next, place film in a fixer, this fixes the film so it is no longer sensitive to light.
 5. Wash the film and allow it to dry.

II. Developing the print (the positive image).

The important ingredient in making a print is the enlarger. The enlarger is a camera in reverse — it projects light through the negative onto a piece of light-sensitive paper.

Once the paper is exposed it is then processed in a manner similar to a negative.

1. Place the paper into print developer (leave there until image reaches the proper state).
2. Place the paper into the stop bath to keep print from developing any further.
3. Place the paper into a fixer so that it will no longer be light sensitive.
4. Wash and dry the print.

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The Development of Photography

Discussion Guide

It took the work of many scientists a period of many centuries to develop even the simplest form of what we think of today as a camera.

The very first camera was a natural camera which produced an image on the ground in the forest. This image was actually a photograph of the sun and produced little circles duplicating the sun's round shape. It was not simply light shining through round holes shaped by the leaves.

The first man-made camera was developed as early as the third century B.C. when Aristotle described the principle of the *camera obscura*. If a small hole was pierced in the side of a huge black box, an upside-down picture was projected by daylight inside the box. This *camera obscura* (Latin for room dark) started out as a giant room holding several people and was later reduced to a very small portable size.

Artists began using the *camera obscura* to trace silhouettes out and sell them. Less skilled artists could produce very good likenesses using this method. Draw an illustration of a *camera obscura* on the board and explain how it works.

The problem that faced these early photographic pioneers was how to hold on to the fleeting image in the *camera obscura*. This was only achieved after a series of isolated discoveries over a period of several hundred years. Some of the most significant of these are listed below.

1. Many chemists knew that the sun would fade many dyes, but they regarded this as an annoyance.
2. In 1725 J. H. Schulze, a German chemist, discovered that light makes its own prints. One day he left a bottle containing silver nitrate particles near a window. He noticed that the part facing the sun turned dark while the other side remained the same. He then placed the bottle near heat and found that no other change took place in the absence of light. He then knew that it was light and not heat that accounted for this change.
3. Scientists also knew that different surfaces reflected light in varying degrees. To demonstrate this, hold your hand up with palms down and observe the area underneath. Next place a white sheet of paper below your hand and note the difference. You may also hold colored papers under your hand and note the changes and the degrees of reflectability.
4. Reflections from subjects when coming into contact with a piece of light-sensitive paper treated with silver salts "burn" images onto the paper depending on the reflective qualities of the subject. Thus, white hair would reflect better than brown hair and so on with other surfaces. By capturing these differences an image was formed, even though it was a negative image.
5. The first man to make commercially successful pictures was Jacques Dagerre. He made his pictures onto sensitized metal, either silver or copper. Each photograph produced a single copy. Even though this was very expensive and couldn't be duplicated, it became very popular to have a daguerreotype.
6. Eventually, the first true negative was made in which limitless reproductions could be made. This was a piece of plastic which was coated with a weak solution of silver salts. By later projecting a light through this negative onto a piece of light-sensitive paper, innumerable prints could be made.
7. The camera itself developed along with film. The very first cameras took several minutes to take one picture and people were clamped into position so they couldn't move and blur the picture. Today's cameras can take pictures as rapidly as one-half thousandth of a second and special cameras can stop a bullet in flight.

Ideas for Projects

1. All the things that make me hungry (a collection of pictures)
2. A family vacation
3. Adventures with a polaroid
4. How to make a great sandwich (a photographic step by step guide)
5. Surprise! (A collection of people I caught by surprise with my camera)
6. A photographic comic strip

Materials Needed for a Pinhole Camera

- 1 cartridge of film - size 126 (use either Tri-X Pan or Kodacolor II Film)
- 1 piece of **thin** black cardboard $1\frac{1}{4}'' \times 5\frac{3}{4}''$ (it could be painted black).
- 1 piece of rigid black cardboard $1\frac{1}{2}'' \times 2\frac{3}{4}''$ (cut a $\frac{1}{2}''$ hold in center of this piece of cardboard)
- 1 piece of heavy aluminum foil $1''$ square
- 1 piece of dark paper (brown, black or blue) $1''$ square
- 2 strong rubber bands
- A nickle or dime (or a popsicle stick)

The pinhold cameras will be put together in the last class — please have all your materials together and cut to the above sizes.

Don't panic if you don't have any black cardboard — paint it if you can — if you can't, regular cardboard will do fine.

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Suggested Photography Test

- | | |
|-------------------------|---|
| _____ 1. viewing system | A. records the subject |
| _____ 2. film | B. shows the subject |
| _____ 3. film advance | C. focuses the subject |
| _____ 4. camera body | D. moves film to another position |
| _____ 5. diaphragm | E. controls light by speed |
| _____ 6. shutter | F. world famous photographic instructor |
| _____ 7. lens | G. holds together all parts of the camera |
| _____ 8. Mr. Yarbrough | H. aperture |
| _____ 9. tank | I. keeps light from film while developing |
| _____ 10. reel | J. holds film for developing |
| | K. none of the above |

Short Answers

1. What is the most basic element in all photography?
2. What is the difference between a modern camera and a camera obscura?
3. Explain the difference between a shutter and an aperture.

Discussion (use other sheets of paper if necessary)

1. List the four types of cameras and explain how each type works. Use an illustration.
2. Choose any two types of cameras and tell how they are different.
3. Describe the process of developing film. Make sure you include both film and paper.
4. Draw a camera and label all the parts.

Photography Evaluation

Excellent Good Fair Poor

Participation

Classroom preparation

Classroom behavior

Pinhole camera

Project

Comments

Target Teacher

Student's Signature

Date

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EMOTIONS AND CREATIVITY

A mini-course designed to promote the expression of emotions through creative activities.

Nancy Johnson
Lowndes County School System

Mini-course Title: EMOTIONS AND CREATIVITY

Target Groups: Primary grades

I. Student Objectives

- A. To perfect an emotion into creative expression
- B. To form inferences and conclusions with various stimuli

II. Thought Processes to be Developed

- A. Creative thinking
- B. Drawing inferences
- C. Drawing conclusions

III. Instructional Materials

Pictures from magazines showing facial expressions, body activity (e.g. running, hopping, etc.) and scenes

- Highlights *Creative Thinking Transparencies*. Highlights for Children Inc., Columbus, Ohio.

IV. Content

- A. Vocabulary
- B. Pictures showing pronounced emotions
- C. Pictures that will aid in creating emotions

V. Activities and Strategies

- A. Have each student pick one picture which shows a person displaying a pronounced emotion and write a paragraph telling why this person feels the way he or she does.
- B. From "Highlights," show transparency *Emotions*. Have each student pick one section and tell what has happened.
- C. Take scenic pictures from magazines and discuss with the group the inferences to be made.
- D. From "Highlights," show transparency *What Do You Know From This Picture?* Follow the language activities suggested in Teachers' Guide.
- E. Have the children pick a fairy tale and modernize it.
- F. Give the students "What if . . ." situations.
Examples
 - a. What if the moon shot into space?
 - b. What if you lost one shoe on the way home from school?
- G. Have the students draw, write or orally express their feelings toward snakes, ice cream, Halloween and Christmas.

AMERICAN INDIAN ART AND CUSTOMS

An introductory look at the life styles of native Americans,
their arts, customs, homes and location.

Nancy Johnson
Lowndes County Schools

Mini-course Title: AMERICAN INDIAN ARTS AND CUSTOMS

Target Groups: Second grade

I. Student Objectives

A. Cognitive

The gifted student will research sub-topics to develop an awareness of the life styles of the early Indians of America.

B. Affective

The student will suggest solutions to various problems faced by the Indians and the reasons used or not used by them.

C. Psycho-Motor

Students will create models of home styles, sand art and Indian designs used for decorating.

II. Thought Processes to be Developed

A. Cognitive memory (research process)

B. Convergent thinking (deductive reasoning involved in the problem solving area)

C. Divergent thinking (large number of solutions to their problems or methods in creating the models)

III. Instructional Materials

A. Every library will probably have many books on American Indians. Public libraries may have more resources such as filmstrips and films. The books listed (with the exception of the *Arizona Highways*) come from a public school library.

Gorham, Michael. *The Real Book About Indians*. New York: Garden City Books, 1953.

Hofsinde, Robert. *Indian Costumes*. New York: William Morrow and Company, 1968.

Hunt, W. Ben. *Indian Crafts and Lore*. New York: Golden Press, 1964.

LaFarge, Oliver. *The American Indian*. New York: Golden Press, 1965.

Leavitt, Jerome. *America And Its Indians*. Chicago: Children's Press, 1961.

Martini, Teri. *Indians of North America - Social Life and Customs*. New York: G. P. Putnam's Sons.

McNeer, May. *The American Indian Story*. New York: Ariel Books, 1963.

Randall, Florence, et. al. *Highlights Handbook About American Indians*. Columbus, Ohio: Highlights For Children, 1963.

Scheele, William. *The Mound Builders*. New York: World Publishing Company, 1960.

White, Ann Terry. *The American Indian*. New York: Random House, 1963.

Arizona Highways

Jan. 1974 — vol. XLX, no. 1

Feb. 1974 — vol. X, no. 2

May, 1974 — vol. L, no. 5

July, 1974 — vol. L, no. 7

Aug. 1974 — vol. L, no. 8

March 1975 — vol. LI, no. 3

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May 1975 — vol. LI, no. 5
July 1975 — vol. LI, no. 7
Oct. 1975 — vol. LI, no. 10
Aug. 1976 — vol. LII, no. 8
July 1977 — vol. LIII, no. 7
Oct. 1977 — vol. LIII, no. 10

B. Art material needed

1. Fine white sand
2. Powdered tempera paint or food coloring (to color sand)
3. Modeling clay
4. Heavy cardboard for designs
5. Colored markers or crayons
6. Bark from pine trees
7. Boxes (or any material used in constructing dwellings and totem poles; may use sugar cubes.)

IV. Content

- A. Location of tribes in the United States
- B. Home styles
- C. Clothing and food
- D. Various art designs
- E. Customs

V. Questions to be Considered by the Students

- A. How did the location of the tribes in America affect the homes, clothing and methods of obtaining food?
- B. How were the homes constructed?
- C. How did their art designs or picture words convey a message?
- D. What were some of their unusual customs and where might the theory behind the custom have originated?

VI. Student Activities and Strategies

- A. Research and investigative reading of material.
- B. Map skills - Locate the five basic groups of Indians on individual maps, label and show terrain; e.g. Woodland, Southern, Prairie, Southwestern and Northwest coast.
- C. Display pictures of Indian clothing, art work and designs. Have students draw their own designs.
- D. Draw a picture of a teepee and have students draw a picture story on the cover. Have the student explain and display his drawing.
- E. Make a model of one or more of the Indian homes, e.g. longhouse, wigwam, teepee, pueblo and a totem pole.
- F. Make a sand art project. Work with sand and design formations.
- G. With modeling clay, make pottery or replicas of Indian life.
- H. Make a booklet with the information researched (maps and handouts included).
- I. Take a field trip to Ocmulgee Park or some Indian reservation.

VII. Evaluation

Areas of creative evaluation

- A. Models in clay
- B. Sand art project
- C. House models (include totem poles)
- D. Picture stories
- E. Field trip
- F. Booklet

The material gathered in research should show a trend toward an indepth awareness of the particular area studied. Their booklet should be indicative of their interests. A cover should be made for the booklet.

Discussions should be open-ended in solutions to problems faced by the Indians. The different climates, locations and food available should be compared with the various tribes. Conclusion drawn should be intelligent solutions after problems have been analyzed.

The field trip can be the conclusion to the project, followed by a lesson in writing to describe the trip.

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**DON'T COUNT YOUR CHICKENS
BEFORE THEY ARE HATCHED**

The purpose of this mini-course is to give students an opportunity to study the history, interpretation, purpose, characteristics, writing style and cause-effect relationships of proverbs and fables.

Sara Lynn Turner
Jan Stutts
Richmond County

Mini-course Title: DON'T COUNT YOUR CHICKENS BEFORE THEY ARE HATCHED

Target Group: Grades three and four

I. Student Objective

A. Cognitive

Students will

1. discuss the definition of the word "proverb" and the purpose of proverbs;
2. list as many proverbs as possible by using various sources;
3. interpret the meaning of selected proverbs;
4. discriminate between the literal and symbolic meanings of proverbs;
5. demonstrate an understanding of proverbs by selecting the proverb that is illustrated in a given situation;
6. determine the cause-effect relationship in selected proverbs;
7. discuss the purpose and characteristics of fables;
8. discover and explain the morals of fables presented in class;
9. analyze the necessary steps for creating a fable;
10. select a proverb that student will use as the moral of a fable and determine the symbolic meaning of the proverb;
11. think of many ways to illustrate selected proverb;
12. write a fable which illustrates the moral selected earlier;
13. draw illustrations to complement chosen fable;
14. evaluate by rating the purpose, characteristics, clarity and originality of chosen fable.

B. Affective

Students will

1. be aware of the presence of proverbs and fables in literature;
2. appreciate the entertainment provided by fables;
3. focus on an aspect of faith as they learn about beliefs which are important to others.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Analysis
- D. Interpretation
- E. Discrimination
- F. Synthesis
- G. Evaluation
- H. Valuing

III. Instructional Materials

Books

Self Expression and Conduct, The Humanities (Orange), Harcourt Brace Jovanovich, San Francisco: 1976, pp. 97-108.

Bracken, Dorothy Kendall. *Listening Improvement Series 789*. Lakeland, Florida: Educational Progress Corporation, 1970.

East Whittier City School District. "Creative Prescriptions Unlimited," *Creative Moments for Children*. Boston, Massachusetts: Houghton Mufflin Company, 1972.

(library books of fables)

Filmstrips

Aesop's Fables

Games

Selected by the teacher using this mini-course.

IV. Content

- A. Fables
- B. Proverbs
- C. Symbols as a way of conveying meanings
- D. Vocabulary building
 - 1. Symbol
 - 2. Symbolic
 - 3. Literal
 - 4. Proverb
 - 5. Characteristics
 - 6. Interpretation
 - 7. Illustrate
 - 8. Cause
 - 9. Effect
 - 10. Moral

V. Questions to be Considered by Students

- A. What is a proverb?
- B. When have you heard a proverb used? Why do you think the person used the proverb instead of saying something else?
- C. List as many proverbs as you can.
- D. What does literal mean? What is a symbol? What do you think symbolic means?
- E. What is a fable? Why do people make up fables? What characteristics have you noticed in the fables we have read or seen?

VI. Activities and Strategies

- A. Locating examples of proverbs.
- B. Discussing literal and symbolic interpretations of proverbs.
- C. Tell in your own words the literal meaning of this proverb.
- D. Interpret this proverb symbolically.
- E. After listening to the situation read, decide which proverb the situation illustrates best and give your reasons for that selection.
- F. Identify the cause and effect in this proverb, "all sunshine makes a desert."
- G. Listen carefully to the following fable, the moral will not be read. In your own words, tell what proverb is being illustrated.

- H. List in order the steps necessary for writing a fable. Why must these steps be in a certain order? What might happen if a step was omitted?
- I. Work brain teasers and puzzles related to the area being studied.
- J. Listen to stories to discover the moral.
- K. Role play fables.
- L. Listen to the situation and match the proverb being illustrated.
- M. Select a proverb.
- N. Write a fable.
- O. Illustrate the fable.
- P. Bind the fables to form a book.

VII. Evaluation

A. Student

Using the following criteria, rate your fable.

EVALUATE YOUR FABLE

Name _____

- | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-----|---|---|---|---|---|---|------|--|------|--|---|---|---|---|---|---|---|---|--|
| 1. How well did your fable express the idea you had in mind? | <table border="0"> <tr> <td style="text-align: left;">Low</td> <td colspan="8"></td> <td style="text-align: right;">High</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">1</td> <td style="border-top: 1px solid black;">2</td> <td style="border-top: 1px solid black;">3</td> <td style="border-top: 1px solid black;">4</td> <td style="border-top: 1px solid black;">5</td> <td style="border-top: 1px solid black;">6</td> <td style="border-top: 1px solid black;">7</td> <td style="border-top: 1px solid black;">8</td> <td></td> </tr> </table> | Low | | | | | | | | | High | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| Low | | | | | | | | | High | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | | | | | | | |
| 2. Review the characteristics of a fable. Evaluate your fable by comparing it to the criteria to see how closely it followed the guidelines. | <table border="0"> <tr> <td style="text-align: left;">Low</td> <td colspan="8"></td> <td style="text-align: right;">High</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">1</td> <td style="border-top: 1px solid black;">2</td> <td style="border-top: 1px solid black;">3</td> <td style="border-top: 1px solid black;">4</td> <td style="border-top: 1px solid black;">5</td> <td style="border-top: 1px solid black;">6</td> <td style="border-top: 1px solid black;">7</td> <td style="border-top: 1px solid black;">8</td> <td></td> </tr> </table> | Low | | | | | | | | | High | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| Low | | | | | | | | | High | | | | | | | | | | | | |
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| 4. Is your fable clearly written so others can read and understand your story? | <table border="0"> <tr> <td style="text-align: left;">Low</td> <td colspan="8"></td> <td style="text-align: right;">High</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">1</td> <td style="border-top: 1px solid black;">2</td> <td style="border-top: 1px solid black;">3</td> <td style="border-top: 1px solid black;">4</td> <td style="border-top: 1px solid black;">5</td> <td style="border-top: 1px solid black;">6</td> <td style="border-top: 1px solid black;">7</td> <td style="border-top: 1px solid black;">8</td> <td></td> </tr> </table> | Low | | | | | | | | | High | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
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| 5. Evaluate your work habits. | <table border="0"> <tr> <td style="text-align: left;">Low</td> <td colspan="8"></td> <td style="text-align: right;">High</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">1</td> <td style="border-top: 1px solid black;">2</td> <td style="border-top: 1px solid black;">3</td> <td style="border-top: 1px solid black;">4</td> <td style="border-top: 1px solid black;">5</td> <td style="border-top: 1px solid black;">6</td> <td style="border-top: 1px solid black;">7</td> <td style="border-top: 1px solid black;">8</td> <td></td> </tr> </table> | Low | | | | | | | | | High | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
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Comments

B. Teacher Evaluation of Course

1. Interest shown by students	$\frac{\text{Low}}{1}$	$\frac{\text{High}}{7}$
2. Degree of difficulty of activities	$\frac{\text{Low}}{1}$	$\frac{\text{High}}{7}$
3. Relevancy of content to everyday life	$\frac{\text{Low}}{1}$	$\frac{\text{High}}{7}$
4. Appreciation of literary work	$\frac{\text{Low}}{1}$	$\frac{\text{High}}{7}$
5. Ability of students to work independently	$\frac{\text{Low}}{1}$	$\frac{\text{High}}{7}$
6. Ability to interpret proverbs	$\frac{\text{Low}}{1}$	$\frac{\text{High}}{7}$
7. Ability to recognize characteristics	$\frac{\text{Low}}{1}$	$\frac{\text{High}}{7}$
8. Follow through in writing fable	$\frac{\text{Low}}{1}$	$\frac{\text{High}}{7}$

**THOSE MAGNIFICENT MEN
IN THEIR FLYING MACHINES**

A study of flying men, inventions, myths and scientific principles; an exercise in creating original paper planes.

Linda Moody
Polk School District

122

Mini-course Title: **THOSE MAGNIFICENT MEN IN THEIR FLYING MACHINES**

Target Group: Grades three, four and five

I. Student Objectives

A. Cognitive

Students will

1. compose a brief summary of how the two air principles studied contribute to flight;
2. briefly give the history of aviation;
3. match some names with what those persons did for aviation;
4. demonstrate ability to research, compile and graph results of flying contests;
5. exercise creative ability in designing maze puzzle, paper airplanes and a future flying machine.

B. Affective

Students will

1. gain a better understanding of the importance of flying to transportation;
2. gain a deeper appreciation for some of the types of hobby flying;
3. have the opportunity to enjoy one of the myths dealing with flying;
4. compete with others in paper airplane contests.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Evaluation
- E. Receiving
- F. Responding

III. Instructional Materials

- A. *Flying*, Sept. 1977 (this is the 50th anniversary issue, very helpful)
- B. Reference books for looking up the people and dates
- C. Library books on flying
 1. *From Kit to Kitty Hawk*
 2. *The Story of Flight*
 3. Douty, Ester H. *The Brave Balloonists: America's First Airmen*. Garrard Press, 1963.
 4. Davidson, Jesse. *Famous Firsts in Aviation*. Putnam Books, 1974.

IV. Content

- A. Overview of important men and women, dates and inventions in aviation.
- B. The myth — "Daedalus and Icarus"
- C. Airplane mechanics

V. Questions to be Considered by Students

- A. What might have led to the quest to fly?
- B. What were some of the methods tried in order to fly?
- C. How does an airplane stay up?
- D. How did early balloons work and what changes took place in ballooning?
- E. What might be the next step in aviation development?

- F. What are some ways that man's quest to fly is still evident (hang gliding, ballooning, parachuting, etc.)?

VI. Activities and Strategies

A. Student

1. Research one of the men or women important to the history of aviation.
2. Try various folds for paper planes and then have flying contests for distance, duration, height and acrobatics.
3. Record and graph results of races.
4. Using some fold for paper airplane, try several weights of paper (manilla, construction, newsprint, paper towel, notebook) to find best weight of paper for flying. Combine and chart results.
5. Design a maze for other students (after reading the myth).
6. Design a future flying machine (flying platform, air car, etc).

B. Teacher

1. Demonstrate effects of unequal air pressure (tin can) and force of air pushing in one direction forcing object to go in opposite direction (balloon).
2. Provide resource individuals.
3. Guide research into people and inventions of flight.
4. Give overview of history of aviation.
5. Guide students in their contests and compilation of results.
6. Possible extras — Demonstration by model airplane builder/flyer, trip to airport or talk by hang glider, balloonist or pilot.

VII. Evaluation

A. Course

1. Constructive criticism by students.

B. Student

1. Teacher observation of student behavior as compared to those stated in objectives.

ROCKS IN THE HEAD

This course is designed to acquaint students with rocks and minerals of their area, their uses and the fun of discovering and collecting rocks and gemstones.

Virginia Joiner
Meriwether County

Mini-course Title: **ROCKS IN THE HEAD**

Target Group: Grades three through five

I. Student Objectives

A. Cognitive

Students will

1. recognize minerals and gemstones by crystal structure, streak, Moh's scale, color and flame test.
2. name the eight elements comprising 99 percent of the earth's crust.
3. define rock, mineral, element and compound.

B. Affective

Students will

1. determine what sets the value of a mineral.
2. become aware of how minerals are used.
3. decide whether a collection will be pursued.

II. Thought Processes to be Developed

- A. Analyzing rocks and minerals.
- B. Creating an object of rocks or minerals and a story in which an important mineral no longer exists.

III. Instructional Materials

- A. Porcelain plate for streak tests
- B. Books available on rock and mineral identification from school library.
- C. Stream gravel (varies from location to location).

IV. Content (Topics to be Studied)

- A. Local minerals and rocks
- B. Identification of semi-precious and precious gemstones

V. Questions to be Considered by Students

- A. What determines how valuable a mineral may be?
- B. What happens if an important mineral is unavailable?
- C. How did the mineral composition of the immediate locale come to be?
- D. How did it affect the development of the local area?

VI. Activities and Strategies

A. Student

1. Collects rocks and minerals for identification.
2. Cleans and classifies rocks and minerals.
3. Makes an object - art object, jewelry, mobile, wall hanging, sculpture or paper-weight from a mineral or rock.

B. Teacher

1. Provide sand and gravel from locale in which gemstones are found.
2. Provide place to clean and pan material.
3. Provide rock tumbler for polishing semi-precious stones.
4. Plan field trip for collection.

VII. Evaluation

A. Course

1. Do students now desire to collect rocks, gemstones and minerals?
2. Do students now have knowledge of local minerals, rocks and how they affected the history of the area?

B. Student

1. Names eight most common minerals.
2. Identifies and labels minerals and rocks.
3. Creates an object using minerals or rocks.

ANIMALS IN DANGER

A mini-course designed to give students an opportunity to acquire a background of information concerning endangered animals, preservation of wildlife and factors which have contributed and still are contributing to the decline of specific animal species.

Evelyn Wood
Glynn County Schools

Mini-course Title: ANIMALS IN DANGER

Target Group: Grades three through five

I. Student Objectives

A. Cognitive

Students will

1. use problem-solving skills, research techniques, study skills and the assistance of resource persons in acquiring a wide background of information concerning endangered mammals, birds, fish, reptiles and amphibians;
2. examine the complexity of problems involved in preserving wildlife and be able to discuss the factors which have contributed to the decline of certain animal species as well as measures being taken to preserve and protect endangered species;
3. formulate, carry out and evaluate an independent or small group investigation which will express creatively the student's personal convictions about man's responsibility toward endangered species.

B. Affective

Students will

1. demonstrate a commitment to the protection of endangered species and a responsibility for informing others of their plight;
2. demonstrate an appreciation for the diversity and beauty of the world's wildlife;
3. demonstrate an appreciation for mankind's need to live in harmony with nature.

II. Thought Processes to be Developed

Each of the thinking processes in Bloom's Taxonomy of the Cognitive Domain will be developed during the study, but emphasis will be on the upper levels of analysis, synthesis and evaluation.

III. Instructional Materials

1. Laminated pictures of endangered and threatened species. Sources of excellent pictures are back issues of *National Wildlife*, *Audubon*, *Ranger Rick*, *National Geographic*, *Smithsonia*, *World*, and *Natural History*. Another excellent source may be in your possession or the possession of a teacher you know. In 1970 the Audubon Society sponsored a portfolio of pictures and information about endangered species called *Rare Animals To Protect and Preserve* published by *Scholastic Magazine*, 902 Sylvan Ave., Englewood Cliffs, NJ 07632. The portfolio contained beautiful pictures of sixteen animals, a map showing the natural habitat of each, information about each animal and a recording of animal sounds. Correspondence with Scholastic indicates that the portfolio is no longer in print. It might possibly be obtained from the Audubon Society.
2. McDonald's publishes an activity book on ecology. The concepts are presented in appealing ways and provide supplementary activities for the study of endangered animals. Clip the McDonald's coupon in any teacher's magazine. Cost is minimal.
3. Magazine articles, journal articles, television programs, recordings, films, filmstrips, tapes and reports from conversation groups.
4. Library books on wildlife, especially endangered wildlife.
5. Conservation Directory, U.S. Department of the Interior, Washington, D.C. 20240. Gives national, state and international listings of organizations, agencies and officials concerned with the use of natural resources and wildlife management. Free and inexpensive materials can be secured from these listings and contacts can be made for state and local resource persons.

6. Pamphlets, bulletins, newsletters and other free or inexpensive materials concerning endangered species can be obtained from the following sources:
- a. American Forestry Association
919 17th St., NW
Washington, D.C. 20006
 - b. Boy Scouts of America
National Council
New Brunswick, N.J. 08903
 - c. Camp Fire Girls, Inc.
65 Worth St.
New York, N.Y. 10013
 - d. The Conservation Education Association
1250 Connecticut Ave., NW
Washington, D.C. 20036
 - e. The Garden Clubs of America
Conservation and Roadside Committee
598 Madison Ave.
New York, N.Y. 10022
 - f. Girls Scouts of the U.S.A.
830 Third Ave.
New York, N.Y. 10022
 - g. The Izaak Walton League of America
1326 Waukegan Rd.
Glenview, Ill. 60025
 - h. National Audubon Society
1130 Fifth Ave.
New York, N.Y. 10028
 - i. National Education Association
1201 16th St., NW
Washington, D.C. 20036
 - j. Sport Fishing Institute
Suite 503
719 13th St., NW
Washington, D.C. 20005
 - k. Georgia Game and Fish Department
Atlanta, Georgia 30334
 - l. Georgia Department of Education
State Office Bldg.
Atlanta, Georgia 30334
 - m. U.S. Department of Agriculture
Washington, D.C. 20250
 - n. U.S. Department of Health, Education and Welfare
Office of Education
400 Maryland Ave., SW
Washington, D.C. 20202
 - o. U.S. Department of the Interior
Fish and Wildlife Service
Washington, D.C. 20240

IV. Content

- A. Animal life in general
- B. The environment and its interrelationships
- C. Ecology
- D. How man has changed the earth
- E. Food chains and food webs
- F. Wilderness areas
- G. Extinct animals, endangered animals and threatened animals
- H. Plant life in danger of extinction
- I. Local area animals in danger

V. Questions to be Considered by Students

1. How has man changed the earth? for good? for bad?
2. What is man's relationship to the environment?
3. Why should wildlife survive?
4. What is meant by extinct? threatened? endangered?
5. What is a food chain? food web?
6. What might happen if protective measures for animals are not established? If they are?
7. Where are endangered animals located? What are the reasons for the decline of animals? What protective measures are being taken, planned or suggested? What other ideas might work?
8. What animals from the local community are in danger?
9. How can I express my concern?

VI. Activities and Strategies

A. Student

1. Examine United States Department of Interior lists of extinct, endangered and threatened animals. See the April-May, 1974, and December-January, 1978, issues of *National Wildlife* magazine. Become familiar with the vocabulary associated with the problem area.
2. Locate on a world map the locations of endangered species.
3. Based on prior knowledge and logical reasoning, make some guesses about why animals are in danger.
4. Write letters or post cards to agencies and groups listed in the Materials section requesting information about endangered species.
5. Conduct research to find the following information.
 - a. Reasons for the decline of species
 - b. Protective measures being taken, planned or suggested
 - c. Local community animals in danger
 - d. Community groups interested in protecting endangered species
6. Visit local groups interested in animals or invite them to visit class. Interview a wide cross-section of the community to find out what people know about endangered animals and how they feel about them.
7. Prepare a bulletin board or hall display to share your concerns with the school.
8. Creative dramatics—act out the problems of endangered animals. Write a play documenting your concern. Consider using music. Present the play to an interested audience.

9. Express your concerns in a poem or short story or use other forms of creative expressions: painting, crafts, clay and wood modeling, construction of bird feeders and houses, terrariums, movie-making, slide presentation, music.
10. Adopt or sponsor an animal. Become a crusader for the protection of your animal. Prepare spots for broadcast on local radio stations or over school intercom.
11. Visit wilderness areas in your community and state (Fernbank, mountain areas, Okefenokee Swamp, Cumberland Island, etc.).
12. Develop an independent or small group investigation in one of the areas above or in some way interesting and meaningful to you. Express your concern for protecting endangered animals through your project.
13. Participate in the simulation game *Wildlife* which illustrates the interaction between the environment and certain living populations. (Use with fourth and fifth grade gifted students.) Play other related games, such as *Pollution*.

B. Teacher

1. Arrange for field trips to wilderness areas.
2. Contact resource persons and make arrangements for contact with the class. Try to contact all community groups concerned with the environment. Enlist the assistance of interested parents.
3. Provide as many resources as possible including human resources, printed materials, and audiovisual aids, field trips to locations related to the areas of study.
4. Assist students in formulating objectives for carrying out and evaluating group activities and individual investigations.
5. Encourage innovation, creativity, originality, creative thinking and interaction with members of the group and resource persons.
6. Maintain a learning atmosphere which has a balance between structured activities and a playful, free, accepting environment where creative ideas can be nurtured.
7. Assist students in finding suitable outlets for products which result from activities and investigations.

VII. Evaluation

A. Course

1. What effect did the course have in motivating the student to show knowledgeable concern about endangered species?
2. Did the course provide freedom for the student to pursue personal interests within the area of study?
3. Did the course have a positive influence on the student's study habits and thinking processes?
4. Were there challenging opportunities for the student to develop and carry out creative approaches and methods of self-expression?

B. Student

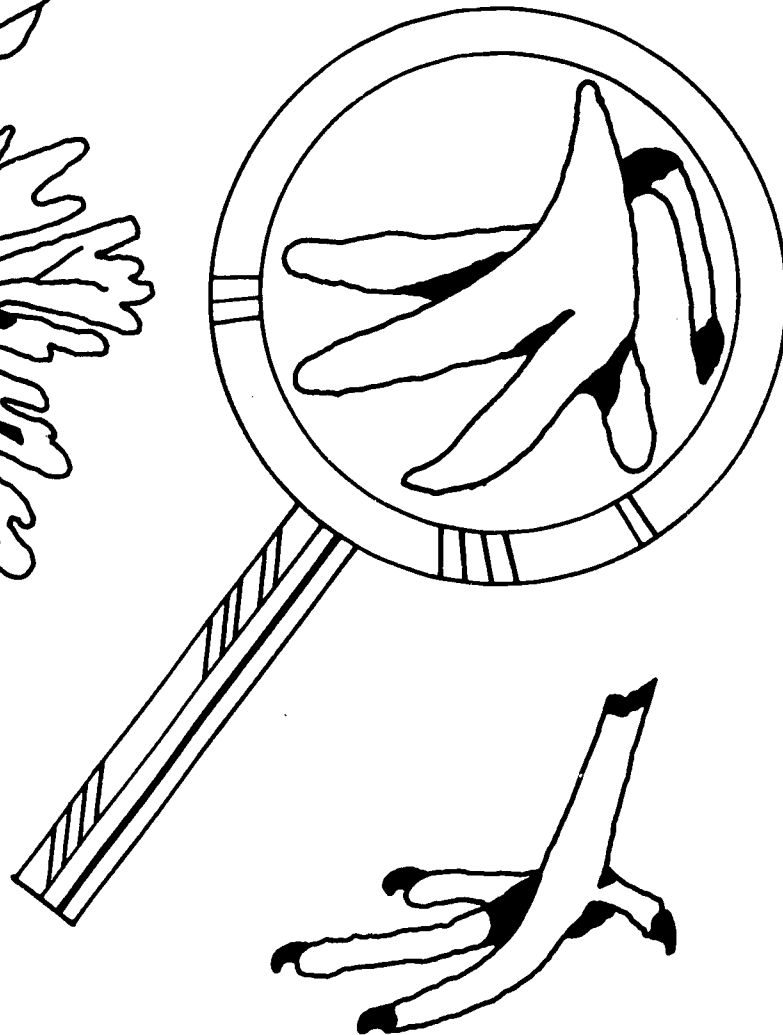
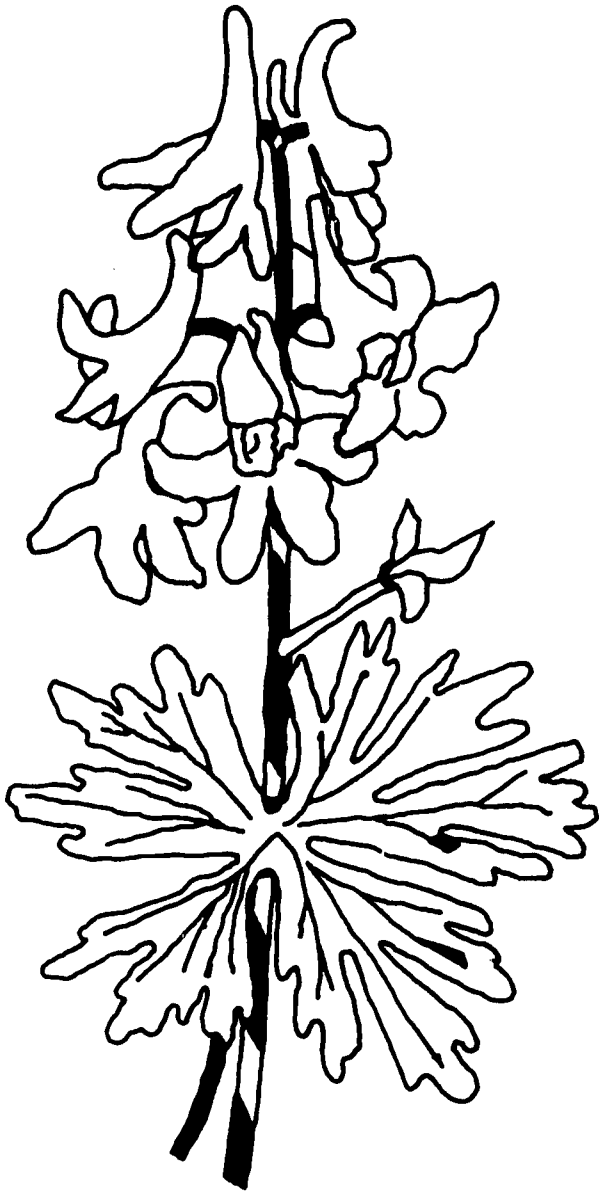
The *Evaluation of Student Growth* developed by Dr. Joseph Renzulli for the Alpha Project for the Able Learners in the State of Washington can be used effectively to evaluate this learning experience. The form is found on page 73 in *A Guidebook For Evaluating Programs For the Gifted And Talented* by Joseph S. Renzulli. The guidebook can be purchased from the Office of the Ventura County Superintendent of Schools, Ventura, California. This form provides a structured approach for recording evaluative information about objectives. Students can be involved in the evaluation process. Spaces are available on the form for indicating highest levels of thinking used in meeting each cognitive objective, checking the development of affective objectives and indicating the degree to which each objective has been met.

THROUGH THE LOOKING GLASS

A one-day seminar to foster an understanding of how all types of life depend on other types of survival.

Bess Coppedge
Dougherty County Schools

THROUGH THE
LOOKING GLASS



THE LARKSPUR LOOKS LIKE
THE FOOT OF A LARK

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Seminar Title: THROUGH THE LOOKING GLASS

Target Group: Grades three through six

Total Time: One day, 9:30-1:45

Group Size: 45-48 students

Pupil/Teacher Ratio: 12:1

General Objectives:

- To teach students to be aware of their surroundings.
- To point out similarities and differences in nature and the relationship of living things.
- To foster an understanding of how all types of life depend on other types for survival.

Orientation: A naturalist from the Audubon gives a brief talk and shows her collection of bird nests, butterflies and posters (20 to 25 minutes).

Individual Activities

I. Nature Trail Walk

- A. Objective: To point out likenesses and differences of some plants, emphasizing placement on stems and shapes of leaves.
To show that some plants grow in a different habitat from others to insure reproduction.
To teach why plants should not be picked indiscriminately.
- B. Time Required: 30 minutes each for four groups.
- C. Group Size: 10 to 12 students.
- D. Physical Setting: Chehaw Park and Audubon trails or any outdoor area.
- E. Materials: Guidebooks for wildflowers and trees in area.
- F. Process: Point out examples of plants which teach objectives. It will probably be necessary to preview trails the day before in order to spot objects to be pointed out.

II. Slide Presentation and Collection Study

- A. Objectives: To demonstrate different types of bird nests and habitats and where these are found.
To show slides of wild flowers in Dougherty County and point out their names.
- B. Time Required: 30 minutes each for four groups.
- C. Group Size: 10 to 12 students.
- D. Physical Setting: A darkened room adjacent to the display of nests and posters.
- E. Materials: Slides, projector, screen, natural objects such as bird nests and butterflies to display.
- F. Process: Show slides, read prewritten information, allow questions. Give students time to examine and handle displays.

III. Life in a Drop of Water

- A. Objective: To make students aware of the many types of life which exist in a drop of rich pond water.
- B. Time Required: 30 minutes per group.

- C. Group Size: 10 to 12
- D. Physical Setting: Dark room in which to view microscope slides.
- E. Materials: Projectorscope or any microscope which projects pictures on a screen, depression slides, rich pond water, books to be used to identify animals on the screen.
- F. Process: Make slides from a few drops of pond water. Put slide in projectorscope and identify and discuss as many minute animals as possible.

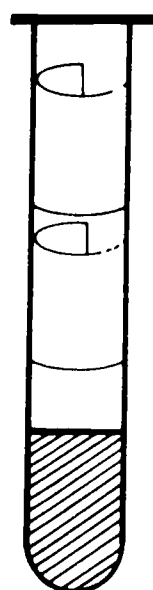
IV. Through the Looking Glass

- A. Objective: To sharpen observation skills.
- B. Time Required: 30 minutes.
- C. Group Size: 10 to 12
- D. Physical Setting: Outdoors near a wooded area.
- E. Materials: A hand lens for each child and books to be used to identify insects and flowers.
- F. Process: Collect a few specimens of everyday insects to be observed. For example, male and female crickets are easy for students to identify. Lead students to find other things to look up in books and identify.

V. Sun Prints

- A. Objective: To use nature and light in a creative way.
- B. Time Required: Flexible.
- C. Group Size: 10 to 12 students
- D. Physical Setting: You **must** have a sunny day and a protected place to secure ammonia.
- Warning:** Industrial ammonia is **dangerous** and must be handled by an adult.
- E. Materials: Blueprint paper, dark construction paper, long cardboard tube to fit over mouth of quart jar holding ammonia, industrial ammonia and glass jar with tight-fitting cap.
- F. Process: Select leaves, seeds or grass and arrange in graceful design on blue print paper. Shade paper with dark construction paper. Go out into bright sunlight and remove dark paper. Allow direct sun to shine on sheet for about 15 seconds. Cover again. Be careful not to let sun reach the paper again. Roll up the paper and place it in the tube. Expose the tube to ammonia for about 30 seconds then close tube at once. Remove print from tube and mount on construction paper.

Closed top on tube



2 sheets in tube

← Industrial ammonia

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VI. Nature Collage

- A. Objective: To use nature in a creative experience.
- B. Time required: Flexible
- C. Group size: 10 to 12 students
- D. Physical setting: Wooded area
- E. Materials: Glue; construction paper; seeds flowers, leaves, etc., gathered by each child.
- F. Process: On nature walk, collect a few objects of interest. Arrange specimens and glue them on construction paper in interesting patterns. Be sure to caution students not to pick objects which do not seem to be in abundance.

VII. Sketching

- A. Objective: To sharpen observation and drawing skills.
- B. Time Required: Flexible
- C. Group Size: 10 to 12 students
- D. Physical Setting: Outdoors or inside if there is good light.
- E. Materials: Charcoal pencils, sketching pads.
- F. Process: Display some interesting pictures of birds, animals or shapes. Give each student paper and charcoal. Show a few basic tricks of shading. Then encourage students to draw or sketch on their own.

VIII. Bird Feeder

- A. Objective: To reinforce students' interest in nature and conservation.
- B. Time Required: Flexible
- C. Group Size: 10 to 12 students
- D. Physical Setting: Pine woods
- E. Materials: Peanut butter, open pine cones, heavy cord, meal, small grocery bags.
- F. Process: Mix peanut butter with meal (may be old and buggy). Find suitable cones and tie cord tightly to top, leaving hanging room. Press peanut butter mixture into cone. Place into paper bag for students to take home.

In the morning, groups of students rotate on a prearranged schedule until students have participated in each group. In the afternoon, students should be permitted to move freely from one activity to another. The only requirement should be that students finish anything that they start.

Planned and submitted by Bess Coppedge, resource teacher for the gifted, Dougherty County Schools.

Copyright May 30, 1978

METRIC CARNIVAL

**A one-day seminar to introduce and reinforce the concepts
of the metric systems.**

**Nancy Paschal
Dougherty County Schools**

Seminar Title: METRIC CARNIVAL

Target Group: Grades three through six

Time: One day, 9:30-1:45. The time on this seminar is very flexible.

Pupil/Teacher Ratio: 12:1 or less (Volunteers are needed for afternoon activities.)

Group Size: 40 to 45

Teacher Preparation: Teachers need to study the metric system.

General Objectives: The purpose of this seminar is to introduce and reinforce the concepts of weight, length and volume in the metric system.

Physical Setup: Morning—four study groups with 10 to 12 students each. Afternoon—outside or in large room

Morning Study Groups: 30 minutes each with students rotating on a prearranged schedule until each student has been to all groups.

I. Weigh Out (Weight)

- A. Objective: To introduce the concept of weight in the metric system.
- B. Time Required: 30 minutes
- C. Group Size: 10 to 12
- D. Physical Setting: Any classroom or section of a room.
- E. Materials: Two or three balance scales, two spring scales with a container on top, one bathroom scale marked in kilograms, items for children to weigh—pencils, canned goods, etc. and items already weighed by teacher.
- F. Process: Explain the unit of weight in the metric system (gram) and the use of the prefixes as they relate to weight (kilo, hecto, deka, deci, centi, milli). Hold up items and explain how much each item weighs (Metric Flash Cards by Edu-cards Corporation, Eastern, PA. 18042). For example, a nickel weighs 5 grams, an apple about 200 grams. Or other items can be weighed by the teacher and passed around for students to hold. Divide the students into four smaller groups. Each group rotates to four stations. Have the directions printed at each station.

1. **Balance Scales**—Show students in large group how to use the scales. At this station let them select three to four small items, weigh them and record the weight.
2. **Kilogram Bathroom Scales**—Each student guesses his/her weight and that of another person in the group. Then each student weighs himself/herself and records the weight. You may also play guess the teacher's weight.
3. **Flash Cards**—You may substitute teacher-made cards for prepared ones. Make sure cards have questions that pertain to weight. The cards need to be self-checking. Use 10 of the most difficult ones.
4. **Spring Scale**—Have various items on the table and weights which are marked 5, 10, 15, 50 and 100 grams. Instruct students to select items one at a time and guess the weight. This is best done by balancing the item in one hand and the weight in another, but the student should arrive at this idea himself. Each item estimated should be checked by actually weighing it.

During station work the teacher should move around, asking questions to make sure that the basic concept has been understood by each student.

II. Lively Liters (Volume)

- A. Objective: To introduce the concept of volume in the metric system.
- B. Time Required: 30 minutes
- C. Group Size: 10 to 12 students
- D. Physical Setting: A room where water is available
- E. Materials: Measuring cups or beakers marked in liters; eye droppers marked in milliliters; items that are marked in liters, such as coke cans, other fluids; light board or flash cards on volume.
- F. Process: Introduce the concept of meters and other metric terms pertaining to length. Students measure their height, weight, arm length, foot length, etc. Students then select appropriate instrument or unit to measure various distances or lengths.

Example:

trunk of a tree—tape, centimeters

Distance from Albany to Atlanta—kilometers

width of a paperclip—ruler, millimeters

Divide the group to play games or do more measuring.

III. Metric Madness

- A. Objective: To reinforce and extend the concept of the metric system.
- B. Time Required: 30 minutes
- C. Group Size: 10 to 12 students
- D. Physical Setting: Classroom, outside, any section of large room
- E. Materials: Meter sticks, metric tapes, metric rulers, any additional games.
- F. Process: (Group may be divided.) Students are instructed to find and list five items which exactly measure two meters. Then have a metric scavenger hunt where students find five to 10 things. For example, find an item that measures two centimeters.

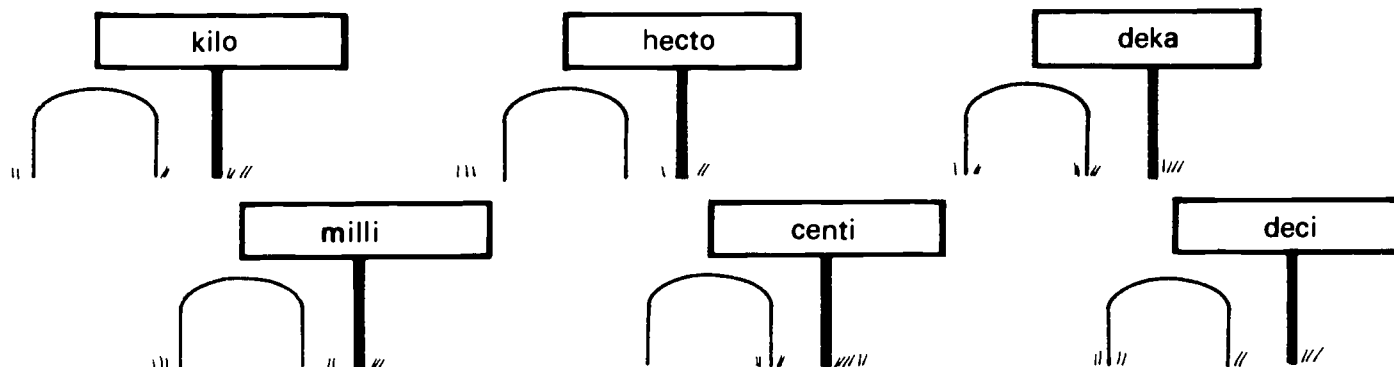
IV. Afternoon—Metric Carnival

- A. Objective: To reinforce the concepts of the metric system and to stimulate interest in the metric system.
- B. Time Required: Approximately one hour and forty-five minutes
- C. Group Size: 40 to 45 pupils
- D. Physical Setting: Outside or inside if weather is bad
- E. Materials: Items for individual games, volunteers to help with games, movies about the metric system.
- F. Process
 - 1. Students are given metric money (printed on ditto sheet). Students are reminded that the metric system does not include money and that this is an idea just to use for the carnival. The types of bills used are kilo bill, hecto bill, deka bill, deci bill, centi bill, milli bill, and base bill (needed to make exchange simple). Each student is given one kilo bill and two of each of the remaining bills.
 - 2. Each game is given a price that must be paid before playing the game.
 - 3. Students must give the correct change at the game. Change may be obtained from the banker (teacher), but the student must tell the banker exactly how to change the bills or he or she is fined.

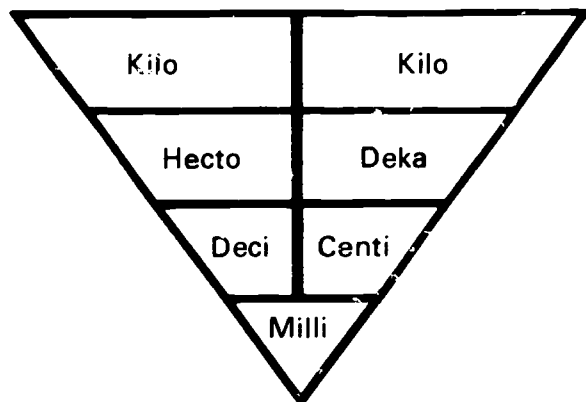
For example, student A wants to play a game that costs one hecto bill. The student has a kilo bill. He or she should go to the banker and ask for 10 hecto bills for the kilo bill, or exchange 10 deka bills for one hecto bill. Exchange should be made only one unit up or one unit down. This avoids confusion.

Games

1. **Metric Swing (outside):** The cost of playing is one hecto bill. Assign and label metal croquet wickets a value from kilo to milli and place in the ground with kilo being the farthest back. The student gets three balls to hit through the wickets with a mallet. Each ringer receives a bill. For example, a ball hit through **kilo** gets a kilo bill. Student must know which metric prefix is worth the most. The teacher or volunteer at the game should not help the student decide.

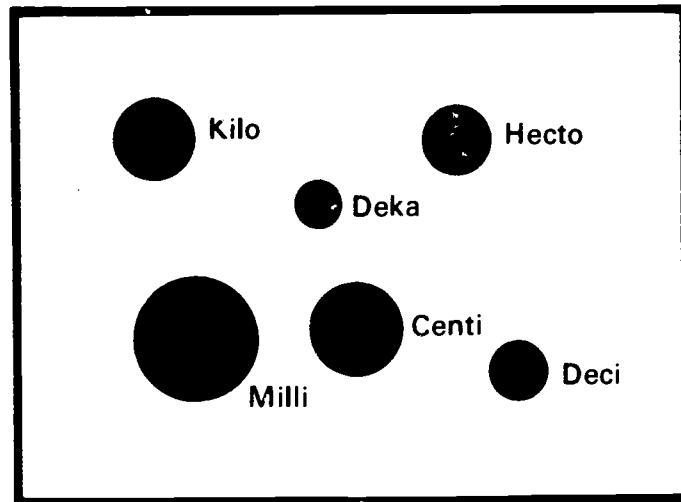


2. **Metric Shuffle (inside or outside):** The cost of playing is one hecto bill. A shuffle board is designed on floor with masking tape. Student gets three swings with mallet at butter dishes with tops on them. For example, if dish lands on **kilo**, then student wins a kilo bill.

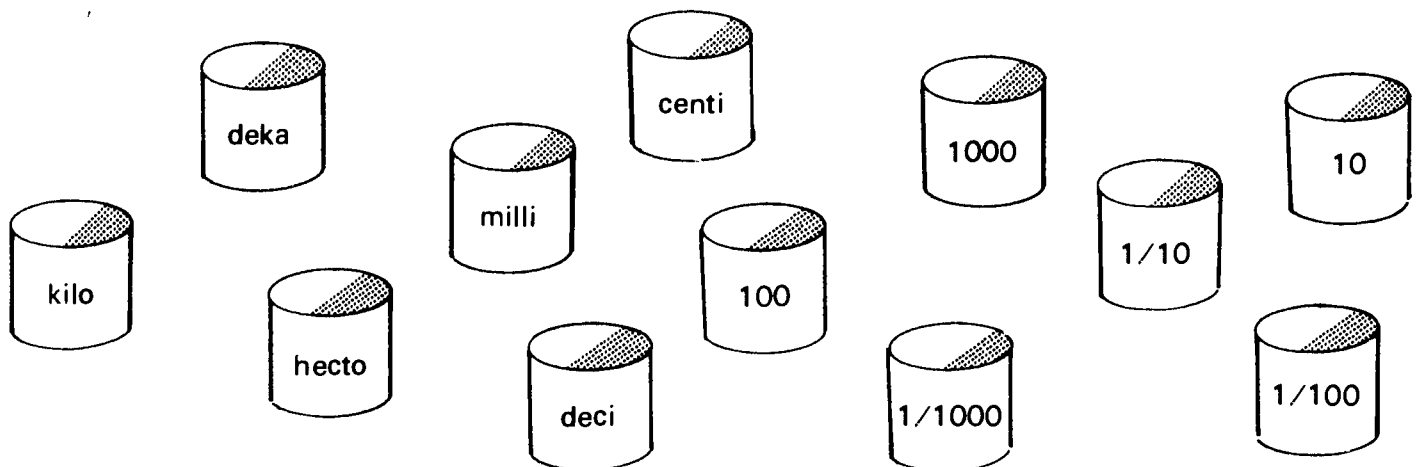


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3. **Metric Toss (inside or outside):** The cost of playing is one deka bill. A toss game is made from a large refrigerator box. The student throws a bean bag at holes marked with the metric prefixes. Again, the student must know which prefix is the highest.



4. **Metric Bounce (inside or outside):** The cost of playing is one base bill. Ice cream containers are marked with metric prefixes and their definition. The student is given three tennis balls to ring the containers. In order to win, they must ring the prefix with one ball and its definition with another ball. The game **Toss Across** may be adapted for this.



5. **Musical Metrics (inside):** The cost is one deci bill. Set up game similar to musical chairs. Students move to music around the chairs in a circle. When the music stops, students who are sitting on selected chairs have a chance to answer a question about the metric system (flash cards used in the morning are helpful). A correct answer is awarded a kilo bill, hecto bill, etc., depending on the difficulty of the question.
6. **Sack Race—25 meters (inside or outside):** The cost is one hecto bill. This is just a fun game in which the first three places are awarded a kilo bill, hecto bill or a deka bill.

7. **Metric Movies (inside):** Three 10 to 15 minute movies or filmstrips, one on each unit of the metric system, are shown. Students are paid a kilo bill for each movie watched. (Students are not allowed to watch all three movies in a row.) Each movie is announced so that students have an opportunity to see the movies.

CONCLUSION: During the last 15 minutes, all activities are stopped and kilo bills of each student are counted. The student with the most kilo bills wins a prize of two-liter bottles of coke.

Planned and submitted by Nancy Paschal, resource teacher for gifted in Dougherty County.

Copyright May 31, 1978

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(SAMPLE PROGRAM)



SECOND ANNUAL METRIC CARNIVAL

OBJECTIVE: The purpose of this seminar is to introduce and reinforce the concepts of the metric system.

- 9:15 - 9:30 Orientation
- 9:30 - 11:30 Participation in four 30 minute groups
- Weigh Out
 - Meter Magic
 - Lively Liters
 - Metric Madness
- 11:30 - 12:00 Lunch
- 12:00 - 1:30 Metric Carnival
- Action packed games to test your knowledge of the metric system.
- 1:30 - 1:45 Awards

TRICK OR TREAT?

A CLOSER LOOK AT WHAT YOU EAT

A mini-course designed to help students appreciate both the complex details and basic guidelines involved in planning a healthful diet. They will become aware of the harmful effects of too much sugar, salt and other additives in their diets.

Kathy Kennedy
Clayton County

Mini-course Title: "TRICK OR TREAT" - A CLOSER LOOK AT WHAT YOU EAT

Target Group: Grades three through eight

I. Student Objectives

Students will

- A. develop an awareness of the harmful effect too much sugar and some other additives can have on the body;
- B. develop an appreciation and understanding of the basic guidelines involved in planning a healthful diet;
- C. demonstrate problem solving skills;
- D. develop group interaction skills;
- E. develop an awareness of the factors that influence personal values, likes and dislikes;
- F. be able to recognize a fabricated or traditional food;
- G. be able to read a food label and determine standard nutrient information;
- H. develop an awareness of the conflicting opinions on food issues;
- I. become familiar with recipes for alternate nutritionally safe snack choices;
- J. determine personal values concerning food preferences.

II. Thought Processes to be Developed

- A. Knowledge
- B. Application
- C. Creative problem solving
- D. Receiving
- E. Responding
- F. Valuing

III. Instructional Materials, Resource Speakers and Field Trips

A. Books

- Davis, Adele, *Let's Eat Right and Stay Healthy*. Harcourt, Brace, Jovanovich, Inc., 1954.
- Dufty, W. *Sugar Blues*. Radnor, Penn.: Chilton Book Company, 1975.
- Feingold, Ben F. *Why your Child is Hyperactive*. New York: Random House, 1975.
- Lansky, Vicki. *The Taming of the CANDY Monster - Continuously Advertised Nutritionally Deficient Yummies*. Minnesota: Meadowbrook Press, 1977.
- Hurdle, J. Frank, M.D. *Low Blood Sugar*. Parker Publishing, 1969.
- Powers, Hugh, M.D. and James Presley. *Food Power: Nutrition for Your Child's Behavior*. New York: St. Martin's Press, 1978.
- Yudken, J. *Sweet and Dangerous*. Bantam Books, 1973.

B. Magazine articles

1. Alston, Elizabeth. "How to Read a Food Label." *Redbook*, August 1978.
2. Divoky, Diane. "Can Diet Cure the L D Child?" *Learning*, March 1978.
3. Mayer, Jean. "The Better Truth About Sugar." *N. Y. Times*, June 20, 1976., p. 26.
4. Schoenberg, H. P. "Is Sugar Really Bad for You?" *Good Housekeeping*, February 1976, 182:156.
5. "Summer Nutrition," *Learnings*, May/June 1978, p. 48.

C. Newspaper articles

1. Brody, Jane E. "Additives in Foods: Are They As Bad As Some Folks Think?" *Atlanta Constitution*, July 27, 1978, pp. 1-F.
2. Dunn, John. "Hot Dogs To See Dog Days?" Clayton County, *News-Daily*, July 23, 1978, pp. 4-A.

D. Kits

1. Food . . . Your Choice - A Nutrition Learning System, Level 3, National Dairy Counsel (Teachers Guide, duplicating Masters, student materials).
2. Globe Filmstrips: "Health Issues and Trends (4 f.s. with cassettes) Teacher Guide.
3. "Labels Make Good Reading" (Food . . . Your Choice).

E. Suggested Resource Speakers

1. Lunchroom director
2. Hospital dietician
3. Health food specialist
4. Nutritionist

F. Suggested Field Trips

1. Local supermarket
2. Health food store
3. Food processing plant

IV. Content

- A. Foods and their nutritional value.
- B. Additives - harmful or helpful
- C. Diets and their value
- D. Food and its effect on the human body

V. Questions to be Considered by Students

Discuss both sides of the issue.

- A. What are additives? Are they all harmful? for everyone? for anyone?
- B. What alternatives do you have for sweeteners? snacks?
- C. What are the possible effects of eliminating sugar from our diet?
- D. Should all snacks be omitted from one's diet? If so, why? If not, why?
- E. What role do vitamins play in our lives?

VI. Activities and Strategies

A. Teacher

1. For motivational purposes, several class periods before the unit begins, place signs around the room such as "The C.A.N.D.Y. Monster is Coming" and "Watch Out For The C.A.N.D.Y. Monster."
2. Discuss with the students the labeling requirements
 - a. when foods have nutrients added;
 - b. when a nutrient claim is made *about* the food on the label or in advertisement.

(Notes: Food with nutrients added are enriched or fortified. An enriched food is one to which one or more vitamin(s), mineral(s) or protein(s) which are naturally present in the food are added—Bread. A fortified food is one to which one or more of these nutrients which are *not* naturally present in the food are added — Vitamin D milk.)

3. Explain that the label must list the ingredients in order of quantity. For example—sugar, water, vitamin C—means the product contains more sugar than anything else.

B. Student

1. Create an acronym for the word candy to be displayed with the acronym taken from this mini course—Continuously Advertised, Nutritionally, Deficient Yummies.*
2. Fill out the Personal Dietary Study included and the "How Do You Feel About Food" sheet from the Food . . . Your Choice kit.
3. View films "Super Gloop" and "Junk Food Junkie." (Available from Georgia Classroom Films)
4. Discuss these films.
5. Fill out and discuss the "How do you choose" sheet from the Food . . . Your Choice kit.
6. Review available literature on the harmful effects of sugar and other additives. There are several appropriate case studies described in *Food Power: Nutrition and Your Child's Behavior* by Powers and Presley.
7. Review several recipes for nutritionally safe snacks. Choose several to try. Bring one to class to share.
8. Conduct a label investigation. Study several labels and list what information is included.
9. Survey peers using the Personal Dietary Study included.
10. Tally, summarize and chart results.
11. Plan a follow-up activity such as
 - a. propaganda campaign for natural snacks (posters, brochures, talks)
 - b. preparing a snack in quantity and sharing with peers for the purpose of showing them that something that isn't necessarily sweet can taste good.
12. Creative writing activity—respond to the following
 - a. Junk Food Journal proudly announces its first annual "You Are What You Eat" sweepstakes! To enter just write in 50 words or less why you think junk food has made you what you are today. Enter soon, you may be a big wiener!
 - b. Illustrate yourself. Have someone sketch your profile or outline your body. Decorate this with pictures of your favorite foods as body parts or however you like. Be imaginative!
13. Make a movie or animated cartoon depicting harmful effects of too much sugar.
14. Speak to PTA groups.
15. Prepare a presentation of the facts of sugar's harmful effects on children's behavior to be presented to the school's principal. Ask him to discontinue sales of ice cream, soft drinks, etc., in the school. Have an alternate plan for raising necessary operations money produced by the sale of these items.
16. Have students keep a record of the junk food advertisements presented them during childrens' television programs. Use the Advertisement Survey sheet included. Tally, summarize and chart results. Determine what action, if any, could be taken to change the trend of advertisement.
17. Have students discuss information they think should be included on a label and design a label they feel would be appropriate.
18. Brainstorm how we can implement solutions to the problems identified related to nutrition and consumer concerns. From whom do consumers demand information?

19. Experiment with testing for starch in food.
20. Write an original newsletter for your peers to share what you have learned.
21. Put together a recipe book of your favorite safe snacks.
22. Debate the additives issue.
23. Write for additional information.

SCORE Program **SUGGESTED FORMS FOR STUDENT ACTIVITIES**

Clayton County
(Kathy Kennedy)

PERSONAL DIETARY STUDY

Boy _____ Name _____ Date _____

Girl _____ Homeroom _____ Grade _____ Age _____

I. List below all the food that you have eaten in the last 48 hours (two days). Be specific. Give amounts eaten and brand names of products when possible.

BREAKFAST

LUNCH

SUPPER

Day 1

Snack(s)

Snack(s)

Snack(s)

BREAKFAST

LUNCH

SUPPER

Day 2

Snack(s)

Snack(s)

Snack(s)

II. Favorite Foods. Fill in the name(s) of each food type below, how much is eaten and how often.

	Food type	Quantity	How often
Cereal(s)	_____	_____	_____
	_____	_____	_____
Snacks	_____	_____	_____
	_____	_____	_____
Drinks	_____	_____	_____
Vegetables	_____	_____	_____
Desserts	_____	_____	_____
Fruits	_____	_____	_____
Meats	_____	_____	_____
Other	_____	_____	_____

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SCORE Program
Clayton County
Kathy Kennedy

ADVERTISEMENT SURVEY

Topic _____

Name of surveyor _____ Date _____

Media (Check one)

T.V. _____

Newspaper _____

Radio _____

Pamphlet _____

Magazine _____

Other _____

Title _____ Time _____

Name of product advertised _____

Made by _____

Length of advertisement or commercial _____

Number of times presented _____

Type of appeal _____

Comments

VII. Evaluation

A. Course

1. Were objectives as defined met?
2. Was the course too long?
3. Were materials sufficient to help students reach objectives?
4. How does course need to be revised so it better meets the needs of students?

B. Student

1. Students will be asked to select a problem dealing with food additives and to demonstrate creative problem-solving techniques in solving it.
2. Through group activities, students will demonstrate group interaction skills.
3. Through food selection, including snacks, students will demonstrate they understand the value of eating nutritionally safe food.
4. Student will plan a healthy diet and will follow it for a designated period of time.

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STRING SCULPTURE

This mini-course involves the use of geometry to create a three-dimensional sculpture with string.

**Nancy Hodge
Baldwin County**

Mini-course Title: STRING SCULPTURE

Target Population: Grade three and above

I. Student Goal and Objectives

A. Goal

Students will develop proficiency in using the ruler, protractor and compass to design and create an attractive string sculpture.

B. Cognitive and Psychomotor Objectives

Students will

1. identify a sculptured art form;
2. list several types of sculpture media;
3. list and define three sculpture methods;
4. define given words related to string sculpture;
5. use a ruler and pencil to draw a straight line connecting two points a line of a given length beginning at a specific point, two parallel lines and various triangles and quadrilaterals;
6. use a ruler and protractor to draw an angle of given degrees, a right triangle and an equilateral triangle;
7. use ruler and pencil to mark off equal spaces on a line segment and on the segments of an angle beginning from the point of intersection;
8. to create an attractive envelope by connecting the appropriate points on lines (parallel lines, angles, triangles, etc.)
9. use a compass to draw a circle of a given diameter;
10. use a pencil and protractor to mark off equal spaces on the circumference of a circle;
11. hammer a nail straight into a board;
12. design a simple and workable pattern for a string sculpture using one of the geometric forms (triangle, angle, circle, etc.)
13. design an original and useable pattern for a string sculpture using more than one geometric form;
14. create a simple sculpture using one of the designs;
15. evaluate his or her performance on the unit's activities.

C. Affective Objectives

Students will

1. become aware of various media and forms of sculpture;
2. be willing to attempt a new art form on paper and in three-dimension;
3. derive satisfaction in ability to properly use a ruler, protractor and compass;
4. persevere in his or her efforts to execute the geometric drawings and sculpture.

II. Thought Processes to be Developed

- A. Knowledge
- B. Application
- C. Analysis
- D. Evaluation
- E. Creativity
- F. Problem solving

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III. Instructional Materials

A. Teacher

1. Winter, John. *String Sculpture*, 1972. Order from
Creative Publications, Inc.
P. O. Box 10328
Palo Alto, Calif. 94303
2. Seegafer, Marianne. "String Art," *Instructor*, November, 1974, p. 121.

B. Student

1. Pencil
2. Eraser
3. Ruler
4. Protractor
5. 8" x 10" board, one-half inch thick
6. 7/8" brads (They come in small cannisters at hardware store. Each contains enough for three or four children.)
7. Cloth (knit, felt, etc.) to cover board

Note: The size and thickness of the boards and nails may be varied to suit your needs and what you have available. However, on a small, limited budget, the sizes given here will be less expensive. It is suggested to use nails no shorter than the seven-eighths inch brads since the student would have difficulty holding the nail in order to strike it. Nonraveling material such as knit or felt works up more neatly than those which ravel. Various types of string, thread and yarn can be used, but be sure that whatever is used is strong. Many yarns are not.

If paint and brushes are available or can be obtained more easily than fabric, you may prefer to paint the boards rather than covering them.

C. Class (materials to have on hand)

1. Colored pencils
2. Compasses
3. Paper
4. Staple gun (for attaching fabric to board)
5. Paint and brushes (optional)
6. Gem clips (for hangars)
7. Crochet thread (comes in large spools in a variety of colors at the dime store)
8. Hammers (need quite a few, preferably one per child, on construction day)
9. Glue (to touch knots to prevent untying)

IV. Content

- A. Mathematics
- B. Art
- C. Career education
- D. Coordination skills
- E. Vocabulary building
 1. Acute
 2. Curving
 3. Compass
 4. Curved envelope
 5. Envelope
 6. Geometric form

7. Intersecting lines
8. Mobile
9. Modeling
10. Molding (casting)
11. Nonintersecting
12. Obtuse
13. Parallel
14. Protractor
15. Quadrilateral
16. Right angle
17. Sculptor
18. Sculpture
19. Stable
20. Three dimensional
21. Triangle
22. Two dimensional

F. Use of certain carpenter and geometric tools

V. Questions to be Considered by Students

- A. What is art?
- B. Why do people become artists or do art work?
- C. What is sculpture? a sculptor?
- D. What are some methods of sculptures?
- E. What are some materials used?
- F. Contrast the mobile and the stabile?
- G. Why does an artist produce the product he or she does?
- H. How will I go about producing a piece of sculpture?

VI. Activities and Strategies

A. Type I enrichment suggestions

1. View teacher—compiled display of string sculpture.
2. Hold a discussion of art, primarily sculpture, using questions from content section and others.
3. Hold a discussion of various geometric terms to determine extent of students' background in geometry and use of ruler, protractor and compass.

B. Type II enrichment suggestions

1. Background information (quotations)
 - a. Art—a way of organizing experience; example—statue, song, painting, poem, can come to life again in the consciousness of other people.
 - b. Only when sharing takes place has a work of art been fully realized.
 - c. Art is regarded as a language; artists like other people, would rather not be talking to themselves.
2. Activities — lessons on the following.
 - a. Use of ruler and pencil
 - (1) drawing straight line segments
 - (2) marking off equal spaces on line segments
 - (3) drawing parallel lines
 - (4) drawing triangles and other geometric forms
 - b. Use of protractor and pencil
 - (1) drawing acute, obtuse and right angles
 - (2) drawing various triangles and quadrilaterals

- c. Use of protractor, ruler and pencil to mark off equal spaces on a circle
- d. Use of above skills to draw the following:
 - (1) Two intersecting lines at various angles
 - (2) Two nonintersecting lines at various angles
 - (3) Parallel lines
 - (a) centered with equal and unequal spacing
 - (b) offset with equal and unequal spacing
 - (4) Three or more straight lines. Examples: triangles, quadrilaterals, Λ and Z .
- e. Use of hammer

3. Construction steps

- a. Paint board or cut fabric to fit. Fabric should be about 1½-2" wider than board on all sides.
 - b. Attach cloth to board folding edges of fabric over to back and staple.
 - c. Tape design on paper to board front.
 - d. Hammer nails into board through paper at every marked point leaving nails extending about one-fourth inch.
 - e. Tear away paper from board
 - f. Tie on and wind string to form design — follow directions in *String Sculpture*.
4. Design a pattern for an original string sculpture on same size paper as board
5. Make a string sculpture using own design (It is important to note that winding the string from nail to nail must be done in a somewhat different method than connecting the points with pencil lines.)

C. Type III enrichment suggestions

- 1. Design and construct a string sculpture for the school (office, classroom, hall, lunchroom or library).
- 2. Design and make a display on how to do string sculpture for the library.
- 3. Use the book, *String Sculpture*, to learn how to create more advanced forms.
- 4. Create a more advanced sculpture such as a three dimensional one using intersecting plane surfaces.
- 5. Plan and teach an arts workshop or string sculpture for the local recreation department or allied arts.
- 6. Use string sculpture as a medium of expression when studying in other content areas. For example, in history make a model of the Mayflower; in science, create a rocket; in botany, design a flower.

VII. Evaluation (Suggested questions)

A. Course

- 1. Were objectives reached?
- 2. Did students enjoy the course?
- 3. Were activities too involved and too detailed?

B. Student

- 1. Are students able to identify a sculptured art form?
- 2. Can students demonstrate the use of geometric tools?
- 3. Can students list and describe several types of sculpture media and methods?
- 4. Was student able to design an original string sculpture, produce it and determine his or her own means of evaluation?

OVER HILL, OVER DALE

Thought provoking group activities for environmental exploration. Can serve as base for research into sociology of an area — pioneer life, history, etc.

Phyllis Hall
Bobbie Chapman
Douglas County Schools

Mini-course Title: OVER HILL, OVER DALE

Target Group: Grades three through 12

I. Student Objectives

A. Cognitive

Students will learn

1. history of Cades Cove (or selected community)
2. sociology of the area
3. wildlife characteristics of the Great Smoky Mountains
4. vocabulary development
5. geography and geology of the surrounding terrain
6. research skills

B. Affective

Students will gain an appreciation for

1. nature
2. natural unpolluted environment
3. pioneer settlers' beliefs, customs, hardships and lack of conveniences
4. the balance of nature and an awareness of their presence as outsiders with a potential threat to other aspects of life
5. awareness of senses

II. Thought Processes to be Developed

- A. Problem solving
- B. Creative thinking
- C. Communication skills
- D. Value clarification
- E. Divergent thinking
- F. Responsibility for self and others
- G. Group discussion
- H. Evaluation processes

III. Instructional Materials

Instructional materials will be dependent upon the age and experiences of the target group with which this mini-course is used. Some materials are given under Activities and Strategies, others may be obtained from

1. national and state park offices
2. county offices
3. community resource people

IV. Content

Nature

V. Questions to be Considered by Students

1. Where are we?
2. What was here before us?

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3. How were the mountains formed?
4. What animals are characteristic of the area?
5. How did the pioneers live?
6. What grows here?
7. What region are we in?
8. Why does this area differ from further areas north or south?
9. How did the falls originate?

VI. Activities and Strategies

Student and Teacher

1. Creative writing
2. Blind fold, walk-trust walk
3. Question and answer game — animals
4. Listening techniques
5. Vocabulary game
6. Miniature guessing game
7. Living and nonliving
8. Name game
9. Micro-trials
10. Scavenger hunt

(These activities can be done at any Educational Environmental Center.)

VII. Evaluation

A. Course

1. Student interest
2. Student involvement
3. Student's attitude toward trip

B. Student

1. Self evaluation-desire to return
2. Peer evaluation-analysis of group dynamics
3. Teacher evaluation-observation

ACTIVITIES FOR "OVER HILL, OVER DALE"

1. *Miniature Guessing Game.* Divide students into pairs and give each pair a paper cup and a magnifying glass. The partners take turns locating something interesting which they can hide under the cup, then play 20 questions (guesser must ask only yes or no questions) trying to guess what is under the cup.
2. *Living and Nonliving.* Divide the group into two teams, living and nonliving, and have each team list as many things as they can find in their category. Set a time limit. Materials—pencils and paper.
3. *Name Game.* Divide class into three or four groups and send each to an area where a diverse weed or plant growth occurs. The groups then compile a list of 10 descriptive names for the plants (banana leaf, sticker weed, yellow flower, etc.) The groups then visit the other areas and try to guess which names describe which plants. A game can be played awarding points for both recognized by the other group. Materials—pencils and paper.
4. *Micro-trails.* Give each student a six-foot length of string and have the student put it on the ground anywhere. Each student is to stretch out the length of string from his or her starting point and construct a miniature trail on which he or she can guide others showing them all the points of interest (use sticks as markers). Encourage students to use their imaginations! Another way to do this is to use string to enclose a small area which becomes a miniature national park. Material—string.
5. *Scavenger Hunt.* Draw up a dittoed checklist of things the students might easily find in the immediate area. Divide into small teams and set a time limit. The team that finds the most wins. The checklist might also be in the form of a bingo card. The first team to bingo wins.
6. *Awareness through Vocabulary.* Seat group in a circle in an interesting environment. Ask students to look around (without moving) and locate everything in area which name starts with a certain letter (e.g. T for tree, tips of leaves, timothy grass, thistle, etc).
7. *Trust Walk.* Divide students into pairs and blindfold one person in each pair. The other person gently leads the blindfolded person into sensory experiences. The guide must seek out interesting touch, smell, taste and sound sensations and help the other person appreciate them without verbal communication. Switch places after a few minutes.
8. Seat students in a circle and give each one a card with the name of a natural object, plant or animal characteristic of the area. The names should be clearly visible from a distance and each student should put or tape this to his or her forehead. The student with the name on his or her forehead asks questions in order to guess the animal or word. The questions should only be answered by a yes or no.

Suggested Type III extended activities:

Research projects springing from discoveries about natural development and man's impact on the area selected.

Parallels to especially interesting areas such as Cades Cove and the Great Smoky Mountains can be drawn.

UP, UP AND AWAY

This mini-course is designed to give students an introduction to the world of flight.

Anne Edwards
Bullock County

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Mini-course Title: UP, UP AND AWAY

Target Group: Grade four

I. Student Objectives

A. Cognitive

Students will

1. demonstrate the forces involved in flying a plane—gravity, lift, thrust and drag
2. apply creative potential as measured by the construction and composition of activities
3. measure distances accurately
4. construct graphs and compare findings
5. apply scientific data as shown by correctly predicting results based on known facts, such as explaining Bernoulli's principle as it applies to flying planes
6. conduct research as demonstrated by satisfactory completion of one research project
7. communicate to others the facts learned through research as shown by presenting his or her findings to a group of peers
8. think critically, as demonstrated by evaluating given circumstances, such as evaluate the impact of flight on the world
9. think divergently, as indicated by a variety of answers on boundary breakers
10. conduct action research by gathering and interpreting questionnaire data

B. Affective

The student will be able to express feelings and attitudes by being involved in the boundary breaker.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Analysis
- E. Evaluation
- F. Creative thinking
- G. Planning
- H. Communication
- I. Forecasting
- J. Decision making

III. Instructional Resources

- A. Library and reference materials available through local, regional and state libraries
- B. Community resources and people
- C. Job cards as described under Activities and Strategies

IV. Content

- A. Forces involved in flying a plane—gravity, lift, thrust and drag.
- B. Plane construction and fuels
- C. Bernoulli's principle
- D. Air resistance
- E. History of flight and personalities involved

- F. Graph construction
- G. Measuring distances

V. **Questions to be Considered by Students**

- If you could fly anywhere, where would you go?
- If you could be an airplane, what kind would you like to be?
- Why do you think man wanted to fly?
- If you could fly with any famous person from the past, with whom would you fly?
- If you could look down from a very high altitude, what would you see that would please you the least? The most?
- You have been transported 100 years into the future, describe your plane?
- Do planes of today work on the same basic principles as the first aircraft? Explain your answer.
- What would our world be like today if there were no manufactured means of flight?
- What do you think the next invention in flight will be?
- How many of your classmates have flown? How do they feel about flying?
- How would you feel about having a career in the airplane industry?
- Do paper airplanes work on the basic principles of flight just as heavier planes do? Explain your answer.
- In your opinion, what are the most important events in the history of flight?
- How does Bernoulli's principle apply to flight?

VI. **Activities and Strategies**

- A. Compare the use of oxygen in a rocket engine with the use of oxygen in an aircraft jet engine.
- B. Explain the similarities in the lives of the following men.
 1. Charles A. Lindbergh
 2. Orville Wright
- C. Evaluate the impact of human flight on the world.
- D. Construct job cards from the following to be used as independent activities or as group activities.

Job Card #1

LINDBERGH

Write a diary telling how you think Charles A. Lindbergh felt at important times in his life.

Job Card #3

WRIGHT BROTHERS

After researching the life of Orville and Wilbur Wright, write a skit about important events in their lives.

Job Card #2

COUNT FERDINAND VON ZEPPELIN

After researching the life of Count Ferdinand Von Zeppelin, draw a comic strip about an important event in his life.

Job Card #4

ORIGINAL PLANE

Draw an original design for a paper airplane. Construct this plane. Fly this plane. Measure and graph the distances. Make at least seven flights.

Job Card #5

HISTORY

Construct a time-line showing the history of flight.

Job Card #6

PEOPLE

Find out who the following people are and tell how they contributed to flight — Jacques Etienne, Sir George Dayley, Joseph Montgolfier, John Stringfellow, Samuel Langley, Amelia Earhart and Robert Goddard.

Job Card #7

CONFIGURATIONS

Construct models of different configurations of paper airplanes to show how gravity, lift, thrust and drag affects a plane's flight.

Job Card #8

Using the models constructed in card #7, fly, measure the distances and graph the flights. Compare the flights. Which configuration flew the furthest?

Job Card #9

QUESTIONNAIRE

Make copies of the questionnaire below. Pass the copies out to those members of your class who have flown on a plane.

1. How many times have you flown?
2. How long did the flight or flights last?
3. Where did the flight or flights begin and where did they end?
4. On what kind of plane or planes did you fly?
5. Were all the planes jets?
6. Were you afraid before you took off on your first flight?
7. Would you like to fly again?

Tabulate and interpret the results of this questionnaire to your class.

Job Card #10

FIND OUT ABOUT

1. Flying and nonflying model planes
2. Materials used to build them.
3. Different ways in which flying models are powered
4. How flying models are controlled
5. Activities of model-plane flying clubs

Job Card #11

OXYGEN

Compare rocket fuels with airplane jet engines fuel. What important part does oxygen play?

Job Card #12

MAP

Draw a map of your state. Mark all the major airports.

Job Card #13

YELLOW PAGES

Make a list of all ads in your telephone directory that have anything pertaining to the airplane industry and model airplanes.

Job Card #14

AIRPORTS

Find out about the function of the terminal, the runway, the control tower and the hangars at an airport.

Job Card #15

AIRPORT II

Draw a diagram of what you think airports will look like in the future.

Job Card #17

CAREERS

Make a list of possible careers in the airplane industry. Classify these careers as to professional white-collar and blue-collar workers.

Job Card #16

AIRPORTS III

Learn the busiest airports in the United States, Europe and South America. Note how many planes they handle every day.

Job Card #18

BERNOULLI'S LAW

Analyze Bernoulli's law and tell how it applies to flight.

VII. Evaluation

A. Course

Use the following checklist to rate the unit as to G-Good, F-Fair, P-Poor.

	G	F	P
1. Did the projects exemplify efficient research techniques? _____			
2. Did the students show critical thinking in evaluating projects? _____			
3. Did the variety of activities sustain the interest of the group? _____			
4. Did the students indicate divergent thinking in boundary breakers? _____			
5. Did the projects demonstrate applying creative abilities? _____			
6. Did the students use scientific data effectively? _____			
7. Did the variety of activities meet individual needs? _____			
8. Did the students communicate to peers facts learned through research? _____			

B. Student

1. Effectively demonstrate the forces involved in flying a plane.
2. Compare early flight with modern flight.
3. Construct graphs concerning unmanned spaceflights.
4. Tell how Bernoulli's principle applies to flight.
5. Build a questionnaire about flight and graph the results.
6. Select a job-card and creatively carry out the project.

LAND OF THE PHAROAHS

The purpose of this mini-unit is to give students an overview of the Ancient Egyptian civilization.

Wendy Jackson
Hiram School
Paulding County

Mini-course Title: LAND OF THE PHAROAHS

Target Groups: Grades Four, Five and Six

I. Goals and Objectives

Students will

- A. spell and define a given list of vocabulary words;
- B. identify cities along the Nile River when given a map;
- C. learn the Egyptian numeration system;
- D. master duplation—an early Egyptian method of multiplication;
- E. create a time-line of the kingdoms of Ancient Egypt;
- F. draw the floor plan of the typical mud-brick house of a peasant and the villa of an Egyptian official;
- G. name and identify 10 Egyptian gods;
- H. use hieroglyphics to decode a message;
- I. explain the process of mummification and give a rationale;
- J. discuss the articles found in King Tut's tomb and list 20 different articles that might be placed in a tomb today.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Creative problem solving
- E. Evaluation

III. Instructional Materials

A. Books

1. Casson, Lionel and the Editors of Time-Life Books. *Ancient Egypt*. New York: Time Inc., 1965.
2. Cottrell, Leonard. *Land of the Pharaohs*. New York: World Publishing Company, 1960.
3. Fairservis, Walter A. Jr. *Egypt, Gift of the Nile*. New York: The MacMillan Company, 1963.
4. Glubok, Shirley. *The Art of Ancient Egypt*. New York: Atheneum, 1962.
5. Jessup, Ronald. *The Wonderful World of Archeology*. Garden City, N.Y.: Doubleday and Company, Inc. 1965.
6. Jones, Ruth Fosdick. *Boy of the Pyramids*. New York: Random House Inc., 1952.
7. McGraw, Eloise Jarvis. *The Golden Goblet*. New York: Coward-McCann, Inc., 1961.
8. McGraw, Eloise. *Mara, Daughter of the Nile*. New York: Coward-McCann, Inc., 1953.
9. Meadowcroft, Enid LaMonte. *The Gift of the River*. New York: Thomas Y. Crowell Company, 1937.
10. Neavies, Janet. *The Mystery of the Pharaoh's Treasure*. Philadelphia: J. B. Lippincott Company, 1963.
11. Nesbit, E. E. *Story of the Amulet*. New York: Lothrop, Lee and Shepard Company, 1947.
12. Robinson, Charles. *The First Book of Ancient Egypt*. New York: Franklin Watts Inc., 1960.
13. Williamson, Joanne S. *Hittite Warrior*. New York: Alfred A. Knopf Inc., 1960.

14. Williamson, T. R. *Messenger to the Pharaoh*. New York: Logmans, Green and Company, 1937.
15. White, Jon Manchip. *Everyday Life in Ancient Egypt*. New York: G. P. Putnam's Sons, 1963.

B. Audiovisual

1. Super Mag V.2 #4 Xerox Corporation, 1977.
2. Knight, Dennis and Patterson Blick. *Ancient Egypt*. Beckingham, Kent, England, 1970.

C. Other materials

1. Map of Egypt-Nile River Valley
2. Roll of adding machine tape-time-line
3. Manilla drawing paper (8" x 10" or 12" x 18")
4. Pellon lining material
5. Yarn scraps
6. Art paper
7. Poster board
8. Any duplicator books such as *Ancient Civilizations, Egypt*. Instructo Corporation, Paoli, Penn., 1930.
9. Resource books including the Time-Life book *Ancient Egypt*
10. Newspapers
11. Current journals

IV. Content

- A. History of Egypt
- B. Geography of Egypt
- C. Ancient multiplication
- D. Ancient architecture
- E. Pyramids and their role
- F. Mummification
- G. Pharoahs and their lifes
- H. Hieroglyphics as a language

V. Questions to be Considered by Students

- A. Who were some of the famous pharoahs?
- B. How did their beliefs and lives effect the lives of all Egyptians?
- C. When was King Tut's tomb discovered and what lead to its discovery?
- D. Why are personal items placed in the tomb?
- E. Could we successfully use hieroglyphics as a language today?
- F. How did specific historical events affect the lives of pharoahs?
- G. Describe the process of mummification.

VI. Activities and Strategies

A. Teacher

1. Stimulate interest by using the outline of a stylized lotus leaf labeled, "What is this?" to stimulate group discussion and hypothesizing.
2. Use any pictures of King Tut, the pyramids, sphinx and news articles.
3. With students, list as many topics as possible that might be covered in the study of Ancient Egypt.
4. Check resource people, parents, etc. for slides or pictures from Egypt.

B. Students

1. Vocabulary words are printed on a large piece of art paper which has been lined with a yard stick. When definitions are found they are written on the paper by the students.
2. Maps are used by the students to identify the cities and areas of Ancient Egypt along with the Valley of the Kings.
3. The symbols of the Egyptian numeration system are printed on a piece of poster board along with their names and equivalents. The symbols are

	tally	= 1
∩	Heel bone	= 10
⊖	Coil of rope	= 100
☐	lotus flower	= 1,000
└─	Bent stick	= 10,000
🐟	fish	= 100,000
🧑	Astonished Man	= 1,000,000

Given the previous information, students are able to change numbers from one system to the other. Some examples

22	∩∩
412	⊖⊖⊖⊖∩
2141	☐☐⊖∩∩∩∩
1232	☐⊖⊖∩∩∩
3,210,213	🧑🧑🧑🐟🐟└─⊖⊖∩

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4. The early Egyptians used duplation, a multiplication method based on the doubling of one factor.

Try this example

$$\begin{array}{r} 24 \\ \times 17 \\ \hline \end{array}$$

First, make two columns of numbers. In the left-hand column start with one, double it to get two, double two to get four, etc. Do not go beyond your least factor. In this problem stop at 16. In the right-hand column start with the other factor, 24, double it to get 48, double 48, etc. until you have numerals corresponding with each number on the left.

1	24
2	48
4	96
8	192
16	384

Now the trick is to pick out numbers from the left-hand column that, added together, will equal the first factor, or 17. In this problem, one and 16 will combine to get 17. Then add the numbers across from one and 16 in the right-hand column. The product is 408.

$$\begin{array}{r} 1 \quad 24 \\ \underline{16} \quad \underline{384} \\ 17 \quad 408 \end{array}$$

Taken from *Teacher*, February 1976

- The students will create a time-line on the adding machine tape which will show the kingdoms of Ancient Egypt beginning in about 3200 B.C. when King Narmer united Upper and Lower Egypt under one king. The line should continue until the birth of Christ and include the 30 dynasties. Each period may be represented by a different color.
- The floor plans of the homes of officials and the farmers varied greatly. These plans might be duplicated on one-half inch graph paper and each room colored or labeled as a means of comparing and contrasting lifestyles.
- Select 10 gods from the many worshipped by the Ancient Egyptian people. Have the students reproduce their likenesses on drawing paper with magic marker. Display these around the room (labeled). The children may then research legendary stories which may be written and displayed under the likeness of the god.
- Prepare worksheets with secret messages written in hieroglyphic symbols. In the corner of the worksheet, print the symbols along with the words they represent. A twist—the Egyptians did not read from left to right or from top to bottom. The secret message may actually begin in the lower right-hand or lower left-hand corner!
- Students should read all possible articles on mummies, and the process of mummification. In group discussion the process will be explained as well as the Ancient Egyptian belief in eternal life. The biological aspects of this method of preservation should also be discussed.
- Discuss in group, the discovery of Tut's tomb. Point out the implications of being king of an entire empire at age nine. In naming the articles placed in Tut's tomb note that they were everyday items which he would use in his afterlife. Ask what items would be placed in our tombs if we were buried in this manner today. Have students select 17 to 20 different items they would want in their tombs (this may include mummified pets). Super Mag V2, #4, Xerox Corporation, 1977, shows a two page picture of "Tut's Tomb Today." These 17 items may be printed on the back of a pre-cut mummy case shape, the front of which is decorated in the style of today as each individual desires.

Vocabulary list

natron - embalming salt

hieroglyphs

pharaoh

scribe

shadoof

Inundation

Ra

papyrus

artifact

Great Pyramid

Menes

Howard Carter

delta

"hounds and jackals"

Gizeh

chariots

lapidaries

effigy

pectorals

lapis lazuli

Osiris

Book of the Dead

archeologist

Amenhotep III

Khufu

obelisk

scarab

Amen-Ra

C. Some additional enrichment activities for students

1. Construct a wall hanging of six or seven hieroglyphics and their definitions drawn and colored on a piece (6" x 18") of Pellon fabric. The picture symbols can be colored with crayons, markers or colored pencils. Strips of poster board (1" x 6") should be glued at the top and bottom. Glue a short piece of yarn under the top strip of poster board to hang. If colored posterboard is not available color should be added.
2. Students may wish to do independent research and oral reports on any of the following areas.

art

animal worship

Valley of the Kings

Ptolemy

Seti I

furniture

papyrus-scribes

calendars

Rosetta Stone

Ankhamen

currency

pyramids

costumes-jewelry

transportation

Ramses II

architecture

obelisks

sculpture

scarabs

lotus

education

Tutankhamen

3. Students may design their names in a cartouche as each of the pharaohs did. Their hieroglyphics could be fictional or the name could be fictional or both.

VII. Evaluation

A. Course

1. Were objectives met?
2. Have students been able to demonstrate greater knowledge concerning pharaohs?
3. Did students enjoy their work?
4. In what ways does the course need to be changed?

B. Student

1. Student will spell and define a given list of vocabulary words related to Egypt and pharaohs.
2. Students will identify cities located long the Nile River.
3. Students will understand the Egyptian number and duplation systems by using the system in solving given problems.
4. Student will decode a message written in hieroglyphics.
5. Independent study projects will be evaluated in terms of knowledge acquired concerning Egypt, pharaohs and pyramids.

DON'T LET THE FLU' BUG CATCH YOU!

A study dealing with factors that make people sick and with disease control and prevention, using a microscope to study germs. This course also introduces many famous scientists. Suggested for midwinter.

**Linda Moody
Westside School**

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Mini-course Title: DON'T LET THE FLU BUG CATCH YOU!

Target Group: Grades four through six

I. Student Objectives

A. Cognitives

Students will

1. use a microscope and micro-slide viewer;
2. draw examples of blood cells, a virus, a bacteria, a magnified object of his or her choice;
3. match some famous names with their medical discoveries;
4. use newspapers, news reports and health department reports to trace the spread of illness caused by flu viruses;
5. help prepare a display of good health techniques to prevent spread of colds or flu, the symptoms of flu and what to do if ill from the flu;
6. conduct an interview;
7. use creative ability in making a flu bug and by composing a story.

B. Affective

Students will

1. have a better understanding of the problems caused by absences due to illness;
2. gain a deeper appreciation of some of the medical miracles that are commonplace today (antibiotics, smallpox vaccinations).

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Evaluation
- E. Creative thinking

III. Instructional Materials

- A. Micro-slide viewers and Introductory Lesson and Harmful Bacteria Lesson
- B. Microscopes and slides
- C. Reference books for researching famous persons
- D. Newspaper articles about flu epidemic
- E. Resource persons (e.g. doctors and nurses)

IV. Content

This unit is prepared with a number of objectives in mind that may seem unrelated. However, most of the students will have never used a microscope or looked at blood or bacteria. Therefore, with the long range goal of discussing the flu season, what makes people sick and what to do about it, along with the following activities, makes an interesting mini-course for the midwinter flu season.

- A. Research techniques and tools
- B. Study of famous microbe hunters such as Lister, Pasteur, Leeuwenhalk, Jenner, Koch, Harvey, Roetgen, Fleming and Salk.

- C. Use of microscope—introductory lessons on use and care of microscope
- D. Study of harmful bacteria
- E. Study of disease control and prevention
- F. Study of general health rules for avoiding the flu and how to care for it
- G. Absences because of contagious illnesses and their effect upon individuals, schools and business.

V. Questions to be Considered by Students

- 1. How do germs make you ill?
- 2. How do medicines (antibiotics) and vaccines cure or prevent illness?
- 3. What do germs really look like? Do all look alike?
- 4. Who are some of the scientists who have made important medical discoveries and what did those discoveries do for mankind?
- 5. What would it be like if we did not have the benefits of the work of the great scientists?
- 6. How can the flu be avoided, what are the symptoms of the flu and what do you do if you get the flu?
- 7. How do absences caused by illness affect various people and businesses?

VI. Activities and Strategies

A. Students

- 1. look at slides of various types
- 2. draw pictures of a virus and harmful bacteria
- 3. take a field trip to the laboratory at the hospital.
- 4. trace spread of flu across country and state by using articles and reports.
- 5. interview people involved with absentee problems-principal, supervisor in a factory, classroom teacher, worker who has been absent, student who has been absent.
- 6. do research on famous bug seeker. Report orally to group plus written summary and picture to post on display.
- 7. work crossword puzzle on people and their discoveries.
- 8. research good health techniques to try to avoid the flu, its symptoms and what to do if ill (poster display).
- 9. create a bad germ by using clay, stuffed paper, foam yarn.
- 10. write a story using a bacteria or virus that has invaded a person's body as a character (e.g. Bacteria Bowl — the story of germs versus white blood cells; white blood cells; white blood cell as a knight dueling with a virus; western theme-germs as the rustlers, with antibodies as the marshall).

B. Teachers

- 1. Arrange visit for resource person from county health department.
- 2. Arrange field trip to lab at hospital.
- 3. Guide student research.

VII. Evaluation

A. Course

Students will constructively criticize and evaluate the course.

B. Student

The evaluation will be by teacher observation and will be based upon student behaviors as compared to those stated in objectives.

SOUL — THEN AND NOW

This course is designed to help students learn about Afro-Americans who affected past and present history. This is a descriptive survey-type course.

Sylvia W. McGee
Lillian Rountree
Marie J. Sears
Mary Lillian White
Bibb County Schools

Mini-course Title: SOUL — THEN AND NOW

Target Group: Grades four through seven

I. Student Objectives

A. Cognitive

Students will

1. site evidence of the contributions Afro-Americans have made to society;
2. trace the origin of slave trade in America;
3. compare the religious and cultural beliefs of African origin with contemporary religious and cultural beliefs;
4. trace the Civil Rights Movement and its effect on today's students.

B. Affective

Students will

1. recognize African music and trace its development;
2. recognize Afro-American art and trace its development.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Analysis
- E. Synthesis
- F. Evaluation
- G. Reviewing
- H. Responding

III. Instructional Materials and Resources

A. Books

1. Contee, Clarence G. "The Emergence of Du Bois As An African Nationalist." *Journal of Negro History*, LIV (Jan. 1969), 48-61.
2. Heard, Joseph Norman. *The Black Frontiersmen*. New York: John Day Co., 1969.
3. Hoenter, Corrine K. *Black Crusader: Frederick Douglass*. Chicago: Rand McNally and Co., 1970.
4. Katz, William Loren. *The Black West*. Garden City, N.Y.: Doubleday and Co., Inc., 1973.
5. *Legacy For All: A Record of Achievements by Black American Scientist*. (Booklet by Western Electric)
6. Lester, Julius. *To Be A Slave*. New York: Dial Press, Inc., 1968.
7. Murray, Alma and Robert Thomas, eds. *The Scene*. New York: Scholastic Book Service, 1975.
8. Peare, Catherine Owens. *Mary McLeod Bethune*. New York: Vanguard Press, Inc., c. 1951.
9. Rowley, Margaret. "Black Heritage in the Bicentennial." *The Atlanta Inquirer*, 15, (Jan. 7, 1976) 1, 13.
10. Raines, Howell. *My Soul Is Rested*. New York: G. P. Putnam's Sons, 1977.
11. Stern, Emma Gelders. *His Was The Voice: The Life of W.E.B. DuBois*. New York: Crowell-Coller Press, 1971.

12. Wimberly, James H. "The Role of the Association For the Study of Negro Life and History in Promoting the Teaching of Black Education From 1926 to 1931." (Unpublished)
13. Young, Margaret. *The First Book of American Negroes*. New York: Watts Inc., 1966.
14. Fox, Paula, *The Salve Dancer*. Scandale, New York: Bradbury Press, 1973.

B. Others

1. Newspapers
2. News magazines
3. Resource people
4. The Horn Book Magazine
5. Demographic information
6. Records, music, speeches, drama, opera
7. The Scholastic Black Literature Series - The Search
8. *Anansi the Spider* by Gerald McDermott
9. Materials from the Association for the Study of Negro Life and History
10. Encyclopedias of Negro history
11. Movies
12. Reference materials

IV. Content

1. History
2. Afro-Americans
3. Oral history
4. Folklore
5. Myth
6. Religion
7. Cultural beliefs
8. Music
9. Art
10. Fiction
11. Nonfiction
12. Poetry
13. Drama
14. Minstrals
15. Dialect
16. Stereotypes
17. Politics
18. Social problems

V. Questions to be Considered by Students

1. How have the contributions of Afro-Americans affected the society in which we live today?
2. In what ways have cultural and religious beliefs having their origin in Africa affected our world?
3. What effect did slave labor have on America?
4. How has the Civil Rights Movement affected your education?
5. Other questions as determined by the student and the contract he or she develops and the topic he or she chooses to study.

VI. Activities and Strategies

A. Student

1. Interview older citizens to collect superstitions, stories, beliefs or customs relating to Afro-American culture.
2. Trace the influence of early jazz on modern music.
3. Interview selected ministers of the community and report to class.
4. Compare histories of the Civil War which present the Northern and Southern view points and write a paper presenting conclusions.
5. Interview people of African culture about religious and cultural beliefs.
6. List similarities in cultural beliefs (food, superstitions, clothing, jewelry, sports and games).
7. Make a list of idiomatic expressions, cliches and sayings attributed to Afro-American culture.
8. Compile a list of recipes attributed to Afro-American influence.
9. Select, research and dramatize a related topic.
10. Produce an original art work showing its relationship to African art.
11. Role-play an incident taken from the life of a Afro-American who has personally affected student's life.
12. Interview older citizens, listing the social changes that have occurred within their life times.
13. Select the names of five individuals from a prepared list and tell of their contributions to the local community.
14. Select and report on at least two entries from a prepared bibliography.

VII. Evaluation

A. Course

1. Were objectives met?
2. Did students enjoy the course?
3. Were students able to design and carry out contracts?

B. Student

1. Student evaluation will be mainly based on the contract developed by the individual student and the evaluation standards outlined in the contract. Contract should be signed by the teacher, student and parents.
2. Additional student evaluation for knowledge acquisition should be developed by the teacher as the need for such arises. This evaluation should be based on topics under study by individual students or the total group.

CREATIVE DRAMATICS

This mini-course is designed to give students a brief overview of some of the fields of drama and to assist students in differentiating between verbal and nonverbal communication.

Cobb County Teachers of the Gifted

Mini-course Title: CREATIVE DRAMATICS

Target Group: Grades four through eight

I. Student Goals and Objectives

Students will

- A. increase their fluency and overall ability in language usage;
- B. learn the difference between verbal and nonverbal communication;
- C. learn to communicate their own thoughts, emotions, attitudes or impressions to others;
- D. develop increased self-understanding and awareness of individual feelings;
- E. learn to distinguish between pantomime and improvisation; verbal and nonverbal communication;
- F. be given impromptu situations and will be required to react to these problems through improvisation;
- G. be required to create their own pantomimes and improvisations;
- H. become aware of observation techniques needed in dramatics. Students will be assigned a character study in which he or she must observe a person's mannerisms, body movements and expressions and create a short presentation of that character.

II. Instructional Material

- A. Cassette player
- B. Blank tapes
- C. Construction paper
- D. Magic markers

III. Activities and Strategies

A. Student

1. Use facial expressions to pantomime certain emotions such as happy, sad, surprised and pensive.
2. Write sentences describing emotions for other students to pantomime.
3. Perform pantomimes incorporating body movements such as sleepy, ecstatic, exhausted or angry.
4. Mirror activities - Students choose a partner. One student assumes that he is facing a mirror and his partner is his reflection.
5. Perform improvisations of actions such as sneeze, whistle, shout, laugh and hum.
6. Teacher directed improvisation of a machine.
7. Creative writing - students will write an improvisation including a title, place, time, important details, character and something happening that involves all these.
8. Perform student written improvisations.
9. Character Study
 - a. Students will select someone they know personally to study.
 - b. Students will single out physical mannerisms that exemplify their subject.
 - c. Students will write a short description of their subject and an accompanying monologue.
 - d. Students will present short character study.

B. Teacher

1. Discuss history and origin of drama.
2. Define pantomime.
3. Discuss importance of good observation to good acting.
4. Discuss voice and sound in relation to improvisation.
5. Compare and contrast pantomime and improvisation.
6. Discuss the importance of careful physical and emotional analysis of a character.

IV. Questions to be Considered by Students

- A. What is pantomime?
- B. What is the difference between verbal and nonverbal communication?
- C. What is the importance of body language in communication?
- D. How are good observation techniques related to good acting?

V. Evaluation

Informal criticism by teacher and students. It is essential that warm, constructive comments are offered since expressive skills are being criticized.

PRODUCING A SCHOOL NEWSPAPER

A mini-course designed to give students the beginning skills needed for writing and producing a school newspaper.

Leary Bell Finley
Rome City Schools

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Mini-course Title: PRODUCING A SCHOOL NEWSPAPER

Target Group: Grade four through eight

I. Student Objectives

A. Cognitive

Students will

1. experience writing creative titles and articles
2. develop good public relations skills
3. observe local newspaper production
4. collect, organize and produce a school paper
5. become better writers
6. become aware of all school activities
7. criticize constructively

B. Affective

Students will

1. gain a better understanding of the skills needed in producing a newspaper
2. gain a deeper appreciation for the local newspaper
3. be better informed about school activities

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Evaluation

III. Instructional Materials

- A. Newspapers, regular and schools
- B. Dictionaries
- C. Roget's thesaurus
- D. English books
- E. Community resource people
- F. Film strips
- G. Cameras
- H. Film

IV. Content

- A. Sentence structure
- B. Paragraph structure and organization
- C. Team work organization
- D. Creative writing
- E. Record keeping
- F. Public relations
- G. Stencil cutting, printing, etc.
- H. Sales ability
- I. Photography
- J. Advertising
- K. Vocabulary building
- L. Interview skills

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V. Questions to be Considered by Students

- A. What type of articles would appeal to the students?
- B. Who is responsible for the overall paper?
- C. What are the techniques involved in producing a newspaper?
- D. What is the difference between a feature and an editorial story?
- E. What are the roles of the staff members?
- F. How does an individual conduct an interview?

VI. Activities and Strategies

A. Student

- 1. Brainstorm for reasons for producing a school newspaper
- 2. List sections needed to make a good paper
- 3. Elect or volunteer for staff
- 4. Design or draw up format for paper
- 5. Plan schedule for papers to be published
- 6. Collect, organize information and produce the paper
- 7. Evaluate paper

B. Teacher

- 1. Motivate interest in reading newspaper
- 2. Motivate or create an interest in the production of the paper
- 3. Provide resource individuals
- 4. Plan a study trip to the local newspaper plant
- 5. Guide students in publishing a school paper
- 6. Assist in evaluation

VII. Evaluation

A. Course

Product produced

B. Student

- 1. Attitude toward newspaper articles
- 2. Interest and concern for school and community papers
- 3. Constructive and destructive criticism

ATLANTA'S GREAT — PAST AND PRESENT

This mini-course is made up of two sections. It emphasizes people and their contributions to Atlanta and to society as a whole. The model given here could be developed on a statewide basis using famous Georgians rather than local people. It could also serve as a model for a regional group to use in implementing a regional study.

Malissa Cox

Jackie D'Andrea

Condit Lotz

Bonnie Nutt

Martie Price

Atlanta Public Schools

Section I

Mini-course Title: "ATLANTA'S GREAT — PAST AND PRESENT"

Target Group: Grades four through eight

I. Student Objectives

A. Cognitive

Students will

1. choose from a list of Atlantans 20 individuals to research and relate information including chronology, what they did and how they contributed to society;
2. locate through reading five additional Atlantans and relate information including chronology, what they did and how they contributed to society;
3. do independent research and exploration according to his or her individual interests;
4. develop skills related to organizing and reporting data and findings.

B. Affective

Students will gain an appreciation for the role Atlantans have played in the development of our society.

II. Thought Processes to be Developed

- A. Critical Thinking
- B. Logical Thinking
- C. Synthesizing
- D. Generalizing
- E. Hypothesizing

Skills To Be Developed

- F. Research
- G. Properly organizing and reporting data and findings
- H. Self-direction
- I. Divergent interest development

III. Instructional Materials

- A. Books (those available to local community through local school, city, county or regional libraries)
- B. Films (those available in local or state-film libraries on documentaries from local or state television stations)
- C. Magazines that have stories concerning the individuals under study
- D. Newspapers with stories about individuals
- E. Encyclopedias
- F. Brains!!!
- G. Articles and book reports written by the persons under study
- H. Community resource people

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IV. Content

Atlantans to research

1. Hank Aaron
2. Ivan Allen
3. Asa G. Candler
4. Meredith Collier
5. Douglas Davis
6. W. E. B. DuBois
7. Mrs. S. R. Dull
8. Moses W. Formwalt
9. George Goodwin
10. Henry W. Grady
11. Bryan (Bitsy) M. Grant Jr.
12. Col. L. P. Grant
13. G. V. Gress
14. Joel Chandler Harris
15. William B. Hartsfield
16. John Hope
17. Hardy Ivy
18. Maynard Jackson
19. Robert (Bobby) Tyre Jones
20. Dr. Martin Luther King, Jr.
21. Sam Massell
22. Benjamin Mays
23. Robert McGill
24. Margaret Mitchell
25. Jack Nelson
26. Eugene Patterson
27. Tom Pitts
28. Gen. John Pope
29. John Portman
30. Celestine Sibley
31. Ted Turner
32. Other famous Atlantans

V. Questions to be Considered by Students

1. When in history did the individual live? Relate chronology.
2. What major events occurred in the world during the individual's lifetime?
3. What influence did the world's happenings have on the individual?
4. What contribution(s) did the individual make to society?
5. How did the contribution(s) affect society at that time?
6. How have the contribution(s) affected present day society?
7. Who in the individual's life aided him most in making his contribution(s).

VI. Activities and Strategies

A. Student

- Gather material concerning person selected
- Organize material for presenting information
- Make a scrapbook about the person
- Photographs about the individual
- Listen to tapes about the individual
- Artwork - original
- Plan a tour (trip to archives)
- Interview community resource people
- Keep a daily log of work
- Make a creative report

B. Teacher

- Find and use motivating techniques for creating interest
- Gather materials concerning famous people
- Assist student in putting report together
- Advise student in putting report together

VII. Evaluation

A. Course

- Availability of materials
- Student interest and enthusiasm as evidence through analyzing student work.

B. Student

- Able to recognize and discuss contributions of at least twenty Atlantans from the list given at the beginning of the mini-course.
- Able to discuss the contributions of five additional Atlantans that he/she located during the readings.
- Able to share with the class the completed project developed concerning the special individual chosen to study in depth.

Section II

Mini-course Title: "ATLANTA'S GREAT — PAST AND PRESENT"

Target Group: Grades four through eight

I. Student Objectives

- A. Cognitive — The student will be provided opportunities to gain historical information and knowledge about our state capital.
- B. Affective — The student will be provided opportunities to gain an appreciation of the history of our capital city.

II. Thought Processes to be Developed

- A. Critical thinking
- B. Logical thinking
- C. Synthesizing
- D. Generalizing
- E. Hypothesizing

III. Instructional Materials

- A. Books found in school, city, county and regional libraries that relate to Atlanta or other areas under study.
- B. Magazines, such as *Atlanta* that contain articles concerning Atlanta or other area under study.
- C. Newspapers
- D. Encyclopedias
- E. Films found in city, school or state film libraries or in television station libraries
- F. Filmstrips about Atlanta or area under study
- G. Other materials as determined by student needs
- H. Community as a whole including resource people

IV. Content

- A. History of Atlanta
- B. City government
- C. Famous Atlantans
- D. Modern day Atlanta
- E. Atlanta's contributions to society
- F. Education in Atlanta
- G. Famous Atlanta landmarks
- H. Atlanta as a world trade center
- I. Atlanta, year 2000

V. Questions to be Considered by Students

1. What factors helped to aid Atlanta in becoming the city it is today?
2. What influence did major historical events have on the history of Atlanta?
3. What do you feel have been Atlanta's greatest contributions to society?
4. How do you think Atlanta will look in the year 2000?
5. What will life be like in Atlanta in the year 2000?
6. Do you feel famous landmarks in Atlanta should be preserved? If so, why?
7. How could life in Atlanta be improved?

VI. Activities and Strategies

A. Student (plan of work - individual to student)

1. Make a scrapbook about Atlanta assembling a cross-section of historical information and projections (predictions) about the future.
2. Secure a map of Georgia. Identify Atlanta and other major cities.
3. Secure pamphlets and information about historic and interesting places to visit in and around Atlanta.
4. Exchange letters with another gifted student in Atlanta in another school, telling him about yourself and your school activities. Send a self-addressed envelope.
5. Choose either a city councilman or state legislator to contact in order to ask why he or she voted as he or she did on a particular issue, or what he or she considers the most important issue(s) being discussed this term.
6. Select a subject to study indepth and make a diorama illustrating the findings. Use a cardboard box approximately 12" x 15" wide.
7. Take pictures to include in a scrapbook or use in reporting.
8. Make tapes of interviews to be shared.
9. Do original drawings to be used in reporting and sharing with others data about Atlanta.
10. Write creative and original stories about Atlanta.
11. Interview community resource people for purpose of gathering data.
12. Visit historical sites within the city.
13. Keep a log of activities.
14. Prepare a final report to be shared.

B. Teacher

1. Seek ways of motivating student interest in the course.
2. Gather needed materials
3. Secure community resource people
4. Arrange for field trips
5. Arrange for films
6. Assist and advise student in putting report together.
7. Evaluate mini-course.

VII. Evaluation

A. Course

1. Availability of materials
2. Student interest and enthusiasm as evidenced through analyzing student work.

B. Student

1. Complete quality of scrapbook and other activities as chosen by student
2. Knowledge acquired concerning Atlanta
3. Display completed diorama.

FAMILY FINANCES

A mini-course designed to aid students in a study of family money management.

Glenda Stone
DeKalb County

Mini-course Title: FAMILY FINANCES

Target Group: Grades four through eight

I. Student Objectives

A. Cognitive

Students will

1. analyze family financial resources and formulate a monthly budget, gives family size and occupation;
2. assess probable future family needs and create a plan to be prepared for needs;
3. demonstrate ability to fill out state and federal income tax forms according to financial status of family;
4. draw from a collection of unexpected good and bad occurrences that happen in daily family living and make financial adjustments to meet the occurrence.

B. Affective

Students will

1. show tolerance for the contributions of others and demonstrate ability to work out compromises when working with members of family group.
2. encourage the suggestions of other family members and their participation in making decisions concerning future needs.

II. Thought Processes to be Developed

A. Cognitive

1. Analysis
2. Synthesis
3. Evaluation

B. Affective

1. Responding
2. Valuing
3. Values organization

III. Instructional Materials

- A. State and federal income tax forms
- B. Set of good and bad unexpected circumstances to draw each session

IV. Content

- A. Marital status and number of dependents
- B. Occupation and income
- C. Income from sources other than occupation
- D. Expenses incurred by average family
 1. Utilities
 2. Food
 3. Clothing
 4. Furniture

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5. Appliances
6. Cars
7. Repairs
8. Medical and dental
9. Taxes
10. Insurance

- E. Budgeting for expenses and savings
- F. Personal relationships related to financial disagreements or agreements

V. Questions to be Considered by Students

- A. How can family live within income while paying bills and participating in recreation and savings plans?
- B. What are the physical needs of a family of this size?
- C. How are taxes paid and tax forms filed?
- D. What are the different types of taxes a family pays?
- E. What are the family's insurance needs?
- F. How can a family head plan for the future and unexpected money needs of his family?
- G. How can family members agree on spending priorities?

VI. Activities and Strategies

A. Student

1. Determine income and other sources of money according to occupation and standard of living.
2. Plan a budget for monthly household expenses.
3. Plan for unexpected debts.
4. Show responsible handling of unexpected income.
5. Cooperate with other family members to live within income.
6. Plan for future expenses incurred for a family.

B. Teacher

1. Give guidelines in determining household expenses.
2. Give instruction in tax filing.
3. Act as resource for formulation of present and future financial program.
4. Provide assistance in determining income for chosen occupation.
5. Create a set of unexpected financial circumstances both good and bad.
6. Invite speakers in fields of banking, tax preparation and insurance.
7. Provide instructional materials.

VII. Evaluation

A. Course

1. Are the instruction and materials sufficient to allow groups to plan a sound financial program for their family?
2. Are students stimulated to find out more about family finances?
3. Are professional experts provided to answer questions?
4. Are guidelines provided to allow students to determine present and future needs?

B. Student

1. Can students formulate a monthly and future budget?
2. Are tax forms filled out correctly?
3. Are unexpected circumstances handled in responsible manner?
4. Do family groups show cooperation in planning together?

C. Dissemination

1. Product - monthly budget and tax forms.
2. Process - group interaction

D. Extending activities

1. Field trips to bank, insurance claims agency or Internal Revenue Office.

5. Appliances
6. Cars
7. Repairs
8. Medical and dental
9. Taxes
10. Insurance

- E. Budgeting for expenses and savings
- F. Personal relationships related to financial disagreements or agreements

V. Questions to be Considered by Students

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C. Dissemination

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D. Extending activities

1. Field trips to bank, insurance claims agency or Internal Revenue Office.

INTRODUCTION TO ECONOMICS

This mini-course is designed to introduce the nature of economic problems in the United States today, explore the beginnings of economics and involve the students in decision-making activities related to today's world of stocks and bonds.

Alfred Hiers
Valdosta City Schools

Mini-course Title: INTRODUCTION TO ECONOMICS

Target Group: Grades four through eight

I. Student Objectives

A. Cognitive

Students will

1. define and discuss the basic concepts of supply and demand, maximizing and minimizing of margins of difference and evaluating efforts of an economic system as a whole in trying to obtain the highest level of a society's welfare through its policies and actions;
2. identify and discuss specific examples of dependent and independent variables and limited and unlimited resources in the identification and solution of economic problems;
3. participate in the actual investment process of buying and selling of stocks and bonds and evaluate their gains and losses in terms of possible social, political and historical reasons.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Analysis
- E. Synthesis
- F. Evaluation
- G. Receiving
- H. Responding

III. Instructional Materials

A. Books

1. Burket, Larry. *Your Finances In Changing Times*. Campus Crusade for Christ, Inc., 1975.
2. *How Economics Begin*. Campus Crusade for Christ, Inc.
3. Lumsden, Keith, Richard Attiyeh and George Leland Bach. *Micro-economics: A Programmed Book*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966.

B. Games

1. Hiers, Alfred. *The Plantation Game*. (This is an unpublished simulation game based on historical research covering primarily agricultural investments from colonial America into the early twentieth century.)
2. "Stocks and Bonds." (simulation game) Bookshelf games, Avon Hill Publishing Company.

IV. Content, Questions, Activities and Strategies

A. Introductory Activities

1. Field trips to local brokerage houses
2. Guest speakers from local stock brokers
3. General class discussions from students' prior knowledge of economics and economic activities.

B. Introduction. "The Nature of Economic Problems" (These ideas were found in *Microeconomics: A Programmed Book*, listed earlier.)

In the introduction to *Microeconomics*, preparation for a key football game coming up on the weekend was the activity chosen to demonstrate the nature of economic decision making. As the coach, the student has to decide how to spend 10 hours practicing offense and defense. (Any sport can be used if it involves two teams.)

Some of the questions used in *Microeconomics* are as follows . . . "Because the total amount of practice time (*can/cannot*) exceed 10 hours, the more you spend practicing offense, the (*more/less*) time you will have to practice defense . . . Since the players have a great deal of potential, you know that the more time spent practicing offense, the (*higher/lower*) will be your team's score. For the same reason you also know that the more time spent practicing defense, the (*higher/lower*) will be your opponent's score."

"... It is clear that this (*is/is not*) enough information to decide how practice time should be allocated among its alternative uses . . . Since you are trying to win and also (*maximize/minimize*) the point margin, you are concerned about raising your own score and reducing your opponent's score."

The following chart is similar to a table found in *Microeconomics*, titled "Possible Coaching Plans"

(1) Hours Practicing Offense	(2) Expected Team Score	(3) Hours Practicing Defense	(4) Expected Opponent's Score	(5) Point Margin
0	0	10	25	-25
1	12	9	30	-18
2	24	8	35	-11
3	48	7	40	+ 8
4	60	6	45	+15
5	72	5	50	+22
6	78	4	55	+23
7	85	3	64	+21
8	82	2	72	+10
9	82	1	82	0
10	80	0	92	-12

After numbers have been filled in on the chart, questions can be developed similar to the following (from *Microeconomics*): "... Column (5) shows the difference between the two scores (+ indicating a win, - a loss). Since you want to win by as large a margin as possible, you know by looking at column (5) that you should spend ____ hours practicing offense and ____ hours practicing defense . . . Odd though it may seem, this coaching problem is really an economic problem. To see why, let us analyze it more closely. First, just as the football coach is trying to maximize the _____, so, in a traditional economic problem, do consumers attempt to derive maximum satisfaction from the way they spend their incomes . . .

At this point the instructor can develop his/her own questions involving the following concepts.

1. Supply and demand
2. Maximizing and minimizing of variables
3. Limited/unlimited incomes
4. Scarce resources
5. Land, labor and capital

C. "How Economics Begin"

Larry Burket, in his book, *Your Finances In Changing Times*, has given teachers and students a well illustrated story of how economics begin, in story/cartoon form. Beginning with the idea of bartering. A dairyman decides to use nails to build a barn, instead of wooden pegs. He swaps a milk cow to the local blacksmith for the nails. When he needs more nails, he swaps another cow to a neighbor for corn and then swaps the corn to the blacksmith.

As the idea of using nails spreads, the blacksmith decides to move into the nail business full scale and stops making horseshoes and other products. As the nail business flourishes, nails become what we term as "money."

At this point, the teacher and students together may write and discuss their own interpretations of money. As stated by Larry Burket, in any system, money "must satisfy three basic functions.

1. It must have value
2. It must be storable
3. It must be divisible

At this point in his story, the author introduces paper money to his story, as customers buy large quantities of nails, but leave them in storage. A paper declaims a set quantity of nails is being held in storage, is given to the customer, who may exchange this paper for other products.

Another new concept is introduced, as the warehouse owner loans nails to a farmer to be repaid later. However, he issues paper on nails already stored in the warehouse. What has the warehouse owner become? He has become a *banker*, as he stores some nails and loans some to others.

Students can now be quizzed as to what new concept has also been created. It is *credit!* The warehouse business has prospered through the use of *credit* - other people's money. Reality to modern day circumstances enters here, as the warehouseman is forced to expand and use more and more credit.

A perfect time for speculation and discussion occurs when the story is concluded. A customer presents paper for a very large order of nails and the warehouseman puts him off because he can't supply them, other customers hear of this circumstance and present their paper at the same time. What occurs next? How did the warehouseman go bankrupt? Although credit looks like money, why isn't it? Of the three characteristics - storability, divisibility, value - what essential element does credit lack? *VALUE!* As stated by the author . . . "credit costs nothing to create."

Actual decision-making in the investment process can be achieved through students' participation in simulation games such as "The Plantation Game" and "Stocks and Bonds." (Both sources are cited earlier.) In "The Plantation Game" (unpublished), the teacher can choose any time period in American history from colonial America up to the twentieth century and research the agricultural successes and failures of a certain section of the South. The instructor then gives the students a certain sum of money and asks them to invest this money over a short time period (e.g. 5 years) in such categories as forest products, feed grains, tobacco, rice, indigo, shipping, investment houses and

banks. Using the research completed previously, the instructor then gives the students generalized results (no change, gained 1/3, lost 1/5, investment doubled, etc.) and ask them to total their money and reinvest.

At various intervals, the class may discuss the historical reasons for their investment successes and failures (wars, depressions, invention, other).

Using the "Stocks and Bonds" game (Bookshelf Games, Avon Hill), the student not only learns most of the common economic terms used in the stock market, but actually becomes a competitive investor in the market.

Upon completion of this economics unit, the students will possibly consider alternatives such as the following.

1. Developing their own economics simulation games.
2. Making a study of the career opportunities available, specifically related to the field of economics.
3. Selecting three or four major issues confronting the financial leaders of today and preparing a study of those issues through the writings of the nation's leading economists as reported in *Time*, *Newsweek*, *U.S. News and World Report*, *New York Times* and *Wall Street Journal*.
4. Researching, through school and regional libraries, the faltering dollar overseas and ideas for combating inflation as published by national research corporations, professional economic publications and the federal government.

V. Evaluation

A. Course

1. Were objectives met through activities planned and implemented?
2. Did students enjoy course as conducted?
3. In what ways should the course be changed?

B. Student

1. The student will demonstrate through activities that he has the basic concepts of supply and demand.
2. The student will through demonstration show that he can identify economic problems and find solutions to them.
3. The student will through participation in simulation activities demonstrate that he understands the investment process.

"CALLING ALL KIDS"

A mini-course designed to give students some insight into the world of production, advertising and marketing.

Glenda Stone
DeKalb County

Mini-course Title: "CALLING ALL KIDS"

Target Group: Grades four through eight

I. Student Objectives

A. Cognitive

1. When offered a choice of working with one other person or in a group of several people, the student will analyze the advantages and disadvantages of working in a partnership and in a corporation, and will state which he prefers.
2. After considering necessary operations of manufacturing, the students within a group will select specific duties of responsibility such as president, purchasing manager, sales manager, market research manager or production manager.
3. After brainstorming ideas for a toy, the group will formulate plans which include diagrams, materials needed, approximate real cost, a prototype, advertising campaign and marketing plan.

B. Affective

1. Students within a partnership or corporation will participate in company decisions and in specifically assigned duties with cooperative spirit and motivation to make the best toy.
2. If ideas formulated are different from his or her own, the student will determine the worth of each one and resolve the conflict with other business members through compromise.

II. Thought Processes to be Developed

A. Cognitive

1. Analysis
2. Synthesis
3. Evaluation

B. Affective

1. Responding
2. Valuing
3. Organizing of values

III. Instructional Materials

- A. Purchase order forms
- B. Supplies for making prototype such as styrofoam, magazines, magic markers, rubber bands, pins, glue, scraps of materials, clay, construction paper, gem clips, butcher paper and paints.

IV. Content

- A. Advantages and disadvantages of partnership and corporations
- B. Sales potential for various ages of children
- C. Materials used in toy manufacturing
- D. Advertising of toys
- E. Marketing methods of various types of dealers
- F. Development of children to determine preference and needs of each age.

V. Questions to be Considered by Students

- A. What type of business to work in to produce type of toy?
- B. What type of toy will have sales potential?
- C. What company positions are needed and what are the responsibilities of each?
- D. What diagrams and plans are needed for the prototype?
- E. What material will be needed?
- F. What should be the cost of the toy to manufacture and what should it be sold for on the wholesale level?
- G. What type of advertising campaign will be most effective?
- H. How will the toy be marketed?

VI. Activities and Strategies

A. Student

1. Each student decides if he wants to work with one other person (a partnership) or in a group (a corporation).
2. Students must remember to agree on each step as they proceed.
3. Each student will assume one or more of the duties of the following company positions: president, purchasing manager, sales manager, market research manager, production manager and any other deemed necessary.
4. Each group will choose a name for their company. (Note: There should be at least two companies working in each class to foster competition.)
5. Groups will brainstorm and evaluate until an idea for a saleable toy is agreed upon. The toy should be for a specific age group and should be an innovative idea.
6. Each group draws a plan which includes size of product, details and materials needed for the prototype.
7. Each group will build a prototype from materials ordered.
8. Each group will plan an advertising campaign that includes cost. (In deciding on a cost, consideration should be given to production costs such as materials used, labor, transportation to market and a profit for the company.) The advertising campaign should be planned for various media.
9. Each group will devise a plan to market their product. This plan should include what retail channels to use (department store, mail order, convenience store, other, how many to produce and the cost per unit in order to make a profit.

B. Teacher

1. Provide supplies when ordered and make suggestions for feasibility of various materials.
2. Give instruction in types of advertising and types of media by which to advertise.
3. Act as a resource for plans in setting up production, planning, advertising and marketing procedures.
4. Invite speakers from local manufacturer, media advertising or marketing firm.
5. Provide instructional materials such as purchase orders and supplies.
6. Generate an atmosphere of competition between companies.

VII. Evaluation

A. Course

1. Students work cooperatively to produce and market innovative toy.
2. Everyone contributes to the process and the product.
3. Each student performs specific duties successfully.
4. Toy with sales potential produced.
5. Advertising and marketing campaigns planned.
6. Toy produced for specific age group of children.

B. Student

1. Toys are original.
2. Toys have eye appeal for children.
3. Toys are safe for children in their age group.
4. Toys are a reasonable price and still allow a profit for the company.

Ads have high motivation for children.

C. Dissemination (Sharing)

1. Product - Prototype of innovative toy for specific age group. Advertising and marketing plans.
2. Process - Group interaction and cooperation as decisions are made.
3. Extending Activities - Possible field trips to newspaper, radio or TV advertising department, manufacturer or department store.

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COMMUNICATION

The purpose of this mini-course is to enrich students' understanding of the history of communication and the graphic arts from the days of oral beginnings to present day automated systems.

Kay Richardson
Richmond County

Mini-course Title: COMMUNICATION

Target Group: Grades four through eight

I. Student Objectives

- A. To provide students with the background knowledge of the methods of communication used by man from the earliest forms to the present day.
- B. To help students develop critical thinking skills and decision-making skills about oral and written propaganda they may confront.
- C. To familiarize students with the history of rare books and printing.
- D. To encourage students to understand, appreciate and use skillfully the communications processes.
- E. To provide opportunities for students to observe various professions involved in communication.
- F. To determine through readings, free discussion of ideas and personal visits to printers and newspapers the meaning of freedom of the press.
- G. To familiarize students with terms used in the communications industry.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Analysis
- E. Synthesis
- F. Evaluation

III. Materials

To enrich this unit a variety of materials need to be used. These include filmstrips, resource persons, field trips, simulation games, crafts and printed materials. Some of the materials are given below. Teachers will need to use materials available in their own area.

Batchelor, J. F. *Communication from Cave Writing to Television*

Foster, G. Allen. *Communication: From Primitive Tom-Toms to Telstar*

Hogben, Lancelot. *Wonderful World of Communication*. Doubleday, 1959.

McCabe, Sybil A. *How Communication Helps Us*.

Neal, Harry E. *Communication from Stone Age to Space Age*.

"Communication," *World Book Encyclopedia*

SVE Filmstrip Word Game #152-2WG, *Getting To Know Books* - Filmstrip Series: Using the Elementary School Library

IV. Content

- A. Definition and early history of communication
- B. Effects of communication
- C. Problems of communication
- D. Modern communication industry
- E. Group discussion
 1. What is communication?
 2. What would a world without communication be like?
 3. Role of government in communication control, regulation, commercials and censorship.

F. Group Dynamics

1. Groups develop system of communication through gestures, pictures, ideographs and alphabetic system of their own devising.

G. Research

1. Communication terms word search.
2. Individual student research on their own chosen area of communication.

H. Creative Activities

1. Linoleum block printing
2. Making (i.e. binding) their own book.
3. Calligraphy - experimenting with lettering, historiated initials.

I. Improvised Games

1. Rebus
2. Decoding messages
3. ESP experiments

J. Field Trips

1. Richmond County Board of Education Vo-Tech Print Shop.
2. Augusta-Chronicle Herald Newspaper.
3. Fort Gordon Computer Center.
4. Fort Gordon Television Production Center.

K. Filmstrips

V. Questions to be Considered by Students

Questions for students to consider are given under Activities and Strategies.

VI. Activities and Strategies

A. Major Activity

Students will select, research and report on one area of communications in which they are interested.

B. What is Communication?

To make students aware of the meaning of communication, ask each student to write down their own definition of the term. Try to work out an acceptable definition on the board such as "a transfer of thoughts and messages from sender to receiver."

Get students to name all the forms of communication they can think of. Urge them to go back to the beginnings of human beings trying to get ideas across to other human beings.

Discuss symbols that stand for ideas, music as a communication media, also mathematics.

Earliest communication

- Pointing
- Grunting
- Smoke signals
- Drums

Pictographs - painting on cave walls, first efforts to make thought or feeling visible, lasting.

Ideographs - symbols representing generalized ideas from objects for instance, ear meant hearing; sun mean day, etc. Chinese ideographic writing today takes twice as long to learn—2,000 characters compared to 26 letters. The Chinese are coming to realize they are handicapped by this cumbersome system of writing and the government has authorized a study to simplify their writing.

Phonetic system

Took several thousand years to develop.

Writing was kept special privilege of priestly and ruling class.

Ancient inscriptions on rocks have helped us learn (Rosetta Stone, Behistun Rock) Baked clay brick-like tablets of Mesopotamia written on with stylus, writing called cuneiform.

Papyrus made in Egypt, used reed pen brush. Papyrus used for 50 centuries.

Parchment-prepared skins of sheep, calves used two centuries before Christ.

More durable, heavier, more expensive than papyrus.

By 4th Century AD this was main writing material in Europe.

Dark Ages - how were really important books saved from barbarians. Monks copied texts by hand, preserved knowledge.

C. Group Dynamics

Student groups develop system of communicating through gestures, pictographs, ideographs and an alphabetic system of their own.

What would a world without communication be like?

Students could form small groups and list everyday communication devices we take for granted. Then they could plan a short talk on how life would be different if we did not have them. Perhaps each group could decide on one device, such as telephone, radio, television, etc. and talk about the effects if that device were suddenly completely gone.

Role of government in communication

What is the difference between government regulation and government control of communication? What about the difference between regulation of communication channels and regulations of the actual content or censorship of material carried through these channels.

Students could look up the role of the Federal Communications Commission, libel and copyright laws, slander, advisory and regulatory commissions within the communications industries themselves, control or regulations of communications industries in other democracies such as Canada and Great Britain and control of communication under a dictatorship.

Could have panel discussions on questions as: How much control or regulation is necessary to make all mass communications media conform to some standards of taste or education? What effect do commercial advertisers have on what we watch on television? What is the responsibility of the public to see that information of all kinds is freely and fully available? What does public service air time mean? Why is "equal air time" for rival political views important? Which media are more highly regulated—broadcasting and telecasting or the press?

Communication terms word search

Use Filmstrip "Getting to Know Books" from SVE series, using the Elementary School Library. Do Word Search and the matching of terms with their definitions. Copy attached in appendix.

D. Research

Each student should determine which area of communication he would like to learn more about and begin to see what sort of information is available for his oral report.

E. Creative activities

Linoleum Block Printing - need roller, wood blocks with linoleum glued on them, printing ink, knives or chisel-type instruments. It is possible to use styrofoam (such as meat is packages on in the grocery) and draw pattern with pencil or ball point pen. This prints well and is easier to handle in general.

VII. Evaluation

A. Course

1. Were major objectives reached?
2. Did the course require student involvement?

B. Student

1. Can students now converse with others concerning communication methods?
2. Are students better able to express themselves orally?
3. Can students demonstrate improved group discussion skills?
4. Determine evaluation standards for research project to be done and evaluate project accordingly.

PYRAMID POWER

A mini-course designed to give students an opportunity to examine some of the unexplained phenomena concerning pyramids.

Rationale

Acclaimed as the foremost of the Seven Wonders of the Ancient World, pyramids have been the source of raging controversy and debate fascinating scientists, philosophers and venturesome men of all ages. Historians say the pyramids were built by slaves simply as tombs to house their dead pharaohs. No written record exists, however, proving this.

There are numerous unexplained phenomena concerning pyramids, their construction, their acclaimed source of energy, the amazing powers and strange effects of their shape on physical objects and the time and geographic setting of their origin. How is it possible that so many sciences, mathematics, history, physics, optics, astronomy, hydraulics and perhaps magic! — are involved in the marvelous structure called The Great Pyramid is phenomenal.

Patricia Brady
Clayton County

Mini-course Title: PYRAMID POWER

Target Group: Grades four through eight

I. **Student Objectives**

A. **Cognitive**

Students will

1. define the term pyramid;
2. list five phenomena concerning pyramids;
3. collect data on pyramids;
4. construct a model of a pyramid;
5. reproduce drawings of pyramids from different angles;
6. categorize the problems relating to the construction of an ancient pyramid;
7. compare the effects of the pyramid's shape on physical objects;
8. hypothesize explanations for the construction of the pyramid other than use as a tomb;
9. interpret the data from their experiments and classify it as myth versus reality.

B. **Affective**

Students will

1. imagine life as it existed in the year 2600 B.C.;
2. decide individually how pyramids were built.

II. **Thought Processes to be Developed**

- A. Decision making
- B. Logical thinking
- C. Creative expression
- D. Knowledge

III. **Instructional Materials**

A. **Books and Articles**

Smith, Warren. *The Secret Forces of the Pyramids*. Kensington Publishing Corp., (Zebra Books).

Valentine, Tom. *The Great Pyramid: Man's Monument to Man*. New York: Pinnacle Books.

"Abu Simbel's Ancient Temples Reborn." *National Geographic*, May 1969.

"Ancient Egypt - Grandeur of Empire." *Life*, May 1968.

"The Marvels of Egypt's Past." *Life*, April 1968.

"Dzibilchallun: Lost City of the Maya." *National Geographic*, Jan. 1959.

Flanagan, Patrick. *The Pyramid and its Relationship to Biocosmic Energy*.

(Pat Brady, SCORE teacher, has slides, artifacts and a picture file)

B. Films

Classroom Teaching Films for Georgia

Nile River Valley and the People of the Lower River #4483

Egypt Yesterday #4648

Six Faces of Pharaoh #4700

Clayton County Libraries

(Flint River) *Egypt: Land of Antiquity* #CC37

The Atlanta Public Library

Egypt - civilization c

Egypt - civilization - To 332 B.C. ss

Egypt - History c

Primary and Intermediate Films

The Visual Aids Service of the University of Illinois

Egypt - Yesterday \$4.95 #50041

C. Other Materials

1. Encyclopedias
2. National Geographic magazines that may be available
3. Travel agencies
4. Egyptian Embassy in Washington, D.C.
5. Smithsonian Institute

IV. Content

1. Life of the pharaohs
2. Seven wonders of the Ancient World
3. American pyramids
4. Pyramids
5. Future energy source
6. Architecture (beginnings); geometry; Indian and American
7. The relationship of pyramids to their geographical locations
8. Archaeology
9. Embalming
10. Mummies and tombs
11. Immortality
12. Engineering
13. Maya (the arts)
14. Mexico
15. Mythology
16. The Great Ennead
17. Hieroglyphics (pyramid texts)
18. Battle of the pyramids
19. Age of the pyramids
20. King Tut

V. Questions to be Considered by Students

1. What is a pyramid?
2. Where can pyramids be found?
3. When were they built?
4. How were they built (generally)?
5. For what purposes were they used?
6. What are inferences one can draw from this study?
7. How can we benefit from the knowledge gained from this study?
8. If you were building a pyramid for yourself what would you want to put in it?
9. What do you think your life would be like if you were living in year 2600 B.C.?
10. What effect do you feel pyramids and the life reflected in them have had on your life today?

VI. Activities and Strategies

A. Students

1. Prepare a list of available information in school library.
2. Research information on pyramids.
3. Construct model pyramids.
4. Write a scenario - 2600 B.C.
5. Discuss unexplained phenomena related to pyramids.
6. Prepare a project in an area of interest related to the study of pyramids.
7. Conduct experiments on the effect of the pyramid's shape on physical objects.

SCENARIO: YOU ARE THERE! YEAR 2600 B.C.

Name _____ Date _____

School _____ Age _____

You have probably thought about what life in the past was like. You have doubtless thought what it was like without the knowledge and skills that humans now have. It is hard to imagine life without our modern conveniences, and yet, look what the Egyptians accomplished without them!

Imagine that it is now the year 2600 B.C. and write a scenario of a day or week in your life as it might have occurred in the year 2600 B.C. A scenario is simply a description of a sequence of events that might possibly have happened. A scenario is usually developed by studying the facts of a situation, selecting a development that might have occurred and imagining the range and sequence of events that might have followed. Use the facts that you now have about yourself, the ways you might have been had you lived in the year 2600 B.C., technology and society as it was then and try to describe a specific day or week as it might have been.

In writing your scenario, use the present tense and perhaps the future tense and *not* the past tense. Imagine that the past is here - now. Your scenario should reflect what you have accomplished, what kind of life you are living and what you have produced.

B. Teacher

1. Oral introduction
2. Give film or slide presentation
3. Arrange for resource person (if available)
4. Stimulate discussions
5. Provide reference materials
6. Introduce related topics and independent study suggestions

VII. Evaluation

A. Course

1. Interest demonstrated by students
2. Projects completed
3. Did course do what it was intended to do?
4. Were objectives met?

B. Students

1. Interest demonstrated
2. Participation in experiments and discussions
3. Utilization of research skills
4. Construction of model pyramid
5. Completion of independent study and its quality
6. Follow through activities

POETRY AND POP MUSIC

**A study of poetry and music with emphasis on recognizing
rhythmic patterns, simple meter and figurative language.**

Cobb County Teachers

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Mini-course Title: POETRY AND POP MUSIC

Target Group: Grades four through twelve

I. Student Objectives

A. Cognitive

Students will recognize

1. rhythm patterns and simple meter;
2. simple poetry forms - free verse, diamantes, cinquines, haikus;
3. the basic similarities and differences in figurative language in poems and figurative language in song lyrics.

B. Affective

Students will develop

1. an enjoyment for poetry and music;
2. fluency in using figurative language in conversation and writing.

II. Thought Processes to be Developed

- A. *Knowledge* - What is the poet or composer writing about? List all of the words that rhyme in the poem or song.
- B. *Comprehension* - In your own words, tell what the poem or song means.
- C. *Application* - How can you change the rhythm in the poem or song? How can you change the metaphor to a simile?
- D. *Analysis* - What words does the poet or composer use to describe his or her mood?
- E. *Synthesis* - Write your own poem or song using a simple rhyme pattern.
- F. *Evaluation* - Decide which poem or song you like best.

III. Instructional Materials

- A. Overhead projector and transparencies of poems
- B. Ditto sheets of song lyrics
- C. Tape recorder
- D. Records
- E. Filmstrips "Understanding Poetry" (McGraw Hill Films)
- F. *Wishes, Lies and Dreams* - Kenneth Koch
- G. *Favorite Pop/Rock Lyrics* - edited by Jerry Walker
- H. *Potato Chips and a Slice of Moon* - selected by Lee Hopkins and Misha Arenstein

IV. Content (Topics to be Studied)

A. Poems

1. "In Just" - e. e. cummings
2. "The Congo" - Rachel Lindsey
3. "Jazz Fantasia" - Carl Sandburg
4. "The Fog" - Carl Sandburg
5. "Paul Revere's Ride" - Henry Wadsworth Longfellow
6. "The Raven" - Edgar Allen Poe
7. "Pied Piper" - Robert Browning
8. "Early Spring in the Blackberry Patch" - Robert Froman

B. Songs

1. "Back Home Again" - John Denver
2. "The Rock" - Simon and Garfunkle
3. "Bridge over Troubled Water" - Simon and Garfunkle
4. "Natural Woman" - Carol King
5. "You Light Up My Life" - Debbie Boone
6. "Annie's Song" - John Denver
7. "We Will Rock You" - Kiss
8. "Big Yellow Taxi" - Joni Mitchell

V. Questions to be Considered by Students

- A. What distinguishes poetry from prose?
- B. How are the rhythms in poetry and music similar?
- C. What are the similarities in the figurative language in specific poems and songs?
- D. Note other questions under thought processes.

VI. Activities and Strategies

A. Teacher

1. Lead discussions and brainstorming sessions.
2. Tap out rhythms.
3. Stimulate ideas for group writing.
4. Read poetry expressively.

B. Students

1. Brainstorm definitions of poetry.
2. Read and listen to poems and popular songs.
3. Tap out rhythms to poems and songs.
4. Experiment with rhyming combinations.
5. Create original figures of speech.
6. Compose original poems and song lyrics.

VII. Evaluation

A. Course

1. Were objectives achieved?
2. Did students enjoy the course?
3. Informal student evaluation.

B. Students

1. Informal student evaluation of work written.
2. Student original and creative works evaluated with positive and encouraging comments.

ARCHAEOLOGY EXPEDITION

**This unit shows how to create a model excavation site
and then shows the procedures in uncovering artifacts.**

**Nancy Johnson
Lowndes County Schools**

Mini-course Title: ARCHAEOLOGY EXPEDITION

Target Group: Grade five

I. Student Objectives

A. Cognitive

The gifted student will research archaeological techniques of selecting sites, excavation procedures, and methods of dating artifacts.

B. Affective

The student will suggest methods artifacts were used and probable life styles they reflect.

C. Psycho-Motor

The student will excavate in a model site until an artifact is located.

II. Thought Processes to be Developed

Cognitive memory (the research process)

Convergent thinking (the deductive reasoning involved in the interpretation of the evidences found in the excavation)

Divergent thinking (the various ways the tools or artifacts could be useful to the past culture being studied)

III. Instructional Materials

A. Clean sand dirt and clay

Screen - (12" x 12" at least)

Pottery slip (½ gallon)

Rome made artifacts (e.g. broken pieces of clay pots, glass beads, miniature animals and dolls, bones and shells, pieces of flint, burnt pieces of wood, rocks, etc.)

Display board and Grid map board (cardboard will do)

Tools for excavation: toothbrushes, toothpicks, nut picks, dull knives, etc.

String and stakes (¼" dowel)

B. Printed Materials

Potterfield, James E. and Carol E. Austin. *The Development of Man and His Culture: Old World Prehistory*. Athens, Ga.: University of Georgia Anthropology, Curriculum Project, March 1966.

Abbott, Verlin M. *Mapping (Earth Science Series)*. St. Louis, Mo.: Milliken Publishing Co., 1971.

Byrne, Robert. *Prehistoric Man*. St. Louis, Mo.: Milliken Publishing Co., 1969.

Barnouw, Victor. *An Introduction to Anthropology. Physical Anthropology and Archaeology*. Homewood, Ill.: The Dorsey Press, 1971.

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IV. Content

1. Selection of sites for excavation
2. Excavation procedures
3. Dating techniques
4. Interpretation of artifacts
5. Recording locations on a grid

V. Questions to be Considered by the Students

1. What are some of the evidences used in determining a particular site?
2. How is the information recorded when an artifact is found?
3. What does the grid plan signify, and how does it relate to the world?
4. What are some of the dating techniques used by archaeologists?
5. From evidence found, what seemed to be the type of culture and level of civilization involved?

VI. Activities and Strategies

1. Research and investigate reading of material.
2. Make a booklet to include materials issued and work accomplished.
3. Display pictures of (a) evidences of an excavation site, (b) examples of an excavation in progress, (c) art work of the type of culture under study.
4. Construct a model of an excavation and proceed to expose it as an archaeologist would.
5. Record finds on map grid and label the artifact.
6. Write a paragraph describing the evidence and inferences of its use.
7. Study dating techniques and apply them to the model.
 - a. Dendrochronology - use pieces of two tree trunks to show overlapping techniques.
 - b. Varve analysis: use different colored dirt or sand in model to emphasize layering.
 - c. Radioactive Carbon: Explain theory involved.
8. Make a model of an excavation site with dirt, sand, and "artifacts."
9. Excavate model, record locations on grid maps, and descriptive accounts to match grids.
10. Take a field trip to (a) a University of Georgia Anthropology Department, (b) Ocmulgee Park, (c) an excavation site (if fortunate enough to be near one).

VII. Evaluation

Evaluation of knowledge learned will result from drawings made of: (a) evidences of sites, (b) art work of type of culture, (c) possible dendrochronology examples.

The booklets will reveal the area each student emphasizes, e.g. art, research material, and recorded findings.

Interest is always high when students excavate the model. Emphasis is placed on taking care to expose only one artifact at a time and recording its position accurately on the grid map.

Discussions of cultural behavior drawn from artifacts are expressed in writing exercises. This is where the student can really express his creativity.

Field trips can be used as the conclusion of the unit if one is fortunate enough to be near a site.

HOW TO MAKE A MODEL MOUND

An old wooden table turned upside down is a very good container for the model. Place it on cement blocks or another table if available. Spread sheets of plastic on the bottom to keep moisture from harming the wood.

The bottom layer of dirt should be flat and cover the entire area. The second layer could be sand mixed with pottery slip to promote hardening. Artifacts should be added while soil is moist.

A thin layer of clay or dark soil should be scattered over this layer (about $\frac{1}{4}$ to $\frac{1}{2}$ " deep.) Artifacts can be placed in this layer also. To be very exact, burnt ashes and match sticks could be put in a pile to represent a fire site. Eggs shells broken into little mounds can be imitation sea shells. Chicken or beef bones can be burials (also miniature plastic dolls or animals).

The grid map and descriptive chart should be placed beside the mound. No artifact should be removed from its origin until recorded on both the map and chart.

Stakes should be placed every three inches on the sides of the mound. Strings are left loose while excavating, but when an artifact is found, are laid across the mound to find proper coordinates.

It is easy to use letters of the alphabet down the side of mound and numbers across the top. This will result in locations, such as A-2, D-5, etc.

Layers of the sand and dirt can be added until about 10 to 12 inches high. Artifacts can be added at any time. (Older inferred ones should be on the bottom.)

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ARCHITECTURE

A unit in which the students combine mathematics and mechanical drawing with the aesthetic consideration of architecture to create a room or house of their dreams.

**Kathleen Kennedy
Clayton County Schools**

Mini-course Title: ARCHITECTURE

Target Group: Grades five through eight

I. Student Objectives

A. Cognitive

Students will

1. answer - What is an architect? What skills must an architect acquire?
2. read architectural plans and state them in verbal form.
3. estimate the cost of materials for a design after gathering information such as room dimensions.
4. draw conclusions concerning a design. Is it practical? appealing?
5. suggest logical placement of vents, electrical outlets, lighting fixtures, telephone jacks, closets, doors, windows, etc.
6. list problems to be considered in planning a house.
7. draw a room to scale. List steps in constructing a model room.
8. determine what was good about his own design; what would have made it better.

B. Affective

Students will

1. create a "room or house of their dreams."
2. demonstrate the proper use of architectural tools - compass, t-square, etc.
3. relate what makes a pleasing design (interior).

II. Thought Processes to be Developed

- A. Knowledge
- B. Translation
- C. Interpretation
- D. Extrapolation
- E. Application
- F. Analysis
- G. Synthesis
- H. Evaluation
- I. Decision making
- J. Logical thinking
- K. Creative expression

III. Instructional Materials

A. Books

Devlin, Harry. *To Grandfather's House We Go - A Roadside Tour of American Homes*. New York: Parents Magazine Press.

Gill, Robert W. *Van Nostrand Reinhold Manual of Rendering with Pen & Ink*. New York: Van Nostrand Reinhold Co., 1974.

Hamlin, ADF. *A History of Architecture*. New York: Longmans, Green & Co., 1960.

Meinhart, Carl and Carolyn; Nourse, Alan E. *So You Want To Be An Architect*. New York: Harper & Row, 1969.

Syphers, Dorothy. *Gifted and Talented Children: Practical Programming for Teachers and Principals*. The Council of Exceptional Children, 1972, pp. 27-28.

Towsend, Gilbert. *How to Plan a House*. Chicago: American Technical Society, 1958.

Whiffin, Marcus. *American Architecture Since 1780*. Cambridge: MIT Press, 1969.

B. Other

1. Graph paper
2. Rulers
3. Pencils
4. Scissors
5. Cardboard cutter
6. Large sheets of poster board
7. Construction paper
8. Compasses
9. Sample floor plans
10. Duplication materials from text books (scale drawing activities, etc.)

C. Magazine

1. Architectural journals
2. *Atlanta Now and Then* - A Guide to 19th Century Atlanta Architecture (photos - tour)
3. *Brown's Guide to Georgia* Jan/Feb 1977 appx. 10 pages

Inside Guide to Architecture

Local Preservation Activities

Renovating Old Homes

IV. Content

- A. History of architecture
- B. Scale drawing
- C. Logic
- D. Vocabulary
 1. ratio
 2. elevations
 3. estimation
 4. measurement
- E. Geometry
- F. Mechanical drawing
- G. Interior design
- H. Comparisons of architectural styles
- I. Study of famous architects
- J. Solar heating
- K. Landscape design
- L. Different periods of architecture

V. Questions to be Considered by Students

- A. What type of arrangement works best for a house - room?
- B. How can steps be saved?
- C. Who are some of our famous architects? Why are they successful?
- D. What geometric shapes are most often used in architectural designs? Why?
- E. What would be the most logical placement of vents, jacks, outlets, etc.?
- F. How does interior design factors effect architectural style?

VI. Activities and Strategies

A. Teacher

1. Oral introduction and discussion.
2. Arrange for a resource person.
3. Arrange for a visit to an architect's office, if possible.
4. Demonstrate the proper handling of tools.
5. Direct examination and discussion of a set of floor plans.
6. Discuss logical planning of objects listed earlier.
7. Arrange for community resource people to work with the students.
8. Arrange for architectural tours.

B. Student

1. Plan what he or she wants to accomplish.
2. List problems to be considered in planning a house or room. Demonstrate an ability to read floor plans.
3. Draw a room to scale including windows, doors, furniture, etc.
4. Estimate cost of materials such as paint, lumber, etc.
5. Construct a model of their design.
6. Verbally relate what they have gotten from the course . . . what would have made it better; what was good about it?
7. Interview community resource people.
8. Make architectural tours.

VII. Evaluation

A. Course

1. Were the students' objectives met?
2. What was accomplished?
3. Was the teacher organized, flexible and enthusiastic about the topic?

B. Student

1. Did the student plan own objectives?
2. Did he follow a logical plan toward reaching his goals?
3. Did he participate willingly?
4. Did he work well with others? independently?

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PROBLEM SOLVING

A mini-course designed to aid students in developing problem solving strategies that will enable them to solve any given problem.

**Pam Lewis
Glynn County Schools**

Mini-Course Title: PROBLEM SOLVING

Age Group: Middle school

I. Student Objectives

A. Global Objective

Students will learn strategies for problem solving and be able to apply them to any given situation.

B. Instructional Objectives

Students will

1. define the problem;
2. gather facts pertinent to the problem and restate it for attack;
3. brainstorm possible alternatives to the problem;
4. develop criteria for evaluating the alternatives;
5. evaluate alternatives using appropriate criteria.

II. Thought Processes to be Developed

- A. Brainstorming
- B. Knowledge gathering
- C. Application of knowledge
- D. Evaluation of data
- E. Elaborative thinking
- F. Analyzation of data
- G. Synthesis

III. Instructional Materials

Effective Thinking. White Plains, N.Y.: The Center for Humanities, Inc., 1977.

Elaborative Thinking. Newton, Mass.: Curriculum Associates, Inc., 1971.

Myers, R. E. and E. Paul Torrance. *Invitation to Thinking and Doing.* Atlanta: Ginn and Co., 1964.

Osburn, Alex F. *Applied Imagination.* New York: Charles Scribner, 1963.

Sherlock Holmes Mysteries

Stockton, Frank. *Lady or the Tiger.* Teaneck, N.J.: Somerset Publishers.

Torrance, E. Paul and J. Pansy. *Is Creativity Teachable?* Bloomington, Indiana: Phi Delta Kappa Educational Foundation, 1973.

Torrance, E. Paul, Sandra Williams and J. Pansy Torrance. *Handbook for Teaching Future Problem Solving.* Athens, Ga.: University of Georgia, Augst 1977.

IV. Activities and Strategies

(This section incudes content and questions to be considered by students.)

Strategies (teaching/learning)

Objectives I & II

A. Ask students to list at least five problems which relate to school or their personal lives which they would like to solve. The teacher may wish to stimulate their thinking by surgesting some possible problems or desires.

1. to lose weight
2. to become accepted as a member of certain clique

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3. to obtain certain weekend privileges at home
4. to stop littering on the school campus
5. to improve school lunches

Once the problems have been listed, students are asked to save them for later use. The focus here is on identifying problems.

- B. Read "The Lady or the Tiger" by Frank Stockton to the students. Have students divide into small groups (3 or 4) and ask each group to identify the problem presented in the story. Have groups compare answers. Instruct groups to list as many facts as they can recall from the story which led to their identifying the problems.

Groups should be monitored to insure a differentiation between fact and opinion. Groups should re-state the problem based on facts they listed. Does the re-statement coincide with the original? Make point about gathering facts in order to properly identify problems.

- C. Students choose a problem situation from their original list (Strategy A) and write down all the facts they can collect pertinent to the problem. Based on the facts gathered, the students should re-state the problem for attack.
- D. Assign a Sherlock Holmes mystery story to be read by the students. Discuss the process used by Holmes in solving the mystery. Make sure that students note the importance of gathering facts.
- E. In small group arrangements, give students practice situations for additional training in identifying problems for attack. (The *Handbook for Training Future Problem Solving Teams*, August 1977, by E. Paul Torrance, Sandra Williams, and J. Pansy Torrance gives excellent practice situations for this purpose. pp. 14, 15)

Refinement

Alex F. Osburn in *Applied Imagination* (Scribner, 1963) developed the process. He uses a classroom type set-up with a leader who clearly states the problem and then asks his participants to make any suggestions that seem relevant. During this free association response, **nothing** is rejected or criticized; every suggestion is written down for later evaluation. This rule should be strictly enforced when brainstorming alternative solutions to a problem.

Objective III

Brainstorming is perhaps the single most crucial aspect of effective problem solving. The more practice that students have in brainstorming, the better!

Strategy A

Use as many different ideas as possible to engage students in timed brainstorming sessions.

Example— In five minutes, brainstorm as many different uses as you can think of for a stock.

Curriculum Associates publishes *Elaborative Thinking I & II* which give situations for brainstorming. These materials encourage unusual responses. Students receive a single point for each response listed and two points for each unique response.

Example (Card 26)

Alone and pursued by a pack of hungry wolves, Chris finds himself trapped. Ahead of him is an expanse of quicksand; to one side are the impassable walls of a cliff, and to the other side, a swift-moving river he cannot swim. The wolves are closing in.

What might Chris do?

Card responses (1 point each)

1. Climb a tree
2. Build a raft
3. Yell for help
4. Throw rocks at the wolves
5. Make a fire
6. Commit suicide
7. Camouflage himself
8. Sharpen a twig for a knife
9. Swing over the river on a vine

Strategy B

Divide the class into small groups. Give each group a sheet of paper on which is written this problem:

Why should it take a 3000 pound car to drive a 120 pound woman one mile to buy a one pound loaf of bread?

Ask each group to pretend they are auto manufacturers and have been presented with this problem. Ask them to brainstorm individually for 10 minutes to find possible solutions to the problems. When they have finished, have them share results. At the end of the period, mention that it has been alleged that the question they were given was instrumental in bringing about the designing of the first compact car in the U.S. (Taken from *Effective Thinking, The Center for Humanities, Inc.*, White Plains, N.Y. 10603)

Objectives IV & V

Evaluation is a difficult step to teach. The first step is teaching students to choose criteria to evaluate alternatives that are relevant to the problem. Torrance (Handbook, 1977, pp. 18-19) suggests an excellent example for teaching students to choose relevant criteria. He suggests posing the problem of what bicycle to buy. Have the class suggest several different makes. Next ask them to suggest standards by which to judge the different makes. (e.g. weight, cost, maintenance, extra features, etc.)

Consider each make of bicycle in terms of each standard or criteria. Torrance suggests using a grid:

Criteria					Scale 10—Best 1—Poorest
Alternatives	Weight	Cost	Maintenance	Extra Features	Total Points
Raleigh					
Schwinn					
Sears					
Western Auto					
AMF					

GRID FOR EVALUATING ALTERNATIVES

Alternatives are listed along the vertical axis and criteria are listed across the horizontal axis. Starting with the first criterion in the first column, all of the alternatives are assigned a rank order from one to ten, with one's being poorest and ten's being highest. After the first column is completed, the second criterion is applied and so on. Once each criterion has been applied, the numbers are added up across the grid to give one number (total) to each alternative being evaluated.

The alternative with the highest total is judged the best.

Strategy

Give the students the following problem (NASA):

Problem:

Your rocket has crashed 200 miles from Moonbase Theta (constructed in 1999) on the dark side of the moon. Fortunately, no one is hurt and your insulated, pressurized space-suits aren't damaged. However, most of the equipment and supplies that were carried on board the ship have been destroyed. You must set out on foot for the moonbase which is a four day hike away. It is important to decide which of the remaining supplies would be most useful to carry along.

Supplies Not Destroyed in the Crash

1. A book of matches
2. Food concentrate
3. 50' of nylon rope
4. Two 100 lb. tanks of oxygen
5. A stellar map
6. Five gallons of water
7. Signal flares
8. A silk parachute
9. A first-aid kit
10. A solar powered FM receiver-transmitter that has a range of approximately 100 miles.

Moon Facts Needed for Decision Making

1. The surface gravity of the moon is one-sixth that of earth.
2. There is little oxygen and no controlled temperature on the moon's surface.
3. On the lighted side, temperatures reach 212° F. On the dark side, they go down to minus 243° F.
4. The moon is mostly desert. There is no food or water.
5. The terrain is rocky; there are also a great number of craters.

Have students choose five criteria that they think would help them best evaluate the survival value of these items. Using a Torrance grid, apply each criterion to each supply, using a scale from one (poorest) to 10 (best).

After totaling the scores of each item, use the totals to rank the items in order of value, from most important to least important, with those having the largest total number of points being considered most important.

Have them compare their rankings with NASA's actual rankings

1. Two 100-pound tanks of oxygen
2. Five gallons of water
3. A stellar map
4. Food concentrate
5. A solar-powered FM receiver-transmitter that has a range of approximately 100 miles.
6. 50 feet of nylon rope
7. A first-aid kit
8. A silk parachute
9. Signal flares
10. A book of matches

V. Evaluation

Evaluation is built in with each strategy suggested. It is recommended that students complete the problem solving process initiated in strategies for Objectives I and II. If they are successful in solving their problem situations using the alternative they determined to be best for the circumstances, you've *really* succeeded!

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CYCE—A STUDY OF LIFE AND DEATH

This mini-course deals with what a life/death cycle is, who is affected by death, when does death actually occur, where do we go after death, how can death occur and why must we die.

**Eloise S. Wolfersteig
Bibb County**

Min-Course Title: CYCLE—A STUDY OF LIFE AND DEATH

Target Group: Middle school

A study of the life/death cycle will allow students to better understand the real world. The experiences which the students encounters during this course will supply coping skills necessary to understand death as a natural phenomenon.

I. Student Objectives

Students will demonstrate the ability to distinguish between causative and contributory data with 85 percent accuracy. Give a life/death cycle involving two alternatives, students will formulate and defend a procedural method by which he or she arrive at this tentative decision. Students, having made a decision, are presented additional evidence, and is then willing to reconsider and reformulate the decision. Given a situation involving three variables, students will formulate a response which is factually correct based upon experimental evidence.

II. Instructional Materials and Resources

A. Resource people—Senior citizens, clergy, college philosophy professor, medical doctors and pathologists, mortuary owners, lawyers, a medium, cemetary attendants or people who have had close encounters with death.

B. Field trips (with parental permission only): To a cemetery, to a mortuary, to a morgue, to a memorial stone cutter, to a Home for the Aged.

C. Books

Moody, Raymond A. Jr. *"Life After Life."* Harrisburg, PA: Stackpole Books, 1976.

Gillon, Edmund Vincent, Jr. *Early New England Gravestone Rubbings.* Magnolia, MA: Peter Smith Publishers, Inc., 1966.

O'Malley, Celia. *Look Out For Churches.* London: Victoria and Albert Museum, 1977.

Weitzman, David. *My Backyard History Book.* Covelo, Calif.: Yolla Bolly Press, 1975.

Underfoot: An Everyday Guide to Exploring the American Past. New York: Scribner's 1976 (author unknown)

D. Magazine Articles

Jones, Pam, "When You Lose Someone You Love." *Seventeen*, May 1978.

"Watch Out For Cemeteries." *Art to Zoo.* Washington, D.C., Smithsonian, October 1977.

Bondurant, R. Lynn Jr. "A Grave Situation." *Instructor*, April 1977, pp. 110-14.

(For additional resources, see Bibliography at end of course.)

III. Content and Questions to be Considered by Students

Learning what a life/death cycle is; who is affected by death; when does death actually occur; where do we go after death; how can death occur; and why must we die?

A. Units

Basic concepts — Each category of matter has a life/death cycle.

- What is a life/death cycle?
- Who is affected by life/death cycles?
- When is a person legally dead?
- Where in world is longevity more pronounced?
- How does death feel?
- Why must we die?

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B. Relations

Basic Concept — Life/death cycles are variable.

- What is variable?
- Who have varied life/death cycles?
- When in human history have life/death cycles been different?
- When life/death cycles vary.
- How do some people manage to live longer?
- Why can't other people extend their life/death cycles?

C. Classes

Basic concept — There are many classifications of death modes: accident; terminal disease; homicide; suicide; worn-out cells from aging.

- What is a death mode?
- Who is legally and morally responsible for death?
- When is a cell worn out?
- Where are certain death modes prevalent?
- How do we deal with legal consequences of death?
- Why must we make some moral decisions concerning death?

D. Systems

Basic concept — Each culture has devised systematic plans for dealing with death.

- What are some systematic plans for dealing with death?
- Who are the people whose careers are connected with death and dying?
- When in history have people used other systems of dealing with death and dying?
- Where in the world are these systems different from ours?
- How do our systems deal with death and dying?
- Why is it important to understand the way these systems work?

E. Transformations

Basic concept — Life to death is a transformation

- What is a transformation?
- Who performs these transformations?
- When can a transformation not occur?
- Where are these transformations presently taking place?
- How do these transformations take place?
- Why are there negative feelings concerning these transformations?

F. Implications

Basic concept — Is death the ultimate finality or can death lead to a new life/death cycle?

- What are some current thoughts about the implications of death—life/death cycle?
- Who are the current writers dealing with these thoughts?
- When can we expect to experience this state ourselves?
- Where could we live with this new life/death cycle?
- How would our life styles change should we experience this transformation?
- Why would it be necessary to provide controls over such a transformation?

IV. Activities and Strategies

1. Collect data from cemetery survey about people's lives in the past.
2. Make scrapbook of cemetery rubbings.
3. Obtain copy of Bibb County Birth/Death Certificates.
4. Visit law office and collect blank copies of a Georgia will.

5. Make a collection of cemetery gravestone art.
6. Make poetry book of epitaphs.
7. Trace your own ancestry by collecting information about your family.
8. Make a family album with photos of your relatives and their graves.
9. Keep a log recording the life/death cycle of a plant.
10. Read about people in the world who live longest.
11. Make a graph of death causes in Bibb County during a specific year.
12. Research terminal disease such as cancer. Why is cancer called a disease of the 20th century?
13. Write a short story about life on this planet should there be no life/death cycle.
14. List all of the ways human remains can be disposed of in a dignified manner.
15. Log the propagation of a one-celled animal.
16. Collect readings about cloning.
17. Make a scrapbook of the ideas about death held by at least five different people.
18. Discuss the life to death transformations found in the schoolyard.
19. Discuss fantasy writings about the possibility of regenerating humanity.
20. Read and discuss the book *Life After Life* by Moody.
21. Make a graph of average life spans in Bibb County during the past 75 years.
22. Make a graph of the countries of origin of people who died during the past 75 years.
23. Take a poll of the people in your class to find out how they feel about dying.
24. Make a graph of the death modes of people in Bibb County during the year 1976.
25. Research the clinical definition of death and interview someone who has had a close to death encounter.

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- Living with Dying* (2 filmstrips, 2 lps/cassettes, student activity cards, teacher guide). Available in slides. Sunburst Communications. Pound Ridge, NY 10576
- Perspectives on Death: A Thematic Teaching Unit* (2 strips, 4 cassettes, student activity book. P. O. Box 213, Dekalb, Ill. 60115

Books

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- Asinof, Eloit. *Craig and Joan, Two Lives for Peace*. Dell paperback, 1973.
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- Miles, Miska. *Annie and the Old One*. New York: Viking Press.
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SOLAR POWER

**A mini-course designed to aid students in investigating
the energy problem and the use of solar power.**

**Mrs. Lloyd Flanders
Glynn County**

Mini-course Title: SOLAR POWER

Target Group: Grades five through eight

I. Student Objectives

A. Cognitive

To discover how the sun can be used as a source of power

B. Affective

To foster concern about our dwindling energy reserves and to encourage both conservative and new technological discoveries

II. Thought Processes to be Developed

A. Interpretation

B. Exploration

C. Application

D. Analysis

E. Comparison

F. Evaluation

III. Instruction Materials

A. Equipment

1. Miniature solar power plant
2. Solar cooker

B. Books

1. Kreider, Jan F. and Frank Kreith. *Solar Heating and Cooling: Engineering, Practical Design, and Economics*. Washington, D.C.: Hemisphere Publishing Corporation, 1975.

C. Federal Pamphlets

1. *Buying Solar* FEA/G-76/154 June 1976
2. *Eleven Ways to Reduce Energy Consumption and Increase Comfort in Household Cooling* Stock Number 0303-0876
3. *Home Mortgage Lending and Solar Energy* HUD-PDR-218 March 1977
4. *The National Energy Plan* Stock Number 040-000-00380-1 April 29, 1977
5. *National Program for Solar Heating and Cooling of Buildings* ERDA 76-6 November 1976
6. *Solar Cooling for Buildings - Workshop Proceedings* NSF-RA-N-74-063 February 6-8, 1974
7. *Solar Energy as a National Energy Resource* NSF-RA-N-73-001 December 1972
8. *Solar Program Assessment: Environmental Factors* ERDA 77-47/5 March 1977

D. Periodicals

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2. Britton, Peter. "World's Most Advanced Solar Home." *Popular Science*, July 1977, pp. 92-96.

3. Commoner, Barry. "For A New Energy Policy." *Current*, Vol. 191, March 1977, pp. 17-22.
4. Gilmore, C. P., "When, Not If, Is Now Key to Solar Power." *Science Digest*, Vol. 81, March 1977, pp. 42-45.
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IV. Content (Topics to be Studied)

A. Solar Power

V. Questions to be Considered by Students

- A. How does it work and what things can it be used to power?
- B. How much power does it give?
- C. Where can it be used?
- D. Does it use chemicals? If so, which ones?
- E. Is it used in other parts of the world? How?
- F. How much sunshine is needed per day?
- G. How much power does it give?
- H. How much would it cost to install in your home?
- I. How much money would it save?
- J. Is it good for your health, or can it affect you in any way?

VI. Activities and Strategies

A. Student

1. Cook something with solar energy
2. Run a motor with solar energy
3. Heat with solar energy
4. Make posters

B. Teacher

1. Plan a field trip to local places using solar energy.
2. Arrange for lectures and demonstrations by local resource people in the solar field.

VII. Evaluation

A. Course

1. It will illustrate that the sun's power can be harnessed and used by man. Limitations will be recognized and "far out" uses may be projected.

B. Student

1. The students will demonstrate that he or she recognizes the resource of solar power and anticipates its greater use in the future.

RHYTHMS AND TIME

**A mini-course designed to aid students in understanding
the rhythms of life.**

**Marguerite Owens
Carrollton City Schools**

Mini-course Title: RHYTHMS AND LIFE

Target Group: Grades five through eight

I. Student Objectives

A. Cognitive

The student will

1. become fluent in the use of biological words;
2. form hypotheses;
3. test hypotheses;
4. recognize difficulties in studying human rhythms.

B. Affective

The student will

1. experiment with bioclocks;
2. become aware of bioclocks in various life forms;
3. appreciate and understand the rhythmical nature of like processes;
4. understand the two main hypotheses about bioclocks.

II. Thought Processes to be Developed

1. Observation
2. Analysis
3. Interpretation
4. Evaluation
5. Hypothesizing
6. Flexibility
7. Originality

III. Instruction Materials

1. Carousel projector
2. Slide presentation — Bioclocks and the Rhythms of Life, Center for Humanities.
3. The Insects: How to Know Them
4. How to Know North American Birds
5. Fruit flies, feed and containers
6. Kalanchoe plants, poinsettias, petunias and day lilies
7. Dark box
8. Cassette recorder

IV. Content

1. Jet lag and time zones
2. Bird migration and bird song
3. Insects clocks
4. Hamster nocturnal activity
5. Plant rhythms
6. Variables which might affect clocks such as magnetic fields, earth rotation, etc.
7. Sea animals and tides

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V. Questions to be Considered by Students

1. What is the meaning of new words — endogenous, exogenous, hypotheses, actograms?
2. What causes jet lag?
3. What are some examples of annual rhythms?
4. What is meant by circadian rhythm and what are some examples of it?
5. Evidence that circadian rhythms are/are not simple response to light and dark.
6. What are "long day" and "short day" plants?
7. What is a *free-running* rhythm?
8. Why is an endogenous bio-clock comparable to a watch?
9. Why is an exogenous bio-clock comparable to a sundial?
10. Why is mystery the essential challenge of science?

VI. Activities and Strategies

A. Student

1. See slide presentation, breaking each day at discussion points.
2. Interview person who has experienced jet-lag.
3. Observe a bird near your home. Keep a chart about when it sings.
4. Make a sleep chart for yourself.
5. Conduct original experimentation.
6. Repeat experimentation mentioned in slide presentation.
7. Write a single page on your experimentation ending with a conclusion. (Form to be given by teacher.)
8. Discuss practical applications of these experiments.
9. Learn to graph experiment results.
10. Discuss desirability of scientific experimentation even though it has no practical application.
11. Keep log of daily activity.
12. Go on field trips for collection.

B. Teacher

1. Show students how to raise and manage fruit flies.
2. Explain graphs — how to make them, how to read them.
3. Give examples of experiments with too many variables.
4. Give examples of experiments with only one variable.
5. Gather materials for each activity.
6. Obtain plants.
7. Arrange for interviews with resource people.

VII. Evaluation

A. Student

1. Originality of hypotheses (that is spin-off from film).
2. Conduct of experimentation
3. Write up of experimentation

B. Course

1. Student opinion
2. Completed projects

IT'S YOUR DEAL

A mini-course designed to aid students in investigating the origin of symbols on playing cards and the historical evolution of card games.

**Kay Richardson
Richmond County**

Mini-course Title: IT'S YOUR DEAL

**Target Group: Primary (with assistance)
Grades five through eight**

I. Student Objectives

A. Cognitive

To learn the background of the symbols on playing cards and gain insight into the history and development of cards and of games played with them.

B. Affective

To become aware of certain moral connotations that are connected with cards because of gambling. If students become acquainted with the historical and symbolic implications of playing cards, they would benefit, and this would also help them to understand other symbols such as the dollar sign and the fish. Such symbolic understandings make better and more comprehensive readers and learners.

II. Thought Processes to be Developed

- A. Analysis
- B. Evaluation
- C. Synthesis
- D. Problem solving

III. Instructional Materials

A. Books

1. Severn, Bill. *Packs of Fun*. New York: David McKay Co., Inc., 1967.
2. Beal, George. *Playing Cards and Their Story*. Arco Publishing Company, 1975.
3. Tilley, Roger. *Playing Cards*. G. P. Putnam's Sons, 1967.
4. Lincoln Library of Essential Information
5. The American Peoples Encyclopedia
6. Our Wonderful World Encyclopedia, Vol. 13, p. 430.
7. Merit Student Encyclopedia

B. Poems

1. Harte, F. B. "Plain Language from Truthful James." *Innocent Merriment: An Anthology of Slight Verse*. McGraw-Whittlesey House, 1942.

C. Several decks of cards

D. Kodak visualmaker

E. Film

F. Flash cubes

G. Crayolas

H. Unbleached muslin

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IV. Content

- A. Playing card symbols
- B. History and development of card games
- C. Card game rules
- D. Cultural symbolism

V. Questions to be Considered by Students

- A. From where do playing cards come?
- B. How did we get the four suits of cards?
- C. What do the diamonds, hearts, spades and clubs represent?
- D. How many cards are in a regular deck?
- E. What are the cards in a deck?
- F. What kinds of card games do you play?
- G. Of what were the first American cards made?
- H. Can cards be used for purposes other than games? Have they ever been used, historically, for purposes other than games?
- I. What superstitions are associated with cards?
- J. What is the cultural symbolism behind cards?

VI. Activities and Strategies

- A. Read stories or poems about playing cards.
- B. Pick a certain face card and look up what it stood for. For example, King of Hearts — The first Holy Emperor, Charlemagne. Every encyclopedia has a full explanation of the history of and cultural implication of this card.
- C. Make pictures or possibly murals, using the pictures on the cards.
- D. Have children show card tricks.
- E. Draw pictures of what they think the original cards looked like.
- F. Have students teach the class a card game they know.
- G. Have students make up a new and original card game.
- H. Students could film a slide presentation showing the history and development of playing cards.
- I. Wall mural on unbleached muslin with crayolas on history of cards ironed on.

VII. Evaluation

A. Course

Group discussion of the overall learning achieved by this mini-unit on the history and development of playing cards. Try to encourage each student to tell something he or she has learned. Discuss how we feel about cards now that we know the history and symbolism connected with them.

B. Student

Ask student to fill out a short questionnaire about this mini-unit to see how he or she feels about what was learned. Teachers using this course should design their own evaluation form so that it is in line with objective outlined for their students.

OCEANOGRAPHY

This course deals with oceanography as a branch of geography involving the physical and biological sciences as they relate to the ocean. During the mini-course the student will research the present and future uses of the vast seas of our planet which cover seven-tenth of its surface.

**Mary Alice Horne
Richmond County**

Mini-course Title: OCEANOGRAPHY

Target Group: Grades five through eight

I. Student Objectives

A. Cognitive

Students will

1. develop an understanding of the natural resources, both organic and inorganic, that are found in the sea;
2. become aware of the varied careers associated with the study and development of the world's oceans.

B. Affective

Students will develop an understanding of the relationship between the marine and terrestrial environments as they relate to human needs.

II. Thought Processes to be Developed

- A. Application
- B. Comprehension
- C. Synthesis
- D. Analysis
- E. Evaluation

III. Instructional Materials

- A. Books
- B. School and local libraries
- C. Pamphlets and material from state and government bureaus of marine affairs
- D. Films and filmstrips

IV. Content

Oceanography is a branch of geography involving the physical and biological sciences as they relate to the ocean. During the mini-course the student will research the present and future uses of the vast seas of our planet which cover seven-tenths of its surface.

V. Questions to be Considered by Students

- A. What are the career opportunities available in the field of oceanography?
- B. How does marine life differ?
- C. What is meant by the oceans food chain?
- D. What support is there for the theory of continental drift?
- E. What laws are in force that protect, regulate and control the harvest of marine food and game fish?
- F. What are the past and future projects designed to develop the worlds seas and oceans?
- G. What research is presently being done in the field of oceanography?
- H. Will it ever be possible for man to exist in an environment under the sea?
- I. How does funding for outer space compare with funding by the government for the exploration of inner space?
- J. How important are the oceans to man's existence here on the planet earth?

VI. Activities and Strategies

A. Student

1. Complete a research project based upon one aspect of oceanography.
2. Illustrate and describe in a notebook at least 20 forms of marine life putting those selected into categories.
3. A trip underwater in a plastic bubble. Show slides on outside wall while students sit inside.
"Song of the Whales" film on aquanaughts.
4. Make an accurate drawing of the ocean's food chain.
5. Become familiar with the continental drift theory and explain the evidence that supports the theory.
6. Develop a marinelife identification chart.
7. Research and list methods of preserving, collecting and displaying marinelife found at the seashore.
8. Research future methods of farming and mining the sea.
9. Write a science fiction story about a family that lives in a city under the sea.
10. Find out how much money our government spends each year on oceanography and write a position paper, either pro or con concerning this expenditure.
11. Learn about the kind of undersea farming that produces cultured pearls. Write an article about it.
12. Write to the Bureau of Marine Fisheries for the State of Georgia and request information about the laws Georgia has set up to protect, regulate and control the harvest of marine food.
13. Draw a diagram showing the oceans currents and explain how these currents affect the climates of land areas.
14. Compile a list of careers in oceanography and determine what type of educational background is required for each.
15. List and describe the capabilities of various devices used for exploring the ocean.
16. Design a vehicle that could be used for underwater exploration using known scientific principles.
17. Compare the problems encountered by astronauts and aquanauts.
18. Write a paper on the life and scientific discoveries of Jacques Cousteau.
19. Make a model of a city located under the sea. Include all the things that would be necessary to exist in such an environment.
20. Plan a field trip to Skidaway Island.

B. Teacher

1. Introduce the unit by showing a film or filmstrip that will give the students an overall view of the field of oceanography.
2. Use films and filmstrips throughout the mini-course to generate class discussion.
3. Involve resource person whenever possible in the unit.
4. Arrange a field trip to an Oceanographic station.

VII. Evaluation

A. Course

1. After completing this mini-unit, the student will have developed a clearer understanding of the importance of oceanography to the future of the world. The student will demonstrate evidence of this understanding through research projects, oral presentations, group discussions and the imaginative development of future projects in the field.

B. Student

Students will

- 1. complete and present to the group in some interesting way a research paper on an aspect of oceanography.**
- 2. assess future explorations and uses of the world's oceans and select one project, either presently projected by scientists or one the student develops, and present the idea to the group.**
- 3. participate in a debate on the exploration of outer space versus the exploration of inner space.**

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THE GAMES PEOPLE PLAY

This mini-course is a study of world cultures as revealed through the games people play.

**Joan Benton
Kathleen Usry
McDuffie County Schools**

Mini-course Title: THE GAMES PEOPLE PLAY

Target Group: Grades five through eight

I. Objectives

- A. To broaden the student's repertory of games
- B. To compare games from different cultures and different ages
- C. To encourage the students to take leadership roles in promoting leisure time use in worthwhile activities
- D. To analyze the components of different games and to determine the levels of thinking which are involved in playing different games (knowledge, comprehension, application, analysis, synthesis, evaluation)
- E. To encourage creativity as the students develop original games or variations for existing games

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Analysis
- E. Synthesis
- F. Evaluation

III. Instructional Materials

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- Culin. *Games of the Orient*. Charles E. Tuttle Company, 1958.
- Dulles. *A History of Recreation*. Appleton-Century-Crofts, 1965.
- Ferretti. *Games*. Workman Publishing Company, 1975.
- Gallagher. *Games in the Street*. Four Winds Press, 1976.
- Grunfeld. *Games of the World*. Holt, Rinehart and Winston, 1975.
- Harbin. *Games of Many Nations*. Abingdon Press, 1954.
- Hofsinde. *Indian Games and Crafts*. William Morrow and Company, 1957.
- Hunt. *Games the World Around*. A. S. Barnes and Company, 1941.
- Ickis. *The Book of Games and Entertainment*. Dodd, Mead & Company, 1969.
- Kohl. *Games for Children*. A. A. Wyn, Inc., 1953.
- Larrabee & Meyerson. *Mass Leisure*. The Free Press, 1958.
- McConville. *The History of Board Games*. Creative Publications, Inc., 1974.
- Millen. *Children's Games from Many Lands*. Friendship Press, 1965.
- Nash. *Philosophy of Recreation and Leisure*. Wm. C. Brown Company, 1953.
- UNICEF. *Hi Neighbor, Book 7*. Hastings House Publishers, 1964.
- UNICEF. *Hi Neighbor, Book 8*. Hastings House Publishers, 1965.

Vinton. *The Folkways Omnibus of Children's Games*. Stackpole Books, 1970.

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RESOURCE MAGAZINES USED

Games. published bimonthly by Games Publications, Inc., 515 Madison Avenue, New York, N.Y. 10022

IV. Content

- A. Ancient culture
- B. Culture of the Middle Ages
- C. Present-day culture
- D. History of games
- E. Rules governing the playing of various games
- F. Games and their role in our everyday lives

V. Questions to be Considered by Students

- A. What is the importance of games?
- B. How long have games existed?
- C. How many ways can you think of for classifying games?
- D. What does a game reveal about the culture in which it is played?
- E. How do games influence the lives we live today?

VI. Activities and Strategies

- A. Brainstorm on games, naming as many as possible; while one student writes names on the board, another will write them on cards, one game to a card.
- B. Cards are distributed among the students and, as a group, they alphabetize them. A student volunteer writes down the alphabetical list.
- C. Brainstorm on ways to classify games.
 - 1. Basic type (luck, physical endurance, skill, or a combination of these)
 - 2. Cultural origin
 - 3. Appropriate ages
 - 4. Preps used
 - 5. Number of players involved
- D. Using egg cartons, prepare mancala game boards and play game according to rules distributed by Miss Margaret Bynum at conference on gifted, East Georgia GLRS Center, Augusta, March 17, 1978.
- E. As a group, using the game name cards, repeatedly classify the games into the different categories named in the preceding activity. Different student volunteers will write down the various classifications.
- F. Discuss the Questions to be Considered (See II above.) Is there a need for reading about games and for researching these questions? Game name cards should be equally distributed among the students for them to research. As students read, they should be aware of games which were not included in class card file and should bring these names to class's attention at the next session.

- G. Each student will choose one of the nine major culture regions of the world and do research on games played in that culture region (African, American Indian, Asian, Australian, European, Indian, Melanesian, Micronesian, Polynesian). The student will teach his or her classmates to play at least three games which originated in that culture, representing if possible, each of the following time periods.

Ancient times (3000 B.C. - 500 A.D.)

Middle Ages (500 A.D. - 1400 A.D.)

Modern times (1400 A.D. - 1978 A.D.)

Consider the last question in the section above.

- H. Each student will lead his or her peer group into playing a game or games during the lunch period. He will briefly report his success to the class.

- I. Each student will create a game or modify a known game and share this original with his or her classmates.

VII. Evaluation

To what extent was each objective reached?

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**THINKING, FEELING AND ACTING
THROUGH PANTOMINE**

**A mini-course designed to assist students in developing
affective behavior and in exploring the theatrical field.**

**Mary Alice Clayton
Glynn County**

Mini-course Title: THINKING, FEELING AND ACTING THROUGH PANTOMINE

Target Group: Grades five through eight

I. Objectives

Students will

- A. experience creative thinking
- B. develop sensitivity and awareness
- C. find a controlled outlet for the emotions
- D. stimulate the imagination
- E. experience problem solving through role playing
- F. develop a better and more realistic self-image
- G. build self-confidence through the feeling of success
- H. analyze situations and express strong emotions
- I. interact with other students and come to understand and accept other people's points of view
- J. develop self-discipline and improve concentration
- K. develop skill in communicating nonverbally
- L. learn to respond to single moods
- M. develop sensory awareness
- N. experience cultural enrichment

II. Thought Processes to be Developed

- A. Knowledge
- B. Application
- C. Receiving
- D. Responding
- E. Interpretation

III. Instructional Materials

A. Teacher and Student Use

- Burger, Isabelle. *Creative Play Acting*. New York: A. S. Barnes & Co., 1950.
- Elkind, Samuel. *Improvisation Handbook*. Glenview, Ill.: Scott, Foresman & Co., 1975.
- Ehrlich, Harriet W. *Creative Dramatics Handbook*. Urbana, Ill.: NCTE, 1974.
- Gerbrant, Gary. *Ideas for Acting and Writing Out Language*. Urbana, Ill.: NCTE, 1974.
- Hennings, Dorothy. *Smiles, Nods and Pauses*. New York: Citation Press, 1974.
- Hutson, Natalie, editor. *Stage*. Stevensville, Mich.: Educational Service, Inc., 1968.
- Menuey, Joan and Anne Vener. *Acting in Action*. Monterey Park, California: Creative Teaching Press, 1975.
- Siks, Geraldine B. *Creative Dramatics—An Art for Children*. New York: Harper and Brothers, 1958.
- Spolin, Viola. *Improvisation for the Theater*. Evanston, Illinois: Northwestern University Press, 1963.
- Unsworth, Constance R. *Be An Actor*. Columbus, Ohio: Xerox Education Publications, 1973.

Walker, Pamela. *Seven Steps to Creative Dramatics*. New York: Hill and Wang, Inc., 1957.

Ward, Winifred. *Playmaking with Children*. New York: Appleton-Century Crofts, 1957.

IV. Content

- A. Theatre
- B. Acting as an art
- C. The life of an actor
- D. Improvisations
- E. Emotions in the theatre
- F. The role of the senses in acting

V. Activities and Strategies

A. Procedure

Ask students for a definition of *pantomime*. (Pantomime is acting without words or expressing a message by using the whole body.) Explain that a person who performs a pantomime is called a *mime*. Two of the world's best known mimes are Red Skelton and the Frenchman, Marcel Marceau. The party game, charades, is a form of pantomime.

Remember that the mime expresses him or herself totally with his or her hands, face and body. Since all children are natural actors, pantomime simply frees them from inhibitions in expressing ideas and feelings.

I like to begin pantomime with children with very simple loosening up exercise, building gradually through a progression of exercise to a point where the child feels free to tell an entire story without using verbal language.

One loosening up exercise that children especially like is balloon blowing with the child acting as the balloon. The children are asked to spread out over the acting area so that each one has space in which to move. Then the leader has each child assume a limp balloon position. Encourage them to lie on the floor if they like. Now as the leader blows the balloons in three or four blows the children are asked to use their whole bodies to fill with air after each blow, regulating their expansion to be completely filled with air after the fourth blow. Then the children are asked to hold their enlarged position until the leader stabs each balloon with an imaginary pin, at which time each balloon reacts accordingly.

I always begin and end pantomimes with the word "curtain," and have the children do so when they do individual pantomimes. This gets the audience's and actors' attention to begin and signals them that a pantomime has ended if the performance itself is not strong enough to indicate the fact. I encourage applause at the end of individual and small group pantomimes, and I always use positive reinforcement as large group pantomimes end.

Another good beginning exercise involves seating all the children on the floor with the leader as a part of the circle. The leader then asks all children to imagine they are sitting down to dinner, each with his or her favorite food in front of him or her. Next, ask leading questions, such as

How does the food look?

How does it taste?

If you are having pizza, what kind is it?

Is your favorite food hot or cold?

Is it sweet or sour?

Do you cut it with a knife, eat it with a fork, a spoon, your hands?

How do you feel as you eat it?

Then instruct the children that upon the signal "curtain," each is to eat his or her food. The pantomime continues until "curtain" is called a second time. If the children feel comfortable, the leader might ask for volunteers to perform individually while the other children watch carefully, and at the end of the pantomime guess what food was being eaten.

In further warm-ups the children might be asked to do an action pantomime together, for example, flying a kite, bouncing a ball or sawing down a tree. After they've all performed together, ask for volunteers to again perform individually.

As students become more relaxed and more experienced, they may move through a range of pantomime exercises from (1) loosening up exercises and warm-ups to (2) simple pantomimes to (3) sensory exercises to (4) improvisations to (5) change of mood exercises and eventually to (6) complete story dramatizations. Sample exercises will be provided for all areas except the last. For story dramatizations, I recommend *Creative Dramatics—An Art for Children*, by Geraldine B. Siks.

VI. Evaluation

As soon as the children are comfortable with each other, have one student pantomime while the rest of the group does an evaluation. Then other students will re-do the action and be evaluated in turn. It is important that each child has an opportunity to repeat his experience if he feels he can improve it.

Each student must be encouraged to concentrate on being the person or the thing he or she is playing and reminded to stay in character. Point out to the children that all good actors and actresses at all times stay in character and be the person or thing.

Each student should be praised for what he or she does well. It is necessary not to allow two or three strong personalities to dominate but to look for something positive in each child's performance.

Not only does the leader evaluate each performance but the other children must be guided to do so, also, through such questions as

What was good about this performance?

Why was Bobby a good tree?

What did Suzy do that made her look like a candle melting?

Who knows something good that Debbie did?

Why did Marsha's pantomime seem real?

Be sure that all children understand the meaning of constructive criticism. Then bring in such questions as

Did everyone understand all actions in the pantomime?

Did the mime stay in character?

Did the pantomime have a good ending?

What can we do to improve the pantomime?

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In evaluation, keep in mind that it is very important that every child experience success in dramatic play.

B. Loosening-up exercises

1. Stand straight. Bend and touch your right foot with your right hand. Then bring your hand up the side of your whole body to your shoulder. Then reach with your hand high into the air, stretching as tall as you can. Repeat this with your left hand.
2. Hold your hands at waist level and shake them rapidly. Hold them high above your head and do the same thing. Still shaking your hands, lower them until you almost touch the floor.
3. Bend your body as far as you can forward, backward, left and right.
4. Stand straight. Then become a rag doll. Beginning with your head, gradually relax your whole body until you look and feel like a big rag doll.
5. Become a tin soldier. Stand very erect with a military bearing. Then move very stiffly, marching as a toy tin soldier might.
6. Be a puppet on a string. You are controlled by a puppeteer and must do exactly as he tells you.
7. You are a robot. You are completely mechanical in your actions and are programmed to move and perform only as your leader commands you.
8. Imagine you are a balloon. The balloon man is holding you by a string with many other balloons. Suddenly, you find yourself free. A gust of wind carries you over the circus tent and you're on your own. Where do you go? What do you see? How do you feel? Remember you are way up high looking down on a small world below. You are free as a bird. But suddenly tragedy strikes. As you float through the air tragedy strikes. You are leaking air — you slowly begin to sink. Finally you can float no longer and you land all alone in a field, a limp balloon.
9. Lie down on the floor. Get in a very comfortable position. You are going to relax your entire body, beginning at the top of your head moving to your face, neck, shoulders, right and left arms, elbows, fingers, waist, thighs, knees, calves, ankles, feet, toes. Now your entire body is completely relaxed. Stay that way with your eyes closed for a minute or two.
10. Be a ventriloquist with a partner as your doll.
11. Be a hypnotist with a partner as your subject.
12. Another partner exercise uses one performer as a mirror and the other as a person looking into the mirror. (This is always a favorite exercise and can be done repeatedly. It is especially good for improving concentration.) After a while, reverse positions.
13. Balance your self on three parts of you. (For example, head, hand and foot)
14. How many different ways can you move from one place to another?
15. One person is the sculptor; another is the clay that is being molded into a statue. Divide the class into pairs and see who can create the best statue. Then reverse roles and let the statue become the sculptor.
16. Ask students to see how many letters of the alphabet they can form, using their whole bodies. See what letters two or three people can make. See if five people can make a whole word.
17. Pantomime a tennis match with two players.
18. Find out how many ways you can put your whole self on the floor.

19. Pretend your hands are stuck to your knees. Pull them apart.
20. Sit on the floor and see how many ways you can move your body.

C. Warm-up exercises

1. With a partner, toss an imaginary ball back and forth.
2. Walk as many different ways as you can: heels, toes, knees, backwards and sideways.
3. Assume a situation and character of your choice. Enter the room, sit, then rise and leave. Who are you?
4. Use your whole body to write numbers or letters in the air. Use as much space as you can. Do this slowly.
5. In a group, pass something very hot from one person to another.
6. Have the group form a circle. Throw an imaginary ball to someone in the circle. Have that person throw it to someone else and so on.
7. On signal have everyone in the group become a jungle animal, or a zoo animal, or a farm animal. Or have everyone in the group be the same animal with the leader naming the animal each time.
8. Become an egg. The egg hatches into a baby chick and explores its new surroundings.
9. Become a candle. What kind of candle are you? color? shape? scent? Melt as your wick burns until you are only a puddle of wax.
10. You are a wiggling baby tadpole. Go through the stages as you grow into an adult frog. What kind of frog are you? What do you do? Where are you?
11. You are a tiny seed. You grow and grow until you become an enormous tree waving in a strong wind.
12. Find a partner. One person is a cat, the other a mouse. The cat is having a great time chasing the mouse. Suddenly the tables are turned and the mouse chases the cat.
13. As espionage agent is following a spy. Where do they go? What do they do?
14. You are an ice skater. Use your whole body. Move gracefully.
15. You are an artist painting a picture. You have an imaginary palette, brush and easel. Paint. Stand back and look at your work. What is your reaction. Show me.
16. You are fishing. Go through all the movements. Catch a very big fish.
17. Ride a horse. What kind of horse is it, an old mare, a spirited bronco, a runaway horse?
18. Hoist the sail on a boat.
19. You are picking fruit from a tree. What kind of fruit is it? What do you do with it?
20. You are learning to drive a car. Your partner is a driving instructor — a very frightened one.

D Simple pantomimes

- 1 Two players are playing checkers.
2. You are a little girl pretending to be grown up. You are wearing very high heels and a mink stole.
3. You are a strip of bacon sizzling in a fry pan.

4. You are the sun rising in the morning. Then you are the sun setting in the evening.
5. You are a monkey in a cage.
6. You are a salesman in a hat store. Your partner is the customer.
7. You are barefooted and are walking on hot sand, on sticky pavement, on sandspurs, in cold water.
8. You are hiking through a muddy field carrying a heavy backpack.
9. You are a pencil sharpener. Your partner is the pencil. After playing your part, reverse roles.
10. You are a hungry puppy asking to be fed.
11. You are a clock. What kind of clock?
12. You are a dewy rosebud early in the morning. Gradually your petals unfold and you become a full-blown rose.
13. You are a tube of toothpaste being squeezed by a messy kid. (You may do this with a partner if you like.)
14. You are a clown. What is your act?
15. You are a big nail being pounded into a board.
16. You've just waked up in the morning. Brush your teeth, wash your face, and comb your hair.
17. You've just come out of the grocery store loaded with bags. Your car is locked and you can't find your keys.
18. You are a man or woman trying to put up wallpaper. You've never done this before.
19. You answer the phone and are asked to take a message. You can't find a pencil. What do you do?
20. You are a fat man or lady trying to get into a telephone booth.
21. You are waiting in the dentist's office to have a tooth pulled.
22. Pick up a box that is very heavy. Set it down again. Then pick up a box that is very light and put it on a table. Open the box and take something out. Show your audience what it is.
23. Two friends go camping. What do they do? What happens?
24. Pour yourself out like water from a pitcher.
25. With a group, pantomime a picnic or a visit to the supermarket.
26. In pairs, pantomime a waitress with a difficult customer.
27. Enter a house in an unusual way.
28. Give your horse a bath.
29. Polish your shoes.
30. Saddle and ride a horse.
31. You are painting a floor. Suddenly you find yourself in a corner.
32. Eat an orange. What do you do with the peelings?
33. You are catching butterflies with a net.
34. You are climbing a high mountain. It is very dangerous. Finally you reach the top and pull yourself up.

35. You are on a diet. You buy a candy bar and can't decide whether or not to eat it.
36. Act out a nursery rhyme.
37. Take a walk in the park. Stop and pick a flower. Do this as if you were a football player, an old lady, a little girl, a sneaky pickpocket.
38. You are cleaning out a trunk. As you pull out each item, you must show by your actions what it is.
39. You've not eaten in several days. Far away you see a table filled with food, but as you reach it, you see it exists only in your imagination.
40. Because you are on a diet, you try to get a late night snack from the kitchen without being discovered. You must be very sneaky.
41. You're late for an important date and you can't find your car keys.

E. Sensory Exercises

1. Seeing

- a. A ballgame
- b. A fire
- c. An old friend
- d. Your messy bedroom
- e. A baby bird fall from a nest
- f. A stranger kick a dog
- g. The most beautiful sight you've ever seen
- h. A cloudy sky when you want to go to the beach
- i. A pot of gold at the end of a rainbow
- j. A frightening movie

2. Hearing

- a. An alarm clock
- b. Distant music
- c. A friend's voice when you're lonely
- d. A shotgun blast
- e. A conversation in another room
- f. A cry for help
- g. A loud crash
- h. A fire alarm
- i. A noise you've never heard before
- j. Your Mom calling you for your favorite dinner

3. Smelling

- a. Smell ammonia or clorox
- b. Perfume
- c. Onions
- d. Fresh baked cookies
- e. A rose
- f. A garbage dump
- g. Popcorn
- h. A wet dog
- i. A hospital
- j. Bacon frying

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4. Tasting

- a. A lemon
- b. Ice cream
- c. Medicine

- d. A food you've never tasted before
- e. A food you don't like
- f. Lemon pie
- g. Sour milk
- h. Pizza
- i. Your favorite food
- j. Soup that's too hot

5. Touching

- a. A hot iron
- b. Fur
- c. Rain falling
- d. A scratchy sweater
- e. An ice cube
- f. Snow
- g. A warm puppy
- h. Something you've never felt before
- i. A cool breeze on a hot, dark night
- j. A piece of glass in your foot

F. Improvisations

1. You just received an unexpected package in the mail. You open it and a tiny little man jumps out. What does he do? What do you do? Act it out.
2. You are in a train compartment. One of the travelers is clumsy and disturbs the other people.
3. You are a teenager and ask your mom or dad if you may use their new car.
4. You are sentenced to prison for a crime you didn't commit.
5. Choose an object from a prop box and build a scene around it. Examples — a diamond ring, a single slipper, a rusty tin can.
6. You possess a ring with a curse on it. A stranger comes and demands the ring. What does he or she want it for? How do you react? What happens?
7. You (group) are toys in a toy shop. During the night you come alive. What toy are you? What do you do when you come alive?
8. Take any group of three words and make up a story to act out. Examples:
 - (1) Mink coat, shovel, toaster
 - (2) Cookie jar, snow shovel, swimming suit
 - (3) Angle worm, boxing gloves, postage stamp
 - (4) Toothbrush, horse, earring
 - (5) Paper clip, telephone, baked potato
9. You are on a ship in a terrible storm. The captain and crew work together to try to save the ship.
10. You are Sherlock Holmes and Dr. Watson. You have a crime to solve. What is the crime? How do you solve it?
11. Two friends are gossiping about a third friend. That friend appears and overhears the conversation.
12. You are at a pet show. What does your pet do? Does it win?
13. A substitute teacher is having difficulty with a class. There is a noise, but she can't pinpoint it. What does she do? What do the students do?

14. Two little kids get lost in the woods. It's getting dark. What happens?
15. You are taking a test. Suddenly the teacher accuses you and another student of cheating and sends you to the principal's office. What happens?
16. It's a hot afternoon on the beach. Who are you? Why are you there? What are you doing? Suddenly a thunderstorm comes up. How does everyone react?
17. Choose a future occupation that you'd like to have and act it out.
18. Two people explore a cave. What do they find?
19. A group of people are at the complaint desk in a police station. Why are they there?
20. You are at a family reunion. Suddenly two brothers start an argument. Everyone takes sides. What happens?
21. Two ladies at a rummage sale both want the same coat.
22. There has been a murder. You are Columbo, questioning the suspects.
23. You are about to go on your first date. What happens?
24. Build a scene around an historical event.
25. You've been on vacation and come home very tired to find that your house has been completely ransacked.

G. Change of Mood

1. You are a dog. You spot a cat, chase it and lose it.
2. You come in and find your puppy shredding your favorite shirt.
3. Your team loses the ball game just when you thought you were winning.
4. You're waiting on the corner for someone to pick you up. It's getting dark.
5. Read a letter from a friend containing exciting news.
6. You're playing in the house and break your mom's favorite vase.
7. You're walking down the street and you become very sad.
8. You are sad about something and suddenly find a wallet full of money.
9. You are doing a math problem and find you don't understand it. Show your confusion.
10. You are having a nice meal in a restaurant. Suddenly the waitress spills soup on you.

THE HTAM BAL EXPERIENCE

This mini-course describes a mathematic lab, includes activities to use in geometry, graphs, metrics, computers and probability.

Ray Kitchens
Pam Kelsey
Douglas County Schools

Mini-course Title: THE HTAM BAL EXPERIENCE

Target Group: Grades five through eight

I. Student Objectives

The purpose of the math lab is to provide a learning environment which will enable gifted students to

1. translate and interpret ideas;
2. extend and apply learnings to new areas of problem solving;
3. analyze simulations and relate components to real situations;
4. design original models;
5. evaluate ideas in terms of improving systems;
6. develop attitudes and divergent thinking skills which can be used in group and independent problem solving;
7. develop a system of sharing learnings and exchanging ideas;
8. develop self-concept by helping others;
9. evaluate their progress.

II. Thought Processes to be Developed

- A. Analyzation
- B. Interpretation
- C. Divergent thinking
- D. Evaluation

III. Instructional Materials

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Graph paper, parquetry designs I-II, Triman compass, probability activity cards, geoboards, hands, metric graduation beakers (sets of 5) 36652 creative publications, Cuisenaire rods, calculators, listening station, filmstrip viewers, meter sticks, tape recorder, magic markers.

IV. Content

- A. "It" or orientation to responsibilities.
- B. Woodbending or paper folding.
- C. Detect the defect and relate the shape of attributes.
- D. Rainbow rithmetic or tessellations.
- E. Plot the dots or graphing and geoboards.
- F. Copy cat or simulations.
- G. Hang ten or metrics.
- H. I Doubt It or competers probability and statistics.
- I. Did I Do "It?" or evaluation of my process.

V. Questions to be Considered by Students

Will I

check and evaluate my work?

record results and maintain a file?

plan and organize my work?

maintain a positive work attitude?

follow directions?

work well with a group?

attend regularly?

extend math lab activities to include sharing beyond the program challenge group?

budget time for each class session to include a variety of activities?

work independently between sessions on extended ideas?

View film *Math For Tomorrow*, Georgia Film Library.

VI. **Strategies and Activities** — using Bloom's Cognitive and Affective — Williams Model for developing Cognitive and Affective Behaviors.

- A. Can you discover geometric relationships by folding (Woodbending) your waxed paper?
Or can you find the perpendicular bisector of line segment?

bisector of known angle?

formation of right angles?

sum of angles of a triangle?

intersection of angle bisectors of triangle?

Can You

construct a mobius strip?

relate the study of a mobius strip to space travel? How?

How can you prove the fallacy that every triangle is isosceles?

How is origami related to aerodynamics?

Share a discovery from your experimenting with paper folding.

- B. **Detect the Defect and Relate the Shape**

Construct sets of one, two, three or more attributes.

If given a pattern how many set definitions can you devise using Venn diagrams?

Play the missing element game using a minimum of three missing elements.

Design a space-filling game.

Extended idea — reconstruct a game for younger children from "Patches" in the learning packet.

For extra fun, solve digit discovery puzzles.

- C. **Copy Cat**

Choose an activity to play independently or in small groups: magic sums, rows, columns, diagonals, Can You Discover the Magic Square?, polyhedron puzzle.

Tower of Hanoi — Did you discover a system for the fewest moves? Share it.

Un-Game — Where might you use this game?

Construct question cards to add to the original list.

Think Labs — S.T.A.

Mancala

Brain Teaser puzzles

Chess

Soma cubes

Mind expanders

Numble

Listening Station Unit 5 ESP choices: Austrian Subtraction, Instant Addition 7149, Proving Addition 7150, Fascinating 15873 No. 7151, Square Root.

Extended Ideas

Reconstruct any of these games.

Teach the games to someone (family, students and teachers).

D. Rainbow 'Rithmetic

Listening station Unit 5 ESP

"The Mira Fun" — to discover correspondence mappings and congruence.

Construct designs by drawing a circle and inscribing a square. Extend construction to include as many designs as you can by connecting end points.

Create an Escher's distortion.

Can you relate art, nature and mathematics?

Design a root two rectangle.

Research pure mathematical forms in art of the Moors and Arabs.

E. Plot the Dots — Coordinate geometry and straight line, introduction to numerical and graphical statistics.

Play the Die Plot game with a partner.

Graph It — Intermediate Math Games — Milton Bradley

Constructions on the geoboard — Geoboard Activity Kit

Construct circle graphs

Locate objects-learning packet

Graph simple and complex equations.

Demonstrate ordered pairs, linear inequality absolute, value, union and intersection through the graphing gallery activities.

Plot longitude and latitude, connect the points. What did you discover? From the Palstable Plotting Game. Extended activities — Puzzle I and Mind Stretcher.

Reconstruct a mind-stretcher of your choice using a road map.

Reconstruct a Graph, the Giraffe game for younger children.

F. Hang Ten

Student Choices of Activities

Listening Station: The Meter Beaters (linear measure), Whats My Size (area and volume), Cheat the Clock (liquid capacity, temperature), Hollywood Chairs (mass)

Complete Painter's Puzzle

Play one of three metrics games to develop understanding of metric units (Metrication-Metrics Corporation; Metric Market—D.L.M. Materials; Metric Measuring Activity Cards Brey and Henry)

Use metric measure to find volume of cube formation.

Convert cm-dm, cm-m, cm-mm and km-m by originating problems.

Extended ideas

Debate to have or not have metric system in U.S. — Research history of development of metric system.

G. I Doubt It

Field trip — Computer Services — Georgia Institute of Technology — Rand Chiles, resource person. Predict uses of the computer not known at this time.

Design a survey instrument to gather data on student marketing. Predict results, gather data, analyze and graph results. Form conclusions.

Examine magazine ads. Judge for meaningfulness according to listed criteria. Predict results.

- (1) Slogans attractive but meaningless.
- (2) Use statement which could be true.
- (3) Tell what product is and why it is worth buying. Graph results.

Compare statistics with predictions.

Repeat this activity using different types of magazines as sources of ads.

What conclusions do you draw based on your research?

How might industry use your data?

View filmstrip probability — Independent Learning Packet.

How many different uses can you list for applying the laws of probability to improve the environment.

Extended Ideas

- (1) The Suffocating Candle Can You Predict, *Science Children*, May 1976.
- (2) "Feathers — Phenomena For Inquiry." *Science Children*, May 1976.
- (3) Calculator Games — Decoding Messages.

VII. Evaluation

Did I Do It? Student and teacher evaluation using Rezulli's Enrichment Trial Third Dimension

Students evaluate themselves using a rating scale on the 10 questions, "It."

1. X — Not applicable
2. O — Bombed Out
3. 1 — poor (poor attitude and performance)
4. 2 — fair (participated in class activity only)
5. 3 — Completed class work. Shared extended ideas.

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WHO IS PICKING MY POCKET?

A mini-course designed to help students examine the world of taxation. The students will live in a developing town and after examining the needs and problems of an expanding town (through the "Gotcha Cards"), will attempt to solve these problems in simulated town meetings.

Janet Johnson
Sharon Thompson
Effingham County Schools

WHO IS PICKING MY POCKET?

Joe Taxpayer stomped angrily into enrichment class. "How can they get away with this? I thought I was earning minimum wage! These deductions are highway robbery — federal tax, social security tax, state tax! I hardly have anything left to spend! What's the use of a part-time job if you don't have money to spend?" Joe looked forlornly at the stub of paper in his hand and shook his head dejectedly.

"Man, you said it! My folks had to pay over \$200 in sales tax when they bought the new car!" chimed in Joe's friend, Eddie.

Overhearing this exchange, Sue, another classmate added, "That isn't the half of it! My grandfather died and left a lot of land to my Dad. Unfortunately, Grandpa didn't have a will. Would you believe he had to sell 50 acres just to pay inheritance taxes?"

By this time the whole class had arrived and were listening. Mary, whose mother was a widow commented sadly, "I don't worry about inheriting anything; it's that little bit extra you have to pay when you buy groceries, clothes and medicine. When you don't have much to start with, it sure seems unfair to tax things like that."

Mr. Consumer, their teacher, had also been listening to the conversation. "I'm getting the impression that you think taxes are unfair!" Am I hearing you right?" he inquired.

"Right on!" most of the class chorused. "How does the government get the right to pick our pockets?" asked a boy in the back of the room

"What's in it for us?" asked Joe.

"Don't we have any say-so in this?" said Mary?

"Whose idea was this anyway?" growled Eddie.

"Those are very good questions!" Mr. Consumer replied. If you'd like, we can spend some time on the subject of taxes."

"Well, I'm for it!" shouted Joe. The rest of the class agreed enthusiastically.

This enrichment class has selected a topic that really interests them, even if it is a negative interest. Their teacher follows up on this interest by asking for specific questions that the class can research.

1. Why are taxes necessary; what benefits do taxpayers receive from the money they pay?
2. What are the different categories of taxes; the different types?
3. What procedure is involved in levying taxes?
4. What is the historical background of taxation?
5. How has taxation developed in America?
6. In 1979-80, how does income tax affect me?
7. What would be the effect if all forms of taxation stopped tomorrow?
8. How does the American system of taxation compare with the system used in any one of these countries — England, U.S.S.R., Brazil or India?
9. Tax squeeze and tax crisis are terms that are common in the news today. What do they mean?
10. Who was Adam Smith? How do his ideas affect us in 1979-80?

11. What voice does the individual have in determining the rate of taxation?
12. Who pays (or doesn't pay) taxes? Who should?
13. What are some alternatives to taxation?
14. Taxes pay for education. Why should people with no children pay taxes for education?
15. What have famous people had to say about taxes? Locate some quotations. Do you agree or disagree with them? Why or why not?

Perhaps there are other questions you or your teacher can add to this list. If so, write them in the space provided below.

- 1.
- 2.
- 3.
- 4.
- 5.

Choose your question(s) and research your answers. Present to the class the information you find. Be creative in your presentation!

Mini-course Title: WHO IS PICKING MY POCKET?

Target Group: Grades five through eight

I. Student Objectives

A. Cognitive

Students will

1. understand the reasons for and the uses of taxation;
2. understand how taxes are levied;
3. be able to discriminate between categories and types of taxes;
4. realize what taxes apply to whom;
5. be able to compare items used to pay taxes throughout history;
6. decide if taxes are necessary in a society as they know it, and what would happen if no taxes were paid.

B. Affective

Students will

1. develop a tolerance and understanding of the needs of government;
2. demonstrate personal value patterns.

II. Thought Processes to be Developed

- A. Translation
- B. Interpretation
- C. Extrapolation
- D. Application
- E. Analysis
- F. Synthesis
- G. Evaluation
- H. Creativity

III. Instructional Materials and Resources

- A. Books
- B. Newspapers
- C. Magazines
- D. Reference material
- E. Tax forms
- F. Debate handbook
- G. Questionnaires
- H. Community resource people such as tax assessor

IV. Content

- A. Types of taxes; types of government
- B. People's reactions to taxes
- C. How taxes are levied
- D. Historical background of taxation
- E. The pros and cons of taxation
- F. Current tax structure in county, state and nation
- G. Tax payment

V. Questions to be Considered by Students

See introductory story which follows this section of the mini-course.

VI. Activities and Strategies

A. Student

1. Research
2. Survey of local residents on millage increase
3. Simulation game
4. Debate
5. Role play
6. Additional activities are given in the introductory story and simulation game.

B. Teacher

1. Secure books, magazines
2. Allow library time for use of references
3. Create simulation game
4. Secure income tax materials
5. Secure speaker(s)
 - a) Tax assessor
 - b) Superintendent

VII. Evaluation

- A. Did the student expand knowledge?
- B. Did every student become involved?
- C. Did the unit involve the use of the higher thought processes?

Simulation Game for Mini-Course

'WHO IS PICKING MY POCKET'

SIMULATION

Purpose — The students will live in a developing town and after examining the needs and problems of an expanding town (through the "Gotcha" cards), will attempt to solve these problems in simulated town meetings.

Skills — Group discussion, decision making, values, evaluating desires in light of costs, exploring the role of taxes in their lives, comparing advantages and disadvantages.

Procedure

1. Have each student write about an ideal town to live in. File these to use in final evaluation.
2. Each student draws an identity. The teacher may add or delete roles according to the student population.
3. Enlarge the map and let each student put his or her property on the map. As additional buildings and businesses are added to the town, have them drawn on the map. (What about zoning?)
4. The "Gotcha's" are read by the town manager (teacher) in any order desired. Each needs two advocates to introduce it at the town meeting.
5. Advocates — Prepare a container with a marker for each town resident. Two of the markers need to be different. As the "Gotcha's" are read, everyone draws. The two residents drawing the odd markers are the advocates for that meeting. All citizens vote on each issue.
6. If time is needed to prepare a case either pro or con, any resident may petition the town manager for a postponement.
7. The "WOW" cards may be read by the town manager at any time and any order and may be repeated.
8. Citizens may introduce new bills ("Gotcha's") if they wish, in which case they automatically become the sponsor.
9. At the end of the simulation, have each student reread his original paper and determine how much of his ideal town is supported by taxes.
10. Have an oral group evaluation of the problems of a town and how the class solved them.
11. If feasible have speakers (town officials) come to speak on how they solve similar problems.

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"WHO IS PICKING MY POCKET?"

Situation

You are citizens of a small, rural Southern town. Life has gone on for several generations with no appreciable change. Now, however, "The Times They Are A' Changin,'" and as citizens and members of the town council, you must make some important and long lasting decisions about the future growth of your town.

Gotcha cards. (These may be drawn by the students or read by the town manager, teacher.)

Gotcha

As the nearest medical facility is 80 miles away, it is proposed we build one. Estimated raise in taxes .001 percent on property or additional one cents sales tax.

Gotcha

Due to increase in population and the number of reported crimes, it is proposed we have our own law enforcement. The cost is \$40,000 a year for two policemen, a car and incidentals.

Gotcha

Because of poor conditions of roads, it is proposed we repair them. Options to raise the money needed (\$200,000) increase sales tax, increase property tax or make it a toll road.

Gotcha

Incorporate as a town. Pick a name, a mayor (if wanted) and set up some rules.

Gotcha

Some citizens have drawn up a petition demanding fire protection. They estimate the original cost at \$100,000 for equipment and two full time firemen. After the initial cost, it will be \$30,000 a year. Have citizens subscribe to fire protection or pay for it by taxation.

Gotcha

Some parents want an addition to the local school. It will require a bond referendum. (Only parents draw to be advocated, all citizens vote.)

Gotcha

It is proposed a library be included in the city budget. Estimated cost per year over a ten year period, \$50,000 per annum.

Gotcha

It has been proposed that the town start a local recreation department. The city already owns an adequate site. A staff of two and equipment for football, baseball and basketball average yearly cost is \$40,000 spread over ten years.

Gotcha

One citizen feels the streets in town need street lights. Installation cost and one year's upkeep, \$120,000.

Gotcha

A citizen has asked the city to provide garbage pick-up and a dog catcher, with one person filling both jobs. If affirmative, decide a salary and write an ad stating necessary qualifications.

Gotcha

The state will provide 50 percent of the funding to restore a Civil War home in the area. It will be a heritage landmark, estimated cost \$100,000 restoration and \$3,000 a year upkeep.

Gotcha

The state is cutting all welfare and social security payments by 25 percent. It is recommended by the state that the local government make up the difference.

Gotcha

It is April 15; using the income on your identity card, figure your income tax taking the standard deduction.

Gotcha

A large corporation, Po-Lu-Tion Inc., wants to build a factory on the lake. They will employ 150 people and would pay approximately \$350,000 in taxes each year. The city must guarantee adequate roads, schools, medical and recreation facilities for the employees. (What about housing?)

Gotcha

It is proposed that we allow the sale of liquor in the town, estimated revenue from liquor permits, taxes, etc. . . \$25,000 per annum.

Gotcha

The state has offered you the local option of (1) adding one cent to the existing three cents sales tax or (2) adding one cent to existing gasoline tax. The money must be raised if your town wants to participate in a statewide celebration honoring a native son by endowing a new college named for him.

Wow cards to be read by the town manager.

Wow

There has been a car accident with three persons involved. If adequate medical facilities are available, no lives are lost; if not, two die on the 80-mile trip to the nearest facility. (Draw to see who is involved.)

Wow

The local bank has been robbed. If there is a local law enforcement agency, the robbers are caught and the money returned; if not, the bank closes for an indefinite period and everyone loses 10 percent of his or her net worth.

Wow

Lightning hits two homes. If there is local fire fighting equipment, the houses are saved and the insurance pays the damage; if not, they are destroyed and the insurance pays only 50 percent of the loss.

Wow

The multimillionaire grandson of a Civil War veteran is offering a \$200,000 trust fund to all towns in your area who have a restored Civil War landmark. If your town qualifies, it will mean an income of 8¼ percent of the fund semi-annually.

Wow

All recreation departments that have been previously established are eligible for a federal grant amounting to 75 percent of the annual operating costs for the next five years.

Wow

The federal government has started a tax-sharing plan. Your town can get a rebate of 10 percent of all taxes paid in this year to be used for community services.

Wow

If your lake is clean and free of all industry and pollution, it can become a major recreation area. The United States Department of Interior will award you a grant of \$500,000 for improvements.

Wow

Your little league is in competition for the state championship. If your recreation fields are adequate, you can host the state competition.

Identity Cards — Each student picks or is assigned an identity. If the town chooses to add facilities from the Gotcha cards, the students may trade in their cards for the sheriff, mayor, etc.

1. Teacher, 24, single
Assets: Salary \$9,000
Property: Car — 1975 Rambler
Dependents: None
2. Teacher, 45, married
Assets: Salary, \$12,800
Property: Home — \$38,000
Car — 1976 Ford sedan
3. Businessperson, 37, married
Assets: Income from small store, \$8,000
Property: Store and land — \$52,000
Home — \$34,000
Car — 1974 Chevy and 1976 Ford van
Dependents: Spouse
4. Farmer, 32, married
Assets: Actual farm income, \$3,000
Property: 80 acres, home and equipment — \$120,000
Car — 1975 Mercury
Dependents: Spouse, two children, ages 11 and eight
5. Farmer, 52, married
Assets: Actual income from farm, \$4,500; from cattle \$120.00
Property: 600 acres, \$500,000 (includes home and equipment)
Cars — 1973 Ford pickup and 1975 VW
Dependents: Spouse, five children, ages 17, 15, 14, eight and two. Mother, age 70
6. Bank President, 48, married
Assets: \$40,000 bank salary and dividends
Property: Home in town — \$60,000
Fishing house and three acres at river — \$26,000
Cars — 1978 Cadillac, 1977 Honda and 1975 station wagon
Stocks: \$150,000
Dependents: Spouse, father and brother
7. Factory employee, 40, married
Drives to another town to work, 60 miles
Assets: Salary; \$6.50 per hour, 40 hours per week
Property: Home — \$35,000
Cars — 1977 Cougar and 1975 pickup
Dependents: Spouse, two children, ages 14 and 10

8. Secretary, 20, single
Assets: Minimum wage of \$2.90 per hour, 40 hours per week
Property: Car — 1974 Ford
Dependents: None
9. Construction Worker, 33, married
Assets: \$12 per hour in season; last year, \$12,000
Property: Double-wide trailer, \$15,000
Car — 1969 pickup
Dependents: Spouse, four children, ages six, four, two and three months
10. Doctor, 52, married
Assets: Income \$46,000 from profession, \$8,000 from horse rance
Property: Home in town, \$80,000; ranch and stock, \$300,000
Cars — 1977 truck, 1978 Toyota, 1977 station wagon
Dependents: Spouse, three children, ages 19, 14 and seven
11. Welfare recipient, 36, widow
Assets: \$4,000 from government
Property: None
Dependents: three children, ages 14, nine and six
12. Retired citizen, 69
Assets: Social Security, \$260 a month
Property: Home — \$18,000
Dependents: None
13. Politician, State Senator, 45
Assets: Salary, \$6,000 plus expenses
Income from feed mill, \$90,000
Property: Mill, \$150,000; home, \$75,000
Cars — 1978 pickup, 1977 Vega, 1956 Thunderbird
Boat — \$8,000 and travel home, \$12,000
Dependents: Spouse, one child, age 16, mother, age 68

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CAREER EXPLORATION

The purpose of this mini-course is to develop the student's awareness as to the many occupations available now and the possibilities for new jobs in the future.

Louise McManus
Bibb County

Mini-course Title: "CAREER EXPLORATION"

Target Group: Grades five through eight

I. Student Objectives

A. Cognitive

Students will

1. acquire knowledge regarding the requirements for different careers;
2. become familiar with the problems still existing in some areas which make it difficult for a person to make a choice;
3. become familiar with projections of experts in various fields with respect to implications for the future.

B. Affective

Students will

1. develop realistic goals consistent with individual students' aptitudes;
2. develop their interests in career opportunities by actively participating in appropriate games and activities;
3. become sensitive to discriminating practices regarding career opportunities for minority groups, women, various age groups and the handicapped.

II. Thought Processes to be Developed

- A. Cognitive
- B. Affective
- C. Divergent
- D. Creative
- E. Evaluative
- F. Convergent

III. Instructional Materials

- A. Magazine articles
- B. Newspaper clippings
- C. Pamphlets
- D. Books
- E. Resource people
- F. Field trips

IV. Content

- A. Job availability
- B. Job opportunities available for minorities and women not available 10 years ago
- C. Career preparation

V. Questions to be Considered by Students

- A. What job opportunities are available for women now which were not available 10 years ago?
- B. What job opportunities can be chosen by blacks now which they could not have chosen 10 years ago?
- C. What can we do now to be prepared to make a choice of a career?

- D. What are some new job opportunities which will be available 10 years from now?
- E. What problems will one have to deal with in pursuing a particular career?

VI. Activities and Strategies

A. Teacher

1. Invite resource people to class including professional people, skilled and unskilled workers.
2. Take students to visit people presently engaged in interesting careers.
3. Provide additional reading materials about changes taking place in availability of careers.
4. Arrange for field trips.

B. Student

1. From A to Z: When I grow up I want to be
 - a. an astronaut
 - b. a barber
 - c. a cab driver
 - d. a dentist
2. Make a scrapbook showing many different careers.
3. Sketch a large world map, then add pictures of occupations that are fairly unique to their part of the world (Swiss cuckoo-clock maker, Venice gondolier, Chinatown fortune cookie folder).
4. Map a block, then show the different occupations represented in that block.
5. Interview at least one of these people in your block. Ask such questions as, "How did you receive specific training for this job? Is there chance for advancement? If you had a chance to change occupations, would you do so? What advice would you give to a young person who is thinking about going into this line of work?"
6. Work alone or with a partner to demonstrate by pantomime or improvisation several occupations; for instance, pizza maker, astronaut or driving teacher.
7. Student will invite someone to come to class to talk about his or her job. Student will give the speaker a list of things he or she would like to hear about and have the class prepared to ask good questions.
8. Make a trip to a particular type of business in which you are interested and observe a person or group of people in action.
9. Pretend you are in charge of organizing a group of settlers to go to a new, undeveloped land. You can take 35 people. What occupations will you include? Why? Some things to consider are natural resources available, business needed, money system, job training programs and government system.
10. Choose an occupation you're interested in. Assemble a costume appropriate for the occupation and tell the class about the job. Tell why you have chosen this job.
11. Make a list of some jobs that might exist in the future, such as underwater farmers or space patrol police. Do a play about someone trying one of these new jobs and the problems he or she might encounter.
12. Make a mural showing how climate makes a difference in the types of jobs available. Contrast your area with a very different climate as to the types of work available. Do some research then draw an interesting mural.
13. Make a collage to show the benefits your family receives as a result of different kinds of work. Choose such pictures as milk, bread, houses, books and ships.

14. Some jobs are available only seasonally. Make a list of at least ten such jobs and plan a way to present your list to the class (poster, chart or collage).
15. Make a collection of pictures of leisure time activities. Then for each picture, make a list of occupations involved in helping to provide these activities for others (ski instructor, resort owner or travel agent).
16. Write a sample resume to take to a prospective employer in answer to a want-ad. Tell him or her why you want and need the job.
17. Study the want ads in the newspaper then write at least one help-wanted ad and one situation-wanted ad.
18. Find out how taxes buy goods and services. What goods and services do city taxes buy? state taxes? federal taxes? research and report.
19. Organize a fashion show of special clothes needed for different jobs. Be sure to have your announcer describe how each outfit helps the person with the job.
20. Choose a career you think is important and research how and when it got its start and how the job has developed and changed.
21. Draw several items which would be important to various jobs. Ask classmates to identify the jobs.
22. Make up a job questionnaire and interview five or more people about their jobs. Have at least 10 questions to ask them.
23. Make a dictionary of all the careers and occupations of which you can think. This can be a class project or an individual activity.
24. Go on a tour of a company or a business which you consider to be of particular interest.
25. Some jobs in America have changed over the years. List some of these and tell what changes have taken place.
26. Invite a very old person to visit your class. Ask this person to tell your class of his or her chosen occupation, how it changed through the years and what the status is now.
27. Choose one job as a starting point, then try to find as many other jobs as possible that are related to the first one. Make a picture or diagram to illustrate your results.
28. Design a bulletin board showing different workers and the tools they use.
29. Jobs from raw materials — start with a raw material and research all of the uses you can find for it. Make a diagram to show the jobs which go with each use.
30. Using want ads, analyze job opportunities in your community and make a graph showing what you find.
 - a. How do jobs for women compare to those for men?
 - b. What areas show the most jobs available?
 - c. Are the results the same over a two week period of time?
31. Get together with some friends and organize a panel to play "What's My Line?" with careers.
32. Ask 10 or more classmates where their parents work and what they do. Keep a record of your data and then classify the workers into groups.
 - a. Producers of goods
 - b. Producers of services
33. Research through interviews. Interview several people including five adults on the question, "How does a war affect the job market?" Be sure to take careful notes. Compile your results and prepare a short speech to share with your classmates.

34. Choose a famous American and research the different jobs that person held besides the one for which he or she was famous.
35. Panel discussion — choose a panel of boys and girls to have a discussion on this question, " Are there jobs that only men or women can do? Write some other questions for your panel to discuss.
36. Choose an invention or discovery and tell of the jobs that have come about as a result of it. Were any jobs eliminated as a result of the invention?
37. Make a chart or graph comparing several different occupations and their yearly salaries and benefits. Is this an important consideration in choosing an occupation? Why?
38. Make a list of at least 10 characteristics of a good employee and at least 10 characteristics of a good employer.
39. What are some occupations that could be dangerous? Tell why you might not like one of these jobs.
40. Interview an employer and ask him or her to give you a list of qualities he or she would like for employees to have.
41. Interview an employee and ask him or her to give you a list of qualities he or she would like for his or her employer to have.
42. Using the list of career clusters below, design simple pictures to symbolize the types of careers in each cluster.
 - a. Business occupations
 - b. Communication
 - c. Construction
 - d. Consumer occupations
 - e. Health occupations
 - f. Mechanical occupations
 - g. Outdoor and recreational
 - h. Public service
 - i. Technical
 - j. Transportation
43. Pick a school subject, then list all of the jobs you know in which people would have to use the skills learned in that subject to do good work in their jobs.
44. Build a learning center about one or more careers in which your classmates can work. The center can consist of puzzles, games or matching.
45. Make a model of a store, factory, school or other type of business and show all the people who work there.
46. Write a letter to find out more about a career you are interested in. You could write to the U. S. Office of Education or to the Georgia Department of Education.
47. Write a report on how unions and professional organizations influence the occupations associated with them.
48. Conduct a survey by interviewing several people concerning a change in their occupations. Ask people who are presently employed what they would like to do if they could change jobs. Ask people who are not working what they would like to do if they could do anything in the world they really wanted to do.
49. Make a display about an occupation. You may include a uniform, samples of equipment or tools used, pictures showing some of the people at work and any other information or paraphernalia you can gather.
50. Interview someone who has moved because of his or her occupation and find out what factors influenced the decision to move.

51. If a law were passed that a person could not travel more than five miles to work, how many people would that affect?
52. Investigate educated versus uneducated people in the ranks of the unemployed.
53. Invite someone who is an administrator in the Explorer Program to your class to discuss opportunities available.

VII. Evaluation

A. Course

The course will be considered a success if the students participate in the activities with enthusiasm and demonstrate a growth in knowledge of career exploration.

B. Student

Student evaluation is based upon whether or not the student performs the following.

1. Selects a career in which he or she is particularly interested;
2. Makes a pamphlet including information about requirements, responsibilities and activities involved in chosen career;
3. Makes a presentation to the class, either semantically (verbal report), figurally (using visual aids) or behaviorally (role playing).

POETRY WRITING

**A mini-course designed to aid students in reading, writing
and experiencing poetry.**

**Emanuel Larkin Jr.
Burke County Schools**

Mini-course Title: POETRY WRITING

Target Group: Intermediate grades

I. Student Objectives

A. Cognitive

Students will

1. experiment with various types of poetic forms,
2. choose language that creates imagery,
3. write creatively a poem in free verse,
4. determine what is being compared in lines containing imaginative comparisons.

B. Affective

Students will

1. enjoy reading and listening to poetry,
2. project one's feelings in poetic forms,
3. share one's poetic creations openly.

II. Thought Process to be Developed

- A. Creative thinking
- B. Knowledge
- C. Comprehension
- D. Receiving

III. Instructional Materials

A. Student

1. Pollock, Thomas C., et. al. *The Macmillan English Series*. 1973. For grades 4, 5 and 6 or any basic English series that emphasizes poetry and writing poetry.
2. "Poetry Tickles"
Filmstrips and cassettes
B F A
3470 Old Fairburn Rd.
Atlanta, Ga. 30331
3. "Poems Are Fun" 10 minutes #576
4. "Poems We Write" 15 minutes #5473
5. "Poetry To Grow On" 19 minutes #5499

B. Teacher

1. Ulliyette, Jean M. *Guideline for Creative Writing*. Dansville, N.Y.: F. A. Owen Publishing Company, 1968.
2. *Growing From Word Play Into Poetry*
Buff Bradley
Learning Handbooks
Department 0103
P. O. Box 818
Maple Plain, Minn. 55348
3. Esbensen, Barbara. *A Celebration at Bees*. Minneapolis, Minn.: Winston Press, Inc., 1975.

IV. Contents

A. Getting Acquainted with Poetry

1. Listening to selected poems
2. Reading selected poems

B. Types of poems

1. Jingles
2. Narrative
3. Character
4. Satirical
5. Humorous
6. Free verse
7. Haiku

C. Imaginative comparisons

D. Creating poetry

V. Questions to be Considered by Students

- A. Do all poems rhyme?
- B. How does poetry differ from other writings?
- C. Why is rhythm important in poetry?
- D. What would happen if poetry had no beat?
- E. Would you want to develop a new type of poetic form?

VI. Activities and Strategies

A. Student

1. After having listened to the reading of several poetic selections, answer the following questions as they relate to each poem. Do you agree with the poem's message? How would you rephrase the poem?
2. Create a poem to express your feelings at the present moment.
3. Write a vivid poem in free verse about your thoughts on peace.
4. Develop a narrative that details some of your early childhood experiences.
5. You are employed by an advertising agency. Your job is to write jingles for newly created products. Create jingles for commercials that would advertise the following products.
 - a. automatic dusting machine which operates on batteries
 - b. instant dry shampoo — hair dries three minutes after shampooing
 - c. lunch-a-pill — one tablet provides a balanced lunch, seven varieties
6. Develop a Haiku that presents a word picture for each of the seasons — spring, summer, fall and winter.
7. Create a satirical poetic form that makes fun of something.
8. Write a poetic character form (portrait in words) about an individual in American history, a character in fantasy land and a member of your immediate family.
9. Compile a personal anthology of your poetic creations. Share your creations with another class in the school. You may ask the librarian to allow you to read your selections to a class during the class' library period.

B. Teacher

1. Have students select poetry books from the school library for reading and listening pleasure. Make sure students discover the importance of rhythm.
2. Have students read several selections of poetry. Notice their rhyming scheme. It is important to note that sound, not spelling, makes rhymes.
3. Introduce and explain to the class how to use the thesaurus. Have students to write a poem about something that they consider beautiful. Then have students to re-examine their poetic creations by using the thesaurus to select other words that might give a more precise picture of what they meant.
4. Provide an example of the following types of poetic forms for students to become acquainted with the characteristics of each.
 - a. **Jingle**: short poems with rhyming words, similar to those in Mother Goose verses.
 - b. **Narrative**: tells a story.
 - c. **Character**: portrait in words.
 - d. **Satirical**: makes fun of something.
 - e. **Free verse**: built-in rhythm without consistent rhyming.
 - f. **Humorous**: with a touch of exaggeration.
 - g. **Haiku**: a Japanese form, three lines with five, seven and syllables respectively, presents a word picture related to the seasons.
5. Read aloud to students and stress the usage of imaginative comparisons (using like or as) in poetry.
6. When introducing poetic forms to students describe the following and let students find examples of each and examples within longer poems as well as create them.
 - a. Couplet: two-line stanza
 - b. Triplet: three-line stanza
 - c. Quatrain: four-lines-popular framework for poetry
 - d. Five-line verse: (not a limerick)
 - e. Sextet: six lines
 - f. Septet: seven line verse
 - g. Octet: eight line verse
 - h. Limerick: five lines of humorous or nonsense verse with an "a b b a" rhyming scheme.
7. Have students to look through Sunday magazines in the newspapers and in other weekly periodicals to select pictures and words at random. After selecting pictures and words, have students to create poetic forms by using their selected items. For example, a picture of a barn and the words *night, rusty, rain, leader*, use these items to create some type of poetry.
8. If there are local poetry writers in the community, invite them to share their experiences with students. You might ask them to bring along some of their favorite creations.
9. Provide a chance for students to exhibit their poetic creations. This can be done by having students to compile a class anthology. Also students may want to submit their creations to *Ebony Jr., Highlights for Children, Wee Wisdom* and *Jack and Jill*.

VII. Evaluation

A. Course

1. Do activities relate to the objectives of the course?
2. Do activities allow for the use of materials?
3. Do activities trigger student interest?
4. Are objectives clear as to cognitive level?
5. Are objectives clear as to affective level?

B. Student

Did the student

1. experiment with various types of poetic forms?
2. create imagery in poetic writings?
3. write poetry creatively?
4. use imaginative comparisons in poetry works?
5. express an enjoyment in reading poetry?
6. express an enjoyment in listening to poetry?
7. reveal feelings in creative works?
8. share creative works openly?
9. take advantage of having poetic works published?

C. Class

1. The class will develop an anthology.
2. Each student will compile a collection of his or her own works.

OUR FUTURE ON THE COASTS

This mini-course is designed to introduce and explain the Coastal Zone Management (CZM) Act passed by Congress in 1972. It is also designed to stimulate futuristic thinking in students regarding the increased demands on our coastal areas for available land and water access as our energy needs grow.

**Alfred A. Hiers
Valdosta City Schools**

Mini-course Title: OUR FUTURE ON THE COASTS

Target Group: Grades five through nine (Can be adapted to grades 10 through 12)

I. Student Objectives

Students will

- A. identify and discuss three major efforts currently being made to keep our nation's shoreline environmentally sound and ecologically safe;
- B. evaluate the Coastal Zone Management Act as a working tool for developing plans for providing adequate recreation opportunities on this nation's coasts, as well as improving our seaports while accommodating industrial growth and resource development;
- C. evaluate the Coastal Zone Management Act futuristically, as to how this nation's coasts can be preserved, used and developed in an orderly manner.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Evaluation

III. Instructional Materials

Publications from the American Petroleum Institute, Public Relations Department, 1801 K. St. NW; Washington, D.C. 20006

"A Short for All Purposes"

"Energy is Our Key to Tomorrow"

"New Frontiers for Energy"

"Petroleum Origins"

"Supplementary Energy Sources"

"What Everyone Should Know About Offshore Energy —
The Search for Oil and Natural Gas"

IV. Content and Suggested Questions to be Considered by Students

A. General Content and Questions

The original CZM Act of 1872 made federal money available to the states to help cover the costs of developing an overall program for managing the various facets of coastal development. The following questions have to be answered by the states involved.

1. What are the boundaries of its coastal zone?
2. Which of the land and water uses a state's program will attempt to manage in that area?
3. What are the designated areas of special concern within a state's coastal zone?
4. What types of control will a state use to protect certain coastal areas, as well as insure the appropriate use and development of resources within the coastal zone boundaries?
5. What are the broad guidelines from each state on priorities of uses in designated areas?
6. What steps will be listed in a description of the organizational structure a state will use to implement its CZM program?

B. Key Quotes from the "CZM in Summary" from the inside cover of "A Shore for All Purposes"

1. "Thirty states and four U. S. territories are directly involved with CZM. All fifty states will be affected by it. . . It covers local desires and States' rights and provides for federal oversight to insure that important national interests are met."
2. "The law reflects the notion that people need to organize and coordinate the multiple use of the country's coastal areas, at the same time placing an accent on needs that are more than local in nature."
3. "Basically, CZM is a program under which the coastal states decide how they will accommodate and manage the uses of the coastal zone. . . Every step of CZM development must be accompanied by appropriate review. Very simply, this means that the state CZM program must reflect or consider the concerns of all interested parties within the state."
4. "One of the primary or fundamental issues confronting CZM planners is our country's increased need for dependable and reliable domestic sources of energy. Energy is the key to the nation's continued well being and growth."

V. Activities and Strategies

A. Enrichment — Type I

1. Discuss in paragraph form the methods in which the following areas compete for the limited resources of the coastal zone.
 - a. Industry
 - b. Trade
 - c. Recreation
 - d. Housing
 - e. Environmental interest
2. Discuss various problems states may encounter as they try to meet certain requirements and regulations for federal funds, using the provided written outline of the major emphases of the original CZM Act of 1872.
3. Brainstorm, through open discussion, ideas as to how this nation's shoreline can be preserved, used and developed in an orderly manner in the future.

B. Follow-up — Type III

1. Conduct surveys to determine how much information about CZM is known to the general public and whether or not the general public feels CZM will be a useful tool in helping the various states solve their shoreline problems in an orderly manner.
2. Prepare a comprehensive study of energy sources being considered for tomorrow's uses, and show how the new technology in energy sources is really a mixture of the old and the new.
3. Develop an information packet for possible publication and public information on these supplementary energy sources.

Coal
Gas from coal
Oil from coal
Oil shale
Tar sands
Geothermal
Nuclear
Solar
Tide and ocean
Wind

VI. Evaluation

A. Course

1. Were major objectives met?
2. Are students more knowledgeable about the Coastal Zone Management Act than before?
3. Did students enjoy the unit?

B. Student

Students can

1. identify and discuss three major efforts being made to keep the coastal environment safe and sound.
2. deal realistically with future problems concerning the shoreline.

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MEGALOPOLIS: MECCA OR MONSTER?

This mini-course is designed to identify and explore the advantages or disadvantages of urban sprawl and its effects on surrounding areas.

June Barry - Habersham County
Kathy Kennedy - Clayton County
Meredith Rogers - Bulloch County
Helen Sanders - Stephens County

Mini-course Title: MEGALOPOLIS: MECCA OR MONSTER?

Target Group: Grades five through 12

I. Student Objectives

A. Cognitive

To develop problem-solving skills

B. Affective

Students will

1. develop the awareness that attitude toward city life is dependent upon many variables;
2. develop group interaction skills;
3. determine personal values regarding urban, suburban and rural life;
4. gain understanding of the present in order to solve future urban problems;
5. gain understanding that attempts to solve problems may cause conflicts among individuals with different values.

II. Thought Processes

- A. Fluency
- B. Elaboration
- C. Analysis
- D. Knowledge
- E. Application
- F. Responding

III. Instructional Materials

Globe filmstrips: *Urban World: Values in Conflict* (6 filmstrips, 6 cassettes, teacher's guide) available through Luke Callaway Associates, 1211 Beach Haven Rd., Atlanta, Ga. 30324, phone (404) 325-0304; *Cope*, simulation game by Interact, P. O. Box 262, Lakeside, Cal. 92040

Magazine articles: Newsweek, Time, Futurist, etc.

Newspaper articles: Groping the Future; Hollister and Thompson.

IV. Content

- A. Vocabulary
- B. Map skills and study
- C. Problems of an urban area — past, present and future.
- D. Population explosion
- E. Pollution
- F. Interview and research skills
- G. Values and their role
- H. Coping skills
- I. Urban versus rural life
- J. Group discussion skills

V. Questions to be Considered by Students

- A. How does life in an urban area differ from life in a rural area?
- B. What effect has technology had on life in either an urban or a rural area?
- C. Identify problems as you see them faced by urban and rural areas.

- D. What effect do varying value patterns have on life in either a rural or an urban area?
- E. What is your definition of progress?
- F. How would you measure it?

Teachers adapting this mini-course to their own use should design questions relative to the area in which they and students live.

VI. Activities and Strategies

A. Teacher

1. Show filmstrip *Megalopolis or Monster?*
2. Arrange field trips.
3. Locate and invite community resource people to work with the group.
4. Arrange for simulation game *Cope*.
5. Find a good map of the metropolitan area, if your students live in the suburbs. The students can show by means of colored pins or yarn, the various places where their families have lived; thus the pattern of movement from city to suburb will become clear.
6. Arrange a "child-swap" for a predetermined length of time with someone who lives in an entirely different environment — city versus rural.

B. Student

1. Brainstorm effects of urban problems on rural areas.
2. Survey school population for different types of local problems, compile data and tabulate results.
3. Categorize problems identified in #2; identify services established to correct problem. Identify person, office and department in charge.
4. List items used but not produced in rural areas.
5. Make a scrapbook/photo collection of community problem areas.
6. Take a field trip to a city to observe slum area, residential area and business area.
7. Interview people in charge of services. Ask them to evaluate their efficiency. Tape conversation.
8. Construct flowchart showing structure of local government and its jurisdiction.
9. Invite resource people to explain #8.
10. Brainstorm, "What to do about identified problems?" "How to implement solutions" (posters, letters to editor and clean campaign.)
11. Conduct group values discussions. (What is progress? Is it good?)
12. Make an individual values chart to determine preference — urban, suburban or rural. Give supportive arguments.
13. Design and build scale model of an ideal city or city of the future.
14. Write a scenario of a day in life in future city; include future technology.
15. Dramatize life in the city.
16. Print newspaper of future city or imaginary city; include editorial, cartoon and front page news.
17. Sit in on city council meeting.
18. Write to another school population. Swap ideas as to where they would like to live and why. Include advantages of their home area.
19. Map study showing concept of megalopolis — how it is conceivable that the megalopolis of New York spreads to Greenville, South Carolina. Use globe and maps to identify other megalopoli.

VII. Evaluation

A. Course

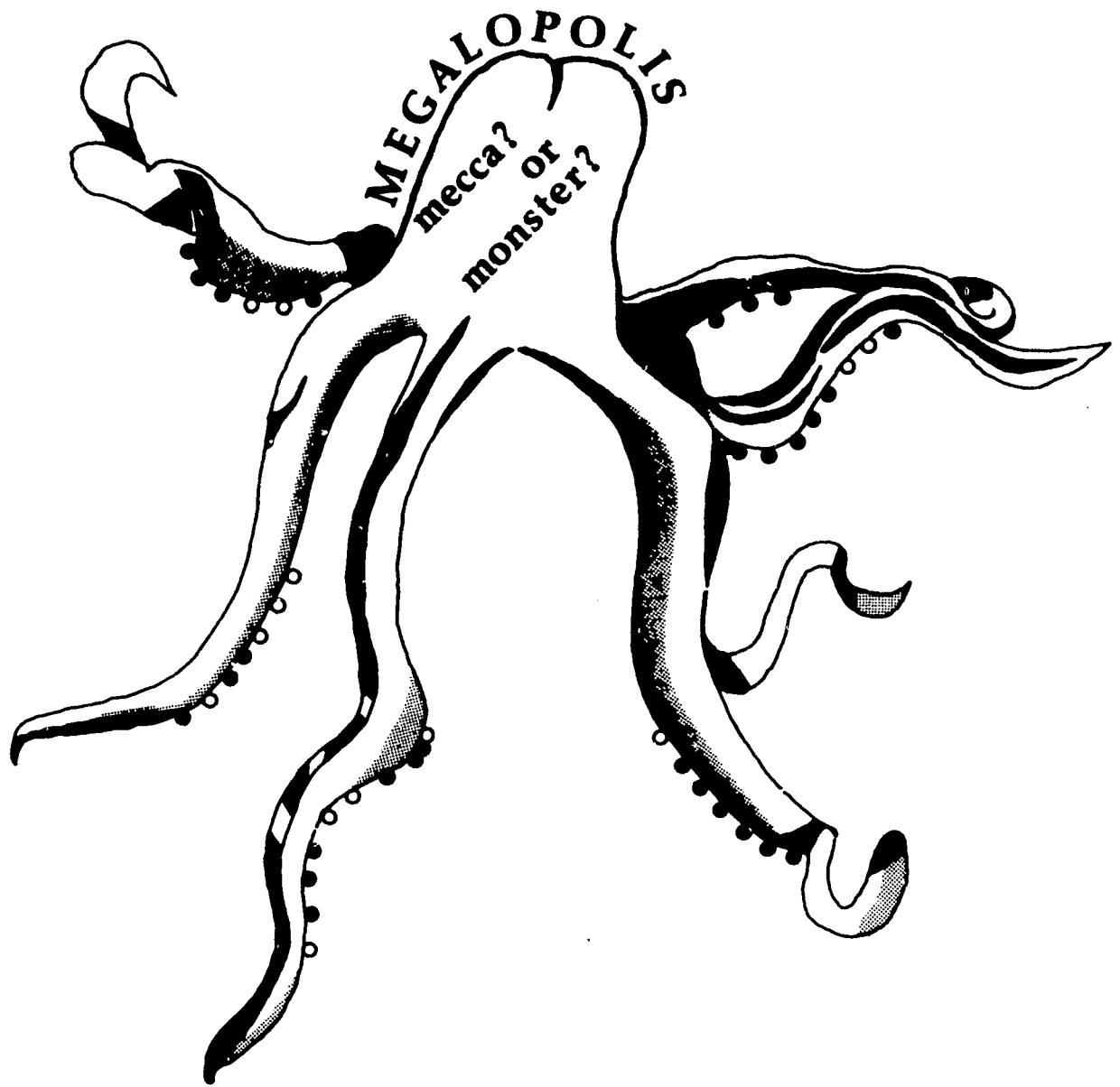
1. Were objectives met?
2. Did students enjoy the mini-course?
3. How should course be changed to be more effective?

B. Students

1. Are students able to demonstrate problem solving skills when given a problem (situation) to be solved?
2. Are students able to effectively demonstrate group discussion skills?
3. Can students identify those variables that affect attitudes toward city life?
4. Are students more aware of their own value patterns and the effect of personal values on urban, suburban and rural life?

Teachers when adapting this mini-course will need to determine for self their own ways for evaluating those objectives set forth.

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COMMUNITY HERITAGE

A mini-course filled with detailed descriptions of inviting, provocative activities that should help students learn about the history, legends and influences of their early communities and the ways in which these factors influence their lives and the area in which they live today.

**Leary Bell Finley
Rome City Schools**

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Mini-course Title: COMMUNITY HERITAGE

Target Group: Grades six through nine

I. Student Objectives

A. Cognitive

Students will

1. develop good research skills;
2. develop interviewing skills;
3. become aware of historical sights;
4. collect and organize projects related to local history.

B. Affective

Students will

1. gain a better understanding of the early history of local city or county;
2. gain a deeper appreciation of local city or county;
3. become familiar with local city or county and its environment.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Analysis
- D. Synthesis
- E. Evaluation
- F. Receiving
- G. Valuing
- H. Responding

III. Instructional Materials

The most important thing for students to learn in historical research is that their goal is to find the truth. With this in mind, they must learn certain procedures, the most basic of which is that the heart of genuine research entails locating and using primary sources. There are many local resources that can be tapped for information. Some of the more helpful are listed here.

A. People

1. Members of local veterans groups.
2. Members of DAR and UDC groups.
3. Residents of nursing homes and housing for the elderly.
4. Owners of old homes (especially if they have restored them themselves)
5. Local historical societies, preservation groups and genealogical societies.

B. Places

1. Local health department for vital statistics.
2. Office of local board of education for school records.
3. Churches and religious associations for early records.
4. Cemeteries
5. County courthouse for deeds and tax records.
6. Voting registrar's office for militia district polling information.
7. Local chamber of commerce.
8. Public library collections of state and local history.
9. State archives.

C. Publications

1. *Historical Statistics of the United States: Colonial Period to 1970*. U. S. Government Printing Office, two volumes, \$26.00.
2. National Council for the Social Studies, 1201 16th St. NW, Washington, DC 20036; *How To Do It Series*, \$.25 each.
#3 "How to Use Local History"
#11 "How to Locate Useful Government Publications"
#13 "How to Utilize Community Resources"
#23 "How to Teach Library Research Skills"
3. *Teaching Local History in Your Classroom*. Dr. Donald W. Whisenhunt. All grade levels. \$2.50 Stock #6-09-019. Instructional media, Inc., 8141 E. 44th St., Tulsa, Okla. 74145.
4. County "Ghost Town" maps. Write to see if your county has been mapped. \$3.00 each. Treasure Index, Box 101G, Bronx, New York 19068.

IV. Content

- A. Folklore
- B. Life in the past as seen through the eyes of senior citizens.
- C. Comparison of life in the early 1900s with present day life.
- D. History of a given area.
- E. Factors that lead to the settlement of a given area.
- F. Oral history
- G. Religions found in the area.
- H. Research skills

V. Questions to be Considered by Students

- A. What folklore is native to my community?
- B. What is meant by folklore?
- C. How does life today differ from life 70 years ago?
- D. What is oral history? How does one go about collecting it?
- E. Did specific conditions lead to the settlement of my community?
- F. What religious factors contributed to the settlement of my community?
- G. Are most of the people living in the area native to the area?

VI. Activities and Strategies

A. Teacher

1. Lead an introductory discussion on folklore and the community.
2. Arrange for community resource people to talk to the class.
3. Collect materials that may be of help to students.
4. Arrange for an elderly native to talk to the class.
5. Instruct students in interview skills and techniques.
6. Stress with students the need for accuracy in collecting data.
7. Provide students with ways of checking accuracy.
8. Invite a lawyer to discuss with the class the moral and legal aspects of interviewing.

B. Students

1. Collect, compile and present to class legends and myths of the area. Compilation may include ghost stories, religious developments, humorous happenings, medical magic and depictions of cultural events of the past.
2. Take pictures and slides of old homes and historical buildings.
3. Publish legends and myths, giving credit both to students and interviewee.
4. Interview natives and senior citizens.

5. Develop a bingo game that includes streets, avenues and places of interest within the city.
6. Collect and compile information on development and naming of city or county.
7. Research, collect and compile the history of the school system.
8. Collect information and pictures on early days of the community. Construct wall hangings or quilt tops.
9. Present projects related to city or county concerning yesterday, today and tomorrow.
10. Construct or draw maps of local area or community.
11. Participate in historical tours of community.

VII. Evaluation

A. Course

1. Was the course enjoyable?
2. Were objectives met?
3. How can the course and its activities be improved?

B. Student

Students will

1. demonstrate the use of improved research skills including interview techniques;
2. be evaluated for improved writing skills;
3. reflect through improved group discussion, skills information concerning their past, oral history data, an understanding of myths and folklore as related to the community;
4. demonstrate a better understanding of the senior citizen within the community and his or her role in making the community.

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SPEED READING

This mini-course is designed to help students acquire techniques and procedures to increase their speed in all areas of reading.

**Helen Solomon
Walker County**

Mini-course Title: SPEED READING

Target Group: Grades six through 12

I. Student Objectives

A. Cognitive

Students will

1. increase the class average reading speed to double the beginning speed;
2. finish reading assignments in less time;
3. perform study reading more efficiently.

B. Affective

Students will enjoy reading more books for pleasure in less time.

II. Thought Processes to be Developed

Comprehension

Maintain and build reading comprehension while increasing reading speed.

III. Instructional Materials

A. Test

Diagnostic reading test based on needs identified by student and teacher.

B. Reading Materials

1. Interesting, easy books for class reading and practice — may be identical
2. Newspapers
3. Magazines

C. Other Materials

Timer (may be useful)

IV. Content

A. Deficiencies (as measured by pre-test)

1. Vocabulary
2. Speed
3. Comprehension

B. Techniques of speed reading

Information on techniques

C. Comprehension skills

D. Speed measures

E. Reading tips

F. Newspaper reading

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V. Questions to be Considered by Students

- A. What factors will motivate me to read faster?
- B. How will I apply my new skill?
- C. How does reading for factual knowledge differ from reading for pleasure?
- D. Does pleasure reading require the same level of comprehension that fact gathering reading requires?

VI. Activities and Strategies

A. Student

1. Find books and read fast for pleasure at home.
2. Keep track of improving reading speed.
3. Do all homework by speed reading methods.
4. Keep a daily log of items read.
5. Practice eye movements.
6. Make a graph showing rate of speed increase.

B. Teacher

1. Administer diagnostic pre-test.
2. Explain the speed reading process.
3. Conduct timed practice sessions, gradually forcing increases.
4. Give comprehension tests periodically.
5. Explain special study and newspaper reading and allow class practice time.
6. Administer post-test.
7. Locate materials to be used by students.

VII. Evaluation

A. Course

1. Did the classes reading speed average increase? Double?
2. Did the students enjoy the course?

B. Student

1. Pre and post reading speed and increases.
2. Amount of effort put into practice.
3. Pre and post amount of time spent on homework as well as improved quality of work.
4. Amount of time spent reading for pleasure — increased or decreased?

C. Dissemination

1. Results of study can be published in school newspaper.
2. Share results with parents.

ADVERTISING AND PERSUASION: A NEED FOR CRITICAL THINKING!!

This mini-course is designed to be used with intellectually gifted junior high school students. The information contained in the following pages is intended only as a guide for use by facilitators/teachers in gifted education. Obviously, the course is not written in lesson plan format. Only activities and materials are suggested so that any teacher can develop lessons appropriate to his or her particular situation. It is also assumed that each teacher will develop a pre/post-test. The author of this course has written a more complete, detailed plan to be used in her classrooms.

It is estimated that a course based on this outline would last approximately nine weeks if one meets with a group five days per week, one hour per day. However, it can be modified to a shorter or longer period. In general, there are more activities and accompanying materials included than might be needed by most classes. Therefore, the teacher may feel free to be selective. Also, each activity can be modified so as not to repeat a topic that has already been covered. It is important to notice that there is an ongoing course evaluation in this mini-course (see the Appendix for **Activities and Strategies**). Again, the guide questions listed for evaluation are only suggestions.

In general, the activities in the course are aimed at the higher thought processes and there is heavy emphasis on creativity and critical thinking.

Sue Clapp
Columbia County

Mini-course Title: ADVERTISING AND PERSUASION: NEED FOR CRITICAL THINKING

Target Group: Grade seven

I. **Goals and Objectives**

A. **Goal**

Students will, through a study of advertising and propaganda techniques, develop an awareness of some persuasive elements in their lives and increase their skills in critical and creative thinking.

B. **Objectives**

1. Teacher will

- a. provide opportunities for students to use various media in research;
- b. help students develop an awareness of some persuasive elements in their every-day lives;
- c. make students aware of several professions involved in persuasive activities;
- d. provide students opportunities for both individual and group activities in decision making and problem solving;
- e. plan and execute a field experience to a local advertising agency or make arrangements for a person knowledgeable in the field of advertising to visit the class;
- f. familiarize students with terms used in advertising;
- g. facilitate the development and presentation of creative ad campaigns;
- h. provide opportunities for students to use current educational materials designed to acquaint them with types of advertising and persuasion;
- i. acquaint students with agencies which serve to protect consumers;
- j. provide practical experience in analyzing and evaluating advertisements.

2. **Students**

- a. **Cognitive** — Upon completion of this unit, students should be able to
 1. demonstrate ability to be both critical and intelligent in defense against persuaders by analyzing and evaluating various advertisements;
 2. explain why one should study advertising techniques;
 3. evaluate an ad aimed at own age group or sex as to success and reasons for the success with him or her individually;
 4. define critical thinking, persuasion and advertising;
 5. explain three ways in which one can relate to persuasive messages;
 6. differentiate between various types of ads;
 7. distinguish between product information and unsupported claims;
 8. recognize various forms of persuasion and list sources for them (forms of media);
 9. select and categorize ads aimed at specific groups including their own age group;
 10. identify at least four types of professionals whose job it is to persuade;
 11. state the major function of an advertisement;
 12. explain why advertising is necessary in the free-enterprise system;
 13. recognize types of persuasion (propaganda) when used in ads;
 14. identify one of the best defenses against spending money foolishly;
 15. match sample advertising schemes with correct terms;
 16. evaluate own work assignments based on specified criteria;
 17. name and describe at least two agencies whose function it is to protect consumers;
 18. create a product for a specific audience along with brand name and slogan;
 19. design an effective layout based on specified criteria;

20. design and display an effective billboard for an original product;
21. present completed products and ad campaigns to classmates;
22. assume responsibility as group members in completing an original ad campaign;
23. formulate questions, based on interests acquired during unit activities, to ask a professional in the field of advertising;
24. demonstrate his or her critical thinking skills and knowledge of advertising by exhibiting satisfactory performance (more than 85 percent) on a post-test;
25. demonstrate ability to do individual research (direct own activities, find and organize materials).

b. **Affective** — During the process of this unit, the student should demonstrate

1. willingness to participate in groups and work independently;
2. maturity in accepting responsibility;
3. respect for others' views/opinions;
4. ability to relate to others' wants and needs;
5. willingness to explore a new field of knowledge;
6. standing up for his/her own beliefs;
7. acceptance that one's individuality must be subordinated at times while working in a group to complete a group task;
8. independence in making value judgments;
9. industry and self-discipline;
10. cooperation in group activities;
11. recognition of the role of systematic planning in solving problems;
12. self-reliance in working independently.

II. Thought Processes to be Developed

- A. Knowledge and memory skills
- B. Application
- C. Comprehension
- D. Critical thinking
 1. Analysis
 2. Evaluation
- E. Problem solving
- F. Inquiry process
- G. Imaginative thinking
- H. Creative thinking

III. Instructional Materials

There is a large variety of materials available for use in the study of types of persuasion. The following list contains materials which have been examined and found useful for this particular unit.

A. Commercial Materials

"Consumer Protect" (Unit 13)
Game-Sim, Series 1 (Kit — 85 Simulations)
 EMI
 Box 4272
 Madison, Wis. 53711

Propaganda to Soft-Sell (kit)
 2 FS, 2 Cass.
 Guidance Associates
 757 Third Ave.
 New York, N.Y. 10017

Advertising: The Image Makers (kit)
1 FS, 1 Cass., TM, Student Booklets, posters
Xerox Educational Publications
245 Long Hill Rd.
Middletown, Conn. 06457

Critical Thinking — Book One
Midwest Publications Co., Inc.
P. O. Box 129
Troy, Mich. 48099

The "Me" in Media (kit)
1 Cass., Student Booklet
Media Materials, Inc.
2936 Remington Ave.
Baltimore, Md. 21211

or

The Power of the Media (kit)
4 FS, 4 Cass., Program Guide
Coronet
65 E. South Water St.
Chicago, Ill. 60601

Consumer Be Warned: Frauds and Deceptions (kit)
1 FS, 2 Rec.
Current Affairs Films
24 Danbury Rd.
Wilton, Conn. 06897

Let The Buyer Beware (kit)
6 FS, 3 Cass.
Eye Gate House
Jamaica, N.Y. 11435

AGENCY (Simulation Game)
INTERACT
Box 262
Lakeside, Cal. 92040

B. Miscellaneous materials

Numerous examples of types of media (magazines, newspapers, pamphlets, posters, etc.)

Art supplies

Filmstrip and slide-making materials which can be purchased in kits

Sample advertisements

Old periodicals

Audiovisual equipment

Record player

Filmstrip previewer

Cassette player/recorder

Movie screen

Filmstrip projector

Television

Radio

Video tape machine

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IV. Content

- A. Vocabulary associated with persuasion especially as it relates to advertising
- B. People who attempt to persuade others for profit or personal gain
- C. Types of fraud and deception used in advertising and persuasion and analysis of schemes
- D. Media and their influence on individuals
- E. Process by which an advertising campaign is developed
- F. Jobs in an advertising agency
- G. Consumer protection
- H. Advertising and its role in the free-enterprise system
- I. The need for intelligent and critical examination of all persuasive messages

V. Questions to be Considered by Students

- A. What is critical thinking and how does it relate to me and types of persuasions?
- B. How can I react intelligently to persuasive messages?
- C. What types of media are used to persuade?
- D. What propoganda techniques and advertising schemes are used in an attempt to persuade individuals everyday? How can one recognize them?
- E. What can an individual do when he finds he has been "ripped off"?
- F. How is an advertising campaign developed?
- G. What types of jobs are available in an advertising agency?
- H. What are my needs? My desires?
- I. Who or what serves as the protector for consumers?

VI. Activities and Strategies (See Appendix for details on each activity.)

- A. Individual research/peer teaching
 - 1. *Ad Search*
 - 2. *Advertising Survey*
 - 3. *Investigation "P"*
 - 4. *Ad-Alyzer I*
 - 5. *Ad-Alyzer II*
 - 6. *Mini-Promotion*
- B. Large group activity/group decision making
 - 1. *Group discussions after filmstrips, presentations and individual research*
 - 2. *Audience*
 - 3. *The Ad Game*
- C. Simulation games/small group activity/group decision making
 - 1. *Ad Rater (Simulation)*
 - 2. *Analyzing Phychological Ads (Simulation)*
 - 3. *AGENCY (Simulation)*
 - 4. *The Propaganda Game (Board Game)*
- D. Role playing/problem solving
 - 1. *To Buy or Not To Buy*
 - 2. *Complaint Department*
- E. Brainstorming — Throughout this unit there are opportunities for the facilitator to initiate brainstorming activities which relate to advertising and deception as well as persuasion in everyday life.

F. Use of Community Resources

1. Field experience to an advertising agency
2. Visit to the class by
 - a. an ad copywriter or someone else knowledgeable in the field
 - b. a representative from a consumer protection agency such as the Better Business Bureau or the Federal Trade Commission.

VII. Evaluation

A. Course

1. **Subjective**
 - a. Enthusiasm and motivation exhibited by students
 - b. Students' comments as to effectiveness on a Course Evaluation Sheet completed at the conclusion of the unit
2. **Objective**
 - a. Quality of work completed by students during the course of the unit
 - b. Degree of improvement made by students as shown by comparison of pre- and post-test scores

B. Student

1. **Subjective**
 - a. Active participation throughout the unit
 - b. Creativity exhibited (originally, risk-taking)
 - c. Cooperation with others throughout the unit
 - d. Commitment to individual tasks
2. **Objective**
 - a. Activities plus completed notebooks (performance evaluation)
 - b. Performance on the post-test (in line with objectives and content)

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THE RIGHT HAND AND THE LEFT

This mini-course is designed to give students an opportunity to explore the good and the evil of man. All materials, activities and evaluation procedures are suggestions only.

Carol Hoelzer
Hall County

Mini-course Title: THE RIGHT HAND AND THE LEFT

Target Group: Grades seven and eight

I. Objectives

A. Overall Objective

Students will arrive at a working, contemporary definition of *good* and *evil*.

B. Underlying Objectives

Students will

1. interpret various concepts of evil and good in literature through the use of various selected short stories, myths and novels;
2. interpret various concepts of evil and good as represented in the visual arts of paintings, sketches and posters;
3. compare and contrast two individuals — one villain, one hero — as representative of an historical era;
4. delineate the discrepancies and similarities between two contemporary viewpoints of what makes man evil;
5. create a perfect society through the simulation game *Utopia* (by Interact).

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Evaluation

III. Materials

- A. *An Inquiry Into Good and Evil* (Middle School Edition) The Center for Humanities
- B. Selected value sheets by Argus
- C. Short stories selected from the *PREP* program by Arista and other anthologies
- D. Myths from various cultures found in anthologies and mythology books
- E. The novels *A Separate Peace* by John Knowles (the subtle evils of mankind) and *Lord of the Flies* by William Golding (the more pronounced evils of mankind), for example
- F. *Art and Man* magazine — "The Haunted Vision" issue and art books from the classroom and library
- G. Various biographies and histories
- H. Guest speakers — a psychologist and a policeman, for example
- I. *Utopia* — a simulation game by Interact

IV. Content

- A. Mythology
- B. Evils of mankind
- C. Values held by mankind
- D. Philosophy
- E. History
- F. Biographies of people

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V. Activities and Strategies

A. Type I — Introductory activities

1. Previewing strategies include debating and role-playing situations of moral dilemma.
2. Viewing the slides and writing down particular content for discussion purposes (i.e. what each student finds striking or controversial).
3. Discussing the content of the slides.

B. Type II — Activities

Students may

1. read various myths, short stories and novels and discuss the moral dilemma and character reactions to these;
2. select any five paintings, sketches or posters portraying man's evil and write an interpretation for each based on its historic framework; select any five paintings, sketches or posters portraying man's goodness and write an interpretation for each based on its historic framework.
3. research a villain and a hero of a particular historical period (their choice from a list of historical periods) and write a comparison and contrast of these personalities. This activity may be adapted into role playing; one student selects the villain and researches him, another selects the hero, and their "confrontation" could be presented to the class.
4. listen to guest speakers who have different viewpoints on "What Makes Man Evil?" and discuss the discrepancies and similarities.

C. Type III — In-depth studies

Product-oriented students may construct a perfect society (using *Utopia* by Interact). This simulation requires a week at least and is adaptable to being condensed.

VI. Evaluation Procedures

- A. Students' written work should be turned in and graded.
- B. The role-playing alternative for the hero-villain activity should be graded on the amount of research displayed in the presentation whose length could be predetermined.
- C. Participation and points earned determine the grades for *Utopia*.
- D. A final evaluation should consist of each student writing a working, contemporary definition of *good* and *evil* based on their studies.

GREEK AND ROMAN MYTHOLOGY

This mini-course gives students an opportunity to know and appreciate Greek and Roman history and mythology. Also, students will have an opportunity to experience creativity through writing and art. This course may be taught in conjunction with Greek and Roman history or it may be used as a separate unit covering approximately nine weeks with meeting sessions five hours per week.

**Ann Paine
McIntosh County**

Mini-course Title: GREEK AND ROMAN MYTHOLOGY

Target Group: Grades seven through 12

I. **Student Objectives**

A. **Cognitive**

Students will

1. determine the creation of the Greek world, the Greek gods and the earliest heroes;
2. outline the early religion of the Greeks and Romans;
3. relate the great myths of love and adventure;
4. analyze the lives of the heroes of the Trojan War and the causes of the war.

B. **Affective**

The student will appreciate

1. the way the Greek race thought and felt ages ago;
2. the Greek world of beauty in architecture, sculpture, dress and art;
3. the great writings of Homer, Virgil, Socrates and Ovid.

II. **Thought Processes to be Developed**

A. **Cognitive**

1. Analytical thinking
2. Critical thinking
3. Problem solving

B. **Affective**

1. Evaluative thinking
2. Appreciation of Greek aesthetics

III. **Instructional Materials**

History of Ancient Greece and Rome — published by Alyn and Bacon (used for background history)

Mythology — by Edith Hamilton (text used for sixth and seventh grade)

Myths and Folk Tales Around the World — by Potter (text used by fourth and fifth grade)

Transparancies—Ancient Greece and Rome — by Marilyn Chase

Other resource books may be obtained from the school and public library which relate to the study. Particularly useful will be the Time Life series on Ancient Greece and Rome.

IV. **Content**

1. Brief history of ancient Greece and Rome
2. Brief study of Greek and Roman art, architecture, sculpture and dress
3. Titans and the 12 great Olympians
4. The creation of the world explained by the ancient Greeks
5. Demeter and Dionysus
6. Prometheus and Io
7. The Flower Myths
8. Myths of love and adventure
 - a. Cupid and Psyche
 - b. Pyramus and Thisbe

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- c. Orpheus and Euridice
- d. Pygmalion and Galatea
- 9. Quest of the Golden Fleece
- 10. Heroes before the Trojan War
 - a. Perseus
 - b. Theseus
 - c. Hercules
 - d. Atalanta
- 11. Cause and events of the Trojan War
- 12. The Fall of Troy
- 13. The adventure of Odysseus
- 14. The adventures of Aeneas

V. Questions to be Considered by Students

1. Explain the growth and contribution of the Greek city state.
2. Describe the religious, political and aesthetic contributions which belonged to Greece and were later adopted by the Romans.
3. Describe the major works of Greek and Roman art, architecture, sculpture and dress. Contrast these major works.
4. Identify and describe the Titans and the 12 great Olympians.
5. How did the early Greeks explain the creation?
6. Describe the two great gods of earth, Demeter and Dionysus.
7. Relate the Flower Myths.
8. Relate the myths of love and adventure.
9. Tell the background of the quest of the Golden Fleece.
10. Who were the great heroes before the Trojan war and what feats did they accomplish?
11. Describe the causes of the Trojan War.
12. Describe the events of the Trojan War.
13. Describe the Fall of Troy.
14. Explain how the Trojan War could have been prevented.
15. Compare and contrast modern civilization with ancient Greek and Roman civilization.

VI. Activities and Strategies

1. Read and comprehend text — round table discussion of material with teacher and other students.
2. Plan and write a booklet of modern myths based on background knowledge of ancient myths.
3. Write an essay on modern heroes based on background knowledge of ancient heroes.
4. Build a Greek temple such as the Parthenon (group project).
5. Design a mural depicting scenes from Greek or Roman mythology.
6. Tell orally to the class several myths which are not studied by the class as a whole.
7. Design a family tree of Greek or Roman gods.
8. Act out the adventures of Odysseus and Aeneas before the class.
9. Produce a Greek play based upon Greek mythology.
10. Games: Who's Who in Greek Mythology and the Trojans versus the Greeks war strategies game.
11. Write, edit and print a newspaper which might have appeared in Ithaca on the day Odysseus returned home and killed the suitors.
12. Plan and carry out The Feast of Saturnalia with each student dressed in Roman costume and representing a Roman god or goddess.

VII. Evaluation of Course

A. Student

1. Oral — Socratic dialogue between students concerning the value of course and content.
2. Written — Essay: Compare and contrast the positive aspects of modern civilization with the positive aspects of the civilization of ancient Greece and Rome.

B. Teacher

1. Oral grades
2. Essay grades
3. Project grades
4. Test grades
5. Students own evaluative grades of their performance

C. Dissemination

1. Participate in social science fair with each individual or group project.
2. Feast of Saturnalia — Plan and execute the Roman feast which celebrates the god Saturn. Activities include parade of gods and goddesses in costume, the Chair of Forgetfulness, exchange of gifts, release of prisoners for the feast (a Roman custom), toasts to the god Saturn, oratory from the guests and eating of the grand feast.
3. Play production — Students write, produce and perform their own play based upon Greek mythology.

WRITING A BOOK FOR A YOUNG CHILD

This unit helps the student to appreciate the amount of work that goes into writing a book for young children and encourages creativity by requiring each student to write, illustrate and read his own book to an audience.

Maxine Wells
Camden County Schools

Mini-course Title: WRITING A BOOK FOR A YOUNG CHILD

Target Group: Grades seven through 12

I. Student Objectives

A. Cognitive

Students will

1. read several books for young children to become familiar with them;
2. write a rough draft of a story for a child;
3. proofread the story making necessary corrections in grammar and punctuation;
4. proofread the story looking for logical divisions in the story, for pages and for illustrations;
5. draw preliminary sketches of illustrations including placement of words on the page as part of the overall design;
6. design an appropriate cover;
7. print or type the finished work and make the final illustrations;
8. read the completed book to a group of young children.

B. Affective

Students will

1. appreciate the amount of work that goes into writing a book for young children;
2. encourage original thinking and imagination through the production of a book for young children;
3. become familiar with books for young children.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Analysis
- E. Synthesis
- F. Evaluation
- G. Receiving
- H. Responding
- I. Valuing
- J. Conceptualizing
- K. Internalizing

III. Instructional Materials

- A. White paper
- B. Construction paper
- C. Cardboard
- D. Crayons
- E. Felt tip pens
- F. Scissors
- G. Typewriter (preferably a primary one)
- H. Lettering stencils
- I. Vocabulary list of words used by young children
- J. Laminator or clear contact paper
- K. Spiral binder
- L. Staples, yarn or other methods of binding

IV. Content

Creative writing

V. Activities and Strategies

- A. A visit to the library or teacher will bring in some examples of books for young children. After these have been read and examined by the students a discussion will follow concerning the art work, placement of text with art work, vocabulary used, title page and table of contents (if necessary).
- B. Writing the rough draft.
- C. Proofreading the rough draft for corrections of grammar and punctuation.
- D. Deciding where illustrations will be needed and how to work these in.
- E. Drawing the illustrations.
- F. Designing and making the cover.
- G. Writing or typing the text.
- H. Laminating and binding the finished book.
- I. Reading the finished book to a young child or group of young children.

VI. Evaluation

- A. A teacher evaluation of the completed book including the story, illustrations and interest to young children.
- B. Student will evaluate the reaction from the group of young children to which he or she reads his or her story.

VII. Dissemination

- A. Process — Reading the completed books to a group of young children.
—Placing the completed books in the school library for other young children to read.
- B. Product — The finished book.

**REACHING IN AND REACHING OUT:
MAN'S RELATIONS TO SELF AND FELLOWMAN**

Through the study of the beginnings of messages, scripts and the importance of communication, students improve their skills in communicating with others.

Pat Coles — Henry County
Nancy Houghtaling — Butts County
Monica Walters — Lamar County
Margaret Weldon — Spalding County

**Mini-course Title: REACHING IN AND REACHING OUT:
MAN'S RELATIONS TO SELF AND FELLOWMAN**

Target Group: Grades eight through 12

I. Student Objectives

A. Cognitive

Students will

1. outline initial film strip "Message Beginnings;"
2. repeat one basic idea presented in film strip;
3. express philosophy of film strip entitled "My Scripts;"
4. write brief resume of each film strip;
5. relate characters in film strip to characters in literature, for example, La Coeur Hardy in "Fifty-First Dragon;"
6. dramatize message from film strip (character types with which students are familiar);
7. prepare slide show on necessity for communication.

B. Affective

Students will

1. appreciate message of program;
2. examine further possibilities of interaction;
3. recognize unstated assumption;
4. hypothesize culture without communication;
5. express comprehension of need for self-realization (may take form of original musical score, poem or essay);
6. distinguish between various philosophies.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Analysis
- E. Synthesis
- F. Evaluation

III. Instructional Materials

Journeys in the Humanities: Part 5; produced by Encyclopedia Britannica Educational Corporation, 1975 — three film strips

Insights and Ideas, "Human-I-Ties of Language," handbook; published by Encyclopedia Britanian Corporation, 1975.

Additional literary selections left to discretion of individual instructor

IV. Content

Cassette tapes and films from the Human-I-Ties of Language

- A. Messages Beginnings
- B. A Universe of Messages
- C. My Scripts
- D. Selections from student handbook

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V. Questions to be Considered by Students

- A. How important is communication?
- B. How well do persons I know communicate?
- C. How well do I communicate with others?
- D. How could I improve my method of communication?

VI. Activities and Strategies

A. Student

1. Participate in group discussion.
2. Read assigned literature selection, outline.
3. Prepare slide show on one facet of project (group assignment).
4. Create some original offering (art, music or literature).

B. Teacher

1. Present outline of unit.
2. Play each cassette, show film strip.
3. Lead discussion.
4. Introduce literary selections.
5. Prepare students for writing unit.
6. Provide time for independent study (creative work).

VII. Evaluation

A. Course

1. Individual file of student's efforts will be maintained.
2. Effectiveness of mini-course will be judged by students' independent projects as well as group involvement.

B. Student

Student will perform with 80 percent effectiveness.

ANATOMY OF A COMMUNITY

This course is planned to help students understand the organization of local government through participation in role playing and actual contact with local officials during field trips and officials' classroom visits.

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Mini-course Title ANATOMY OF A COMMUNITY

Target Group: Grades eight through 12

I. Student Objectives

A. Cognitive

Students will

1. become knowledgeable of the plan, departments and function of the local government — executive, legislative and judicial;
2. examine local government as it relates to the framework of the community;
3. examine various jobs and job skills within the organization of the local government.

B. Affective

Students will

1. list characteristics that pertain to leadership and evaluate themselves for these characteristics;
2. evaluate own personality for suitability to various job types;
3. become aware of the responsibilities of a good citizen and how this relates to the framework of the community;
4. develop insight into the cooperative role of government and citizens toward a successful community.

II. Thought Processes to be Developed

- A. Critical thinking
- B. Problem solving
- C. Leadership skills
- D. Oral and written expression
- E. Creativity
- F. Values
- G. Group dynamics
- H. Career awareness
- I. Societal awareness
- J. Cultural awareness

III. Instructional Materials

A. County manual

1. Charter
2. Organizational plan
3. Job descriptions

B. Vocabulary lists — three local newspapers

IV. Content

- A. Local government — legislative, executive, judicial
- B. Leadership skills
- C. Value clarification

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V. Questions to be Considered by Students

- A. Effectiveness of local government in meeting needs of all its people.
- B. What makes a good citizen?
- C. Personal qualifications, leadership, various government jobs.
- D. What is student's role for the future?

VI. Student Activities and Strategies

- A. Field trips
 - 1. City hall — visit departments with department heads.
 - 2. Session of court
- B. Visits by county or city commissioners
- C. Role play session of court — mock trial, jurors decide verdict.
- D. Submit community problem (local newspaper), students offer solutions.
- E. Brainstorm leadership characteristics.
- F. Group discussion
 - 1. Leadership characteristics
 - 2. Various job qualifications

VII. Evaluation

A. Course

- 1. Did the students enjoy their work?
- 2. Did the course accomplish the objectives set forth?

B. Student

Can the students apply the concepts to which they have been exposed?

**CAREERS
INDEPENDENT STUDY**

This mini-course is designed to explore careers through an independent study experience coordinated by the teacher of the gifted in connection with the regular English program.

Eleanor Hoomes
Heard County

Mini-course Title: CAREER EDUCATION

Target Group: Grades eight through 12

I. Student Goals and Objectives

A. Goals

Students will

1. become familiar with career planning and decision making;
2. undergo self-evaluation and clarification;
3. develop interpersonal skills;
4. explore careers and job preparation;
5. improve work habits and attitudes;
6. increase educational and occupational information experiences;
7. become aware of employment skills.

B. Objectives

Students will

1. become familiar with three occupations or professions;
2. discover their individual aptitudes and interests.

II. Instructional Materials

1. *Career Opportunities* published by Career Information Service, New York Life Insurance Co., Box 51, Madison Square Station, New York, N.Y. 10010.
2. *Encyclopedia of Career and Vocational Guidance*. Ferguson, Doubleday and Company, (2 vols.).
3. *Dictionary of Occupational Titles* (2 vols.) and *Occupational Outlook Handbook* (10th edition), both for sale by Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402.
4. *What About College?* published by R. L. Polk & Co., 2001 Elm Hill Pike, Nashville.
5. *After High School What?* published by R. L. Polk & Co., 2001 Elm Hill Pike, Nashville, Tenn., 1973.
6. College catalogues
7. Vocational-technical catalogues.
8. Pamphlets and brochures on occupations and professions such as those that can be ordered from Occupational Information Center for Education-Industry, 2970 Peachtree Rd. NW, Suite 316, Atlanta, Ga. 30305.
9. Information on careers can be obtained from the local Georgia Employment Security Agency.

III. Strategies and Activities

- A. Students may become familiar with three occupations or professions by doing the following.
 1. Interviewing at least one person in each occupation area.
 2. Reading material about each area. (See Suggested Sources of Information.)
 3. Talking to a counselor or other qualified adult about the world of work and the possibilities.

4. Answering the following questions in each area.

- a. What is the occupation?
- b. What is the work like?
- c. What are the advantages and disadvantages of the job?
- d. How great is the need for the product or service supplied?
- e. How well does the job pay?
- f. What are the chances for advancement?
- g. What rewards are there besides financial compensations?
- h. What are the working hours? What are the days off? vacations?
- i. What special abilities, training and personality traits are required?
- j. Where could you train? How long would it take?
- k. Why do you think you would like this job?
- l. What is the future of the job?
- m. Will it be necessary for retraining or continuous training?

B. Students may discover aptitudes and interests by

1. taking the GATB either at the labor department or Carroll Tech and receiving an interpretation;
2. taking an interest inventory (such as the Strong or Kuder) and receiving an interpretation.

IV. Evaluation

Students may be evaluated on the basis of a written report on one occupation area, an oral report on one and a private conference with the teacher.

THE ANATOMY OF CHANGE

A mini-course in which the student must use high-level thought processes to define change, to understand the impact of change, to recognize reaction to change and to learn how man adapts to change.

Adaptable to any subject area in the ten through 12 grade levels.

June Streadorf
Douglas County

Mini-course Title: THE ANATOMY OF CHANGE

Target Group: Grades 10 through 12

I. Student Objectives

Students will

- A. understand the use the process of analytical reasoning;
- B. define the concept of change;
- C. formulate generalizations about the dimensions and complexity of change;
- D. translate generalizations into hypotheses;
- E. evaluate the consistency of each hypothesis with given information and assumptions;
- F. predict the consequences of each hypothesis;
- G. develop respect for contributions of fellow group members;
- H. analyze own value system and recognize prejudices;
- I. strengthen self-concept;
- J. evaluate progress.

II. Thought Processes to be Developed

- A. Analytical reasoning (analysis)
- B. Integrative reasoning (synthesis)
- C. Evaluation
- D. Translation
- E. Interpretation
- F. Application

III. Instructional Materials

A. Educational Packets

Clear Thinking: How To Improve Your Thinking Skills, I & II from The Center for Humanities.

A Definition of Man from Scholastic Humanities Program.

China: Tradition and Change from Scholastic Humanities.

The Story of the American People from EyeGate.

The American Spirit from Scholastic Humanities Program, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1973.

Activities for Motivating and Teaching Bright Children: Rosalind Ashley.

Educating for the Future: 21st Century Teaching: Elizabeth Broom.

B. Books

Durant, Will. *The Story of Philosophy*. New York: Pocket Books.

Gould, Joseph. *Challenge and Change*.

Miller, O'Neal and McDonnell. *Literature of the Eastern World*.

Galbraith, John K. *The Affluent Society*.

Tofler, Alvin. *Future Shock*. Westminister, Md.: Random House, 1970.

Hesse, Hermann. *Siddhartha*. Des Plaines, Ill.: Bantana Books, Inc.

Kesey, Ken. *One Flew Over The Cuckoo's Nest*. New York: New American Library, 1975.

Salinger, J. D. *Catcher In The Rye*. Waltham, Mass.: Little, Brown & Co., 1951.
Thoreau and Skinner. *Walden Pond*.
Heller, Joseph. *Catch 22*. Dell Publishing Co., 1976.
Berne, Eric. *Games People Play*. Westminister, Md.: Ballantine Books, Inc., 1978.

C. **Speeches**

"Problems of Abundance," J. William Fullbright
"The Obligations of Power," Lyndon B. Johnson
"The Draft and Civil Disobedience," Robert Macafee Brown
"The Use and Abuse of Psychedelic Drugs," Daniel Freedman
"A Generation Unsure It Has a Future," George Walee from *Vital Speeches*, April 15, 1969
"Marlon Brando: Unfinished Oscar Speech." *New York Times*, March 30, 1973.
"The Making of Americans," from *Letters From a Farmer* by Jean de Crevecoeur
"On Education" from *Studies in Pessimism* by Arthur Schopenhaur

Acknowledgement: Barbara Hymen for the creative title of the unit.

IV. **Content**

A. **Nature of Man**

1. Eastern philosophies
2. Western philosophies

B. **Definition of Change**

1. Need
2. Inevitability
3. Stability

C. **Impact of Change**

1. Physical
2. Emotional
3. Spiritual
4. Economical

D. **Reaction to Change**

1. Acceptance
2. Rejection
3. Indifference

E. **Adaptation to Change**

V. **Questions to be Considered by Student**

- A. What is your definition of change? How did you arrive at that definition?
- B. Does man need change?
- C. What is the alternative to change?
- D. Can correlations be drawn between Western and non-Western modes of coping with change?

- E. How does change affect behavioral patterns of man?
- F. How can future changes be predicted?
- G. Is Utopia a myth?
- H. Are stability and stagnation synonymous?
- I. How does an individual determine his role in a changing society?
- J. Do I have a more adequate understanding of change?

VI. Strategies

- A. Discussion
- B. Questioning
- C. Problem solving
- D. Simulation
- E. Role playing
- F. Researching
- G. Demonstration
- H. Reading

VII. Activities

- A. An introductory explanation or review of
 1. reasoning skills
 2. data gathering
 3. hypothesizing
- B. At the introduction of each of the five units, a general discussion of known facts and individual opinions transpires. At the conclusion of the discussion, each student is asked to formulate five generalizations, drawing either from his or her convictions or from information ascertained from the discussion. From these generalizations he or she will formulate and test at least one hypothesis.
- C. The students are then asked to choose several sources from a prepared bibliography to examine. They are provided several days of class time to complete the reading, interviewing and other data gathering.
- D. The group then reconvenes to discuss each person's discoveries, to role play situations and become otherwise involved in simulations and exploration.
- E. Each student is then responsible for formulating a hypothesis which he or she defends in written form to be read to the group. (Teachers, parents, principals, interested students are invited to attend these sessions.)

VIII. Evaluation

- A. Pre/post tests are administered using the 10 questions listed above.
- B. Student is asked to present 10 "I learned . . ." statements.
- C. A written evaluation of the course is asked of every student. Students are encouraged to offer ways to improve the seminar.
- D. Teacher observation of students' discussions and prepared papers is a sound evaluative tool.

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HUMOR IN LITERATURE

A mini-course designed to assist students in becoming familiar with the lighter side of literature.

Nancy Houghtaling
Butts County

Mini-course Title: HUMOR IN LITERATURE

Target Group: Secondary level

I. Student Objectives

A. Cognitive

Students will

1. acquire familiarity with light literature;
2. analyze qualities of humorous writings;
3. contrast qualities found in one humorous writing with those found in one serious, perhaps tragic, writing;
4. identify different types of humor.

B. Affective

Students will

1. become more interested in reading light items;
2. increase appreciation of skill needed in writing humorous literature;
3. realize need for laughter in our lives;
4. imagine literature without humor.

II. Thought Processes to be Developed

- A. Cognitive
- B. Evaluative
- C. Analytical
- D. Contrast and compare
- E. Synthesis

III. Instructional Material

A. General — literature anthologies, collected writings of selected authors (for example, Stephen Leacock, Mark Twain, Ring Lardner, Robert Benchley) and magazines (*Mad*, *National Lampoon*).

B. Specific Suggestions

1. "The Night the Bed Fell" — James Thurber
2. "Lovesong" — Dorothy Parker
3. "Growltiger's Last Stand" — T. S. Eliot
4. "Do Thrillers Need Heroines?" — P. G. Wodehouse
5. "Televiewing" — J. B. Priestly
6. "Selected Snobberies" — Aldous Huxley
7. "Snapshot of a Dog" — James Thurber
8. "Ransom of Red Chief" — O. Henry
9. "My Financial Career" — Stephen Leacock
10. "Witch of East Seventy-Second Street" — Morris Bishop
11. "Barefoot in the Park" — Neil Simon
12. "Innocents Abroad" — Mark Twain
13. "Ojibway 38" — William Saroyen
14. "A Wild and Crazy Guy" (record) — Steve Martin
15. Stand-up comic monologues: "I told my mother-in-law to make my house her home. She did. She sold it the following week."

16. Silly answers (from *Read Magazine*)

John: This dumb match won't even light.

Bruce: What's wrong with it?

John: I don't know. It worked a minute ago.

Fred: What do you get when you cross a pig with a centipede?

Bill: I don't know. What?

Fred: Bacon and legs!

17. Limericks (This one is from Scott, Foresman and Co.)

There was a young lady from Austin,

Who started to cycle to Boston,

By Platte she was cross-eyed

From too much monoxide,

Said she, "This is very exhaustin."

IV. Content

- A. Read material.
- B. Discuss selections in groups.
- C. Dramatize or role play several selections.
- D. Prepare tape or slide show on humor in literature, using one liners, limericks, essay excerpts, stand up monologues and humorous scenes from contemporary play.

V. Questions to be Considered by Students

- A. What is the difference between bathos and pathos?
- B. What makes a reader laugh?
- C. What would literature be without humor?
- D. Could a tragedy be turned into a comedy? How?

VI. Activities and Strategies

A. Students will

- 1. divide selves into groups to discuss selection;
- 2. decide what article each group will film;
- 3. write script for show, inserting brief selections.

B. Teacher will

- 1. provide sufficient reading material,
- 2. furnish film, tape and camera,
- 3. review rules for a good slide show (see Kodak handbook).

VII. Evaluation

A. This mini-course will be successful if each student can

- 1. name a characteristic of humor.
- 2. list reasons why humor is so necessary in our lives.
- 3. describe his favorite selection.
- 4. correctly group selections in slide show.

B. Evaluation will also be determined by brief teacher-made quizzes.

TWENTIETH CENTURY IN TIME CAPSULES

This mini-course is designed to help students understand the relationships between art forms and certain life styles in the past, present and future.

Ada Roddy
Gretchen Patricio
Chatham County

Mini-course Title: TWENTIETH CENTURY IN TIME CAPSULES

Target Group: Grades 11 and 12

I. Student Objectives

A. Cognitive

Students will be able to describe the relationships between the lifestyles and art forms of a specific era.

B. Affective

Students will be able to critically analyze the first 80 years of the twentieth century in order to predict their role in society in the next 20 years.

II. Thought Processes to be Developed

- A. Knowledge
- B. Comprehension
- C. Application
- D. Analysis
- E. Synthesis
- F. Evaluation
- G. Valuing
- H. Conceptualizing
- I. Internalizing

III. Instructional Materials

- A. Books
- B. Subject-area teachers
- C. Film
- D. Filmstrips
- E. Records
- F. Microfilm of newspapers
- G. Interviews

Materials will need to be determined by the teacher using or adapting this mini-course.

IV. Content (Topics to be Studied)

How lifestyles evolved to meet the needs of the times.

1. International problems (World Wars I and II)
2. National problems (depression, automation, population and technological advances)

V. Questions to be Considered by Students

- A. What relationships do you see between lifestyles and art forms?
- B. How influential are social, economic and political factors in bringing about changes in lifestyles?
- C. What do you see as your role in society during the next 20 years?

VI. Activities and Strategies

A. Student

1. Research art forms and lifestyles of the first 80 years of the twentieth century and the influence on the lifestyles and art forms.
2. Construct five artifacts most representative of each 20-year period.
3. Present findings to class.
4. Bury artifacts for students of other participating school to find.
5. Meet with other students for artifacts to be identified, for a discussion of the relationships of art forms and lifestyles, for drawing some conclusions about the past 80 years, for predicting trends for the next 20 years and for looking at their roles and responsibilities in that era.

B. Teacher

1. Provide resource material and people.
2. Aid students in clarifying ideas.
3. Make arrangements for interschool activities.

VII. Evaluation (In line with objectives and content)

A. Course

1. Teacher observation of presentations
2. Selection and defense of artifacts
3. Teacher observation of enthusiasm exhibited by students of both schools

B. Student

Course evaluation sheet completed by students of both schools (copy attached).

The most meaningful result may be students' enthusiasm about the opportunity to meet and exchange ideas with students from another school.

Evaluation Sheet

TWENTIETH CENTURY IN TIME CAPSULES

Name _____

Time Period _____

1. Specific assignment within group

2. Information sources used

3. Approximate number of hours worked _____

4. Problems encountered (Include teacher and student problems as well as problems collecting information and materials.)

5. Value, if any, of the mini-course

6. Other activities, information or assignments that would have improved the course

7. Activities or assignments that did not have value and should be eliminated

8. Group relations (check one)
I did
 My share
 More than my share
 Less than my share

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