

# **STATE SKILL STANDARDS PHOTOGRAPHY**

## **Career & Technical Education**

*Skills for Employment & Lifelong Learning*



Prepared by:

Office of Career, Technical and Adult Education  
Nevada Department of Education  
755 N. Roop Street, Suite 201  
Carson City, NV 89701

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### Writing Team Members

Frederick Howell  
Mojave High School, Las Vegas

Loretta Reed  
Spring Creek High School, Spring Creek

Capra Jensen  
Eldorado High School, Las Vegas

Gary Robison  
Gary Robison Photography, Carson City

Susan Taylor  
Carson High School, Carson City

Christine Pavesich  
Coronado High School, Las Vegas

### Project Coordinators

Robert Campbell, Consultant  
Michael J. Raponi, Assistant Director  
Office of Career, Technical & Adult Education  
Nevada Department of Education

## Introduction

The Department of Education has undertaken an ambitious effort to develop statewide skill standards for all content areas in career and technical education. The standards in this document are for photography programs and are designed to clearly state what the student should know and be able to do upon completion of an advanced high-school program.

Photography is a program that consists of initial fundamentals and sequential courses that prepare students for most occupations in the field of commercial photography. The content and performance standards in this document focus on digital photography, which today is recognized as the industry standard. However, film-based photography is also recognized under content standard 8.

In addition to specific skills, the overall program focuses on broad transferable skills and stresses understanding and demonstration of the major elements of the commercial photography industry, including planning, management, finance, technical and product skills, and underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

The standards are organized as follows:

**Content Standards** are general statements that identify major areas of knowledge, understanding, and skills students are expected to learn in key subject and career areas by the end of the program.

Following each Content Standard are a number of **Performance Standards**. Performance Standards identify the more specific components of each content standard and define the expected abilities of students within each content standard.

Each Performance Standard is analyzed into specific **Performance Indicators**. Performance Indicators are very specific criteria statements for determining whether a student exceeds the standard, meets the standard, or whose performance approaches the standard. Performance Indicators may also be used as learning outcomes which teachers can identify as they plan their program learning objectives.

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**Content and Performance Standards**  
**History of Photography**

**Content Standard 1.0:** Students will demonstrate understanding of the history of photography by describing and analyzing the role and development of photography in past and present cultures.

| <b>Performance Standard 1.1 Students will demonstrate an understanding of the role and development of photography in past and present cultures.</b> |   |
|---|---|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Write a critique of a well-known photograph or photographer.</li> <li>• Describe the significance of a historical photographer.</li> <li>• Explain the role and limitations of photography.</li> <li>• Recognize the influence of photography on our lives, our culture, and our society.</li> <li>• Define digital imaging.</li> <li>• Identify three major components needed for the development of a digital imaging system.</li> </ul>   |
| <b>MEETS STANDARD</b>   | <p>1.1.1 Compare different processes.</p> <p>1.1.2 Identify and compare the characteristics of photographs that share similar subject matter, historical periods, or cultural context.</p> <p>1.1.3 Compare similarities and differences in the purposes of photography created in various cultures.</p> <p>1.1.4 Define the role of photography in today’s society.</p> <p>1.1.5 Compare characteristics of photography within a particular historical period including the following: style, ideas, issues, or themes in the humanities or sciences.</p> <p>1.1.6 Identify the work of famous photographers.</p> <p>1.1.7 Describe the role that photography plays in everyday life.</p> <p>1.1.8 Outline major technological developments and events in the history of digital imaging technology.</p> <p>1.1.9 Identify key people involved with the advancement of digital imaging technology.</p> <p>1.1.10 Identify recent advances in digital imaging technology.</p> |
| <b>APPROACHES STANDARD</b>  | <ul style="list-style-type: none"> <li>• List the primary photographic film processes used in the past.</li> <li>• List famous photographers who through their work had a significant impact on the industry.</li> </ul>  |

Nevada Academic Standards Correlation:  
English: 2.8.3, 4.12.3, 4.12.5, 6.12.2, 11.12.5  
Science: N.12.B.4, N.12.B.1

*Adopted by the State Board on 11/30/07*

**Content and Performance Standards**  
**Photo Law/Ethics**

**Content Standard 2.0:** Students will demonstrate knowledge and understanding of the laws and ethics as they relate to photography.

| <b>Performance Standard 2.1</b> | <b>Students will demonstrate an understanding of the principles of photo law.</b>  |
|---------------------------------|--|
| <b>EXCEEDS STANDARD</b>         | <ul style="list-style-type: none"> <li>Justify libel, privacy, copyright, and counterfeit laws as they apply to photography.</li> <li>Compose quality captions to protect the photographer legally should an editor change them later into something found libelous.</li> <li>Assess one’s own values and ethics, as pertaining to photography.</li> </ul>   |
| <b>MEETS STANDARD</b>           | <p>2.1.1 Describe the legal parameters of what can be construed as news and a photographer’s rights in photographing news events without limitation.</p> <p>2.1.2 Use release forms when photographing non-news events, especially of a controversial nature.</p> <p>2.1.3 Discuss and illustrate the need for accurate captions to protect the photographer legally should an editor change them later into something found libelous.</p> <p>2.1.4 Explain libel, privacy, copyright, and counterfeit laws as they apply to photography.</p> <p>2.1.5 Create a watermark.</p> <p>2.1.6 Describe the issues of privacy and ethics.</p> |
| <b>APPROACHES STANDARD</b>      | <ul style="list-style-type: none"> <li>Cite school district policy pertaining to appropriate subject matter.</li> <li>Recognize legal and ethical practices related to copyright laws and fair use policies.</li> <li>Define a watermark.</li> </ul>   |

Nevada Academic Standards Correlation:

English: 10.12.1, 10.12.2, 10.12.3

Science: N.12.B.3

## Content and Performance Standards

### Safety

**Content Standard 3.0:** Students will be able to demonstrate the safe use of photographic materials and equipment.

| <b>Performance Standard 3.1</b> | <b>Students will demonstrate general lab safety rules including but not limited to those in the following performance indicators.</b>   |
|---------------------------------|---|
| <b>EXCEEDS STANDARD</b>         | <ul style="list-style-type: none"> <li>Design a lab safety-improvement plan.</li> </ul>   |
| <b>MEETS STANDARD</b>           | <p>3.1.1 Recite and complete a demonstration exhibiting knowledge of safe use of materials and equipment.</p> <p>3.1.2 Demonstrate proper use of safety apparel, including eye and skin protection when using chemicals, as needed.</p> <p>3.1.3 Demonstrate the safe and proper care of cameras and all other lab equipment.</p> <p>3.1.4 Demonstrate the safe handling, storage, and disposal of materials as needed and in accordance with local, state, and federal safety and environmental regulations.</p> <p>3.1.5 Demonstrate proper use of electrical cords and electrical equipment.</p> <p>3.1.6 Demonstrate knowledge of general lab fire safety procedures and regulations.</p> <p>3.1.7 Discuss the safety measures that need to be taken during a photo shoot.</p> <p>3.1.8 Demonstrate a knowledge and proper use of various lighting fixtures used in the lab.</p> <p>3.1.9 Operate OSHA-approved equipment according to the manufacturers recommended procedure.</p> |
| <b>APPROACHES STANDARD</b>      | <ul style="list-style-type: none"> <li>Discuss potential lab safety hazards.</li> <li>Discuss lab safety rules.</li> </ul>  |

Nevada Academic Standards Correlation:

English: 9.12.1, 9.12.2, 9.12.3, 10.12.2

Science: N.12.A.4, E.12.C.4, P.12.C.1, P.12.C.5, P.12.C.6



**Content and Performance Standards**  
**Cameras and Accessories**

**Content Standard 4.0:** Students will identify and use different types of cameras and camera accessories.

| <b>Performance Standard 4.1</b> | <b>Students will demonstrate competence in using various types of cameras to take photographs.</b>  |
|---------------------------------|---|
| <b>EXCEEDS STANDARD</b>         | <ul style="list-style-type: none"> <li>Explain and demonstrate the ultimate advantage of the 35mm SLR with interchangeable lenses.</li> <li>Explain various kinds of cameras, including the pin-hole, box, view, twin lens reflex, single lens reflex, and digital.</li> <li>Demonstrate the use of medium and large format cameras.</li> </ul>   |
| <b>MEETS STANDARD</b>           | <p>4.1.1 Identify the various camera types.</p> <p>4.1.2 List the advantages and disadvantages of each camera type.</p> <p>4.1.3 Identify camera and lens parts and attain a working vocabulary.</p> <p>4.1.4 Label and define camera parts.</p> <p>4.1.5 Explain the purpose of each camera part.</p> <p>4.1.6 Demonstrate the proper handling of a 35mm SLR camera.</p> <p>4.1.7 Demonstrate loading and unloading of film and/or memory in a SLR camera.</p> <p>4.1.8 Navigate the menu of a digital camera.</p> |
| <b>APPROACHES STANDARD</b>      | <ul style="list-style-type: none"> <li>List and describe the functions of the outer basic parts of the camera.</li> <li>List and describe the functions of the inner basic parts of the camera.</li> <li>Demonstrate proper camera handling techniques.</li> </ul>  |

Nevada Academic Standards Correlation:  
English: 6.12.2, 9.12.1, 10.12.3

**Content and Performance Standards**  
**Cameras and Accessories**

**Content Standard 4.0:** Students will identify and use different types of cameras and camera accessories.

| <b>Performance Standard 4.2 Students will demonstrate an understanding of various lenses and their correct application.</b> |  |
|---|--|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Demonstrate the uses of various types of lenses for particular shooting situations.</li> <li>• Evaluate the effects of different lenses on created appearance, depth of field, and perspective.</li> <li>• Analyze one’s own photographs in relation to the appropriateness of lens choice.</li> </ul>  |
| <b>MEETS STANDARD</b>   | <p>4.2.1 List and describe the functions of the controls on the camera lens.</p> <p>4.2.2 Identify and describe lens filters and their uses.</p> <p>4.2.3 Define focal length.</p> <p>4.2.4 Experiment with a variety of lenses to understand their effects.</p> <p>4.2.5 Explain the effect of different lenses in a variety of different photographic situations.</p> <p>4.2.6 Compare and contrast the relationship between focal length and shutter speed for hand-held photography.</p> <p>4.2.7 Explain how different lenses affect composition.</p> <p>4.2.8 Explain the need to consider the conversion factor when using a standard lens on a digital body.</p> <p>4.2.9 Explain the disadvantages of using a digital zoom feature.</p> |
| <b>APPROACHES STANDARD</b>  | <ul style="list-style-type: none"> <li>• Identify what lenses are used to create specific photographs.</li> <li>• Recognize the effect of different lenses in a variety of different photographic situations.</li> <li>• Demonstrate lens care.</li> </ul>   |

Nevada Academic Standards Correlation:

Math: 3.12.3, 4.12.1

English: 6.12.2, 4.12.3

## Content and Performance Standards

### Exposure

**Content Standard 5.0:** Students will demonstrate competence in the use of exposure settings to achieve desired photographic effects.

| <b>Performance Standard 5.1</b> Students will demonstrate knowledge of ISO selection and proper exposure settings for a variety of situations. |  |
|--|--|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>Analyze the photographic situation and apply the needed aperture setting to show limited, medium, and extended depth of field.</li> <li>Experiment with aperture size and shutter speed as creative controls to tell a story or capture an image in a variety of ways.</li> </ul>   |
| <b>MEETS STANDARD</b>  | <p>5.1.1 Describe and utilize the basic factors of exposure: ISO, light, aperture size, and shutter speed.</p> <p>5.1.2 Demonstrate an understanding of reciprocity.</p> <p>5.1.3 Demonstrate how to take reflective, incident, and spot meter readings.</p> <p>5.1.4 Demonstrate the proper use of a gray card.</p> <p>5.1.5 Demonstrate how to bracket exposures.</p> <p>5.1.6 Explain how shutter speed affects the appearance of motion.</p> <p>5.1.7 Explain the effect of aperture size on depth of field.</p> <p>5.1.8 List the three factors that affect depth of field.</p> <p>5.1.9 Apply the appropriate aperture and shutter for a wanted outcome.</p> <p>5.1.10 Recognize how environment can mislead the camera metering system.</p> |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>List various ISO settings.</li> <li>Describe the reaction of film to light.</li> <li>Create a photograph with an area of selective focus.</li> <li>Create a photograph with an extended depth of field.</li> </ul>  |

Nevada Academic Standards Correlation:

Math: 1.12.8, 2.12.2, 3.12.3, 3.12.5

English: 9.12.1

Science: N.12.A.5, N.12.A.2, P.12.B.1

**Content and Performance Standards**  
**Composition**

**Content Standard 6.0:** Students will demonstrate a basic understanding of elements and principles of art and composition as applied to photography.

| <b>Performance Standard 6.1</b> Students will incorporate the elements and principles of art into photographs. |  |
|--|--|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"><li>• Evaluate a photograph for the effective use of the elements and principles of art.</li><li>• Create original photographic works of increasing complexity and skill using a variety of photographic techniques.</li></ul> |
| <b>MEETS STANDARD</b>  | 6.1.1 Identify examples of art elements in photographs.<br>6.1.2 Create expressive photographs using art elements.<br>6.1.3 Create expressive photographs using art principles.  |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"><li>• Define art elements that pertain to photography.</li></ul>   |

**Content and Performance Standards**  
**Composition**

**Content Standard 6.0:** Students will demonstrate a basic understanding of elements and principles of art and composition as applied to photography.

| <b>Performance Standard 6.2 Use the elements and principles of composition to organize images to communicate ideas.</b> |   |
|---|---|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Create multiple solutions to a photography composition problem.</li> <li>• Use critical thinking and problem solving skills to create an appealing composition.</li> <li>• Use critical thinking skills to describe, interpret, analyze, and make judgments about composition.</li> </ul>  |
| <b>MEETS STANDARD</b>   | <p>6.2.1 Describe guidelines of photographic composition.</p> <p>6.2.2 Use various compositional approaches to tell a story or convey an idea.</p> <p>6.2.3 Capture an image using composition guidelines.</p> <p>6.2.4 Develop several compositions from a single theme/subject.</p> <p>6.2.5 Produce images including one focal point.</p>  |
| <b>APPROACHES STANDARD</b>  | <ul style="list-style-type: none"> <li>• List and define the types of composition.</li> <li>• Communicate a specific idea through the subject matter and the composition of the photograph.</li> <li>• Check the edges of the frame and the background before shooting.</li> <li>• Pre-visualize the image to achieve desired composition.</li> <li>• Identify the focal point in photographs.</li> </ul> |

Nevada Academic Standards Correlation:  
English: 7.12.1, 7.12.3, 7.12.4, 7.12.5, 9.12.1

**Content and Performance Standards**  
**Light Sources**

**Content Standard 7.0:** Students will demonstrate an understanding of the different light sources and their proper use.

| <b>Performance Standard 7.1</b>  |  |
|--|--|
| <b>Students will demonstrate an understanding of artificial lighting techniques as they apply to different situations and effects.</b> |  |
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Experiment with light conditions and filters to create special effects.</li> <li>• Explore alternative methods of activating and synchronizing remote lighting units.</li> </ul>  |
| <b>MEETS STANDARD</b>  | <p>7.1.1 Select film type or set white balance to match light source.</p> <p>7.1.2 Utilize color correction filters when necessary.</p> <p>7.1.3 Demonstrate traditional studio lighting set-ups.</p> <p>7.1.4 Position studio lights and subject to avoid distracting shadows.</p> <p>7.1.5 Position lights to achieve specific lighting ratios.</p> <p>7.1.6 Demonstrate proper use of a light meter.</p> <p>7.1.7 Utilize light modifiers to adjust the quality of light.</p> <p>7.1.8 Set camera to correct sync speed.</p> <p>7.1.9 Demonstrate the proper use of an on or off camera flash.</p> <p>7.1.10 Use a strobe to stop action in a photograph.</p> |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Label basic components of studio lighting.</li> <li>• Identify the different types of light modifiers.</li> <li>• List the qualities of light.</li> <li>• Name types of light meters.</li> <li>• List the Kelvin temperatures of artificial lights.</li> <li>• Discuss color correction filters.</li> <li>• Identify different lighting scenarios in sample photographs.</li> <li>• Discuss positioning of studio lights and subject to avoid distracting shadows.</li> <li>• Explain the importance of sync speed.</li> </ul>  |

Nevada Academic Standards Correlation:

Math: 1.12.8, 3.12.3

Science: P.12.C.5, P.12.C.6, P.12.C.1, P.12.B.1

**Content and Performance Standards**  
**Light Sources**

**Content Standard 7.0:** Students will demonstrate an understanding of the different light sources and their proper use.

| <b>Performance Standard 7.2</b> Students will demonstrate an understanding of natural lighting techniques as they apply to different situations and effects. |  |
|--|--|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Experiment with light conditions and filters to create special effects.</li> </ul>  |
| <b>MEETS STANDARD</b>  | <p>7.2.1 Select film type or set white balance to match light source.</p> <p>7.2.2 Take photographs using natural light.</p> <p>7.2.3 Experiment with different lighting situations to create a properly exposed photograph.</p> <p>7.2.4 Manipulate existing light in combination with a flash/reflector to create a well-lit subject.</p> <p>7.2.5 Demonstrate knowledge of how environmental conditions affect the quality of light and its effects on the subject.</p> |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Explain when available light will need a boost from a flash or reflector used as a fill.</li> <li>• Create photographs in different lighting situations.</li> <li>• Identify natural light sources in photographs.</li> </ul>   |

**Content and Performance Standards**  
**Film-Based Photography**

**Content Standard 8.0:** For those programs teaching silver-based photography, students will demonstrate knowledge in the selection, development and printing of film.

**Note:** Content Standard 8.0 is optional and only applies to programs using silver based photography.

| <b>Performance Standard 8.1 Students will demonstrate knowledge in selection of film.</b> |   |
|---|---|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Demonstrate understanding of the chemistry and processes involved when pushing film (i.e. especially from ISO 400 to 800 or 1600).</li> <li>• Use different film types and formats.</li> <li>• Explain the difference between positive and negative film.</li> </ul> |
| <b>MEETS STANDARD</b>   | 8.1.1 Choose the best film speed for various lighting and subjects.<br>8.1.2 Explain the relationship between film speed and print quality.<br>8.1.3 Understand the layers and functions of black and white film.<br>8.1.4 Explain the relationship between film speed and grain.                             |
| <b>APPROACHES STANDARD</b>  | <ul style="list-style-type: none"> <li>• Select the appropriate film types for different situations.</li> <li>• Describe the procedures for care and storage of film.</li> <li>• Describe the reaction of film to light.</li> </ul>   |

Nevada Academic Standards Correlation:

English: 2.12.2

Science: P.12.A.5



**Content and Performance Standards**  
**Film-Based Photography**

**Content Standard 8.0:** For those programs teaching silver-based photography, students will demonstrate knowledge in the selection, development and printing of film.

| <b>Performance Standard 8.2 Students will demonstrate knowledge in development of film.</b> |   |
|---|---|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Understand how to prevent improperly exposed film.</li> <li>• Demonstrate push-processing film.</li> </ul>   |
| <b>MEETS STANDARD</b>   | <p>8.2.1 Properly roll film on a developing reel.</p> <p>8.2.2 Properly develop a roll of black and white film.</p> <p>8.2.3 Take proper safety precautions when developing film.</p> <p>8.2.4 Explain how a latent image is formed and converted to a negative image.</p> <p>8.2.5 Mix chemicals accurately.</p> <p>8.2.6 Recognize film that has been underdeveloped or overdeveloped.</p> <p>8.2.7 Recognize film that has been over or under exposed.</p>   |
| <b>APPROACHES STANDARD</b>  | <ul style="list-style-type: none"> <li>• Mix photographic chemicals for processing.</li> <li>• Load practice and exposed film onto reel and place it into a developing tank.</li> <li>• Understand the need for accuracy in developing to attain maximum results.</li> <li>• Participate in a discussion of the prediction of what will happen in different developing situations.</li> <li>• Take care of the darkroom responsibilities, including chemical preparation and cleaning the area.</li> <li>• Recognize a double exposed image.</li> </ul> |

Nevada Academic Standards Correlation:

Math: 2.12.2, 3.12.1, 3.12.3, 3.12.5

English: 4.12.6, 2.12.1

Science: P.12.A.5, P.12.A.5, N.12.A.4, N.12.A.5

**Content and Performance Standards**  
**Film-Based Photography**

**Content Standard 8.0:** For those programs teaching silver-based photography, students will demonstrate knowledge in the selection, development and printing of film.

| <b>Performance Standard 8.3</b> <b>Students will demonstrate knowledge in printing a negative.</b> |  |
|--|--|
| <b>EXCEEDS<br/>STANDARD</b>  | <ul style="list-style-type: none"> <li>• Distinguish applications of different paper types.</li> <li>• Properly mix darkroom chemicals.</li> <li>• Create and apply special effects.</li> <li>• Explore alternative processes.</li> <li>• Demonstrate proper spotting and etching.</li> </ul>  |
| <b>MEETS<br/>STANDARD</b>  | <p>8.3.1 Identify and explain the parts of the enlarger.</p> <p>8.3.2 Determine proper exposure of a print.</p> <p>8.3.3 Produce a contact print.</p> <p>8.3.4 Produce a quality black and white darkroom print.</p> <p>8.3.5 Take proper safety precautions when printing in a darkroom.</p> <p>8.3.6 Demonstrate the correct procedures for producing a print.</p> <p>8.3.7 Choose filters for different printing effects.</p> |
| <b>APPROACHES<br/>STANDARD</b>   | <ul style="list-style-type: none"> <li>• Produce a black and white darkroom print.</li> <li>• Produce a photogram.</li> <li>• List the correct procedures for producing a print.</li> <li>• Properly cut paper.</li> </ul>   |

Nevada Academic Standards Correlation:

Math: 1.12.7, 3.12.3, 3.12.5

English: 1.6.4, 4.12.6, 2.12.1

Science: P.12.A.5, N.12.A.2, N.12.A.3, N.12.A.4

**Content and Performance Standards**  
**Computer and Digital Concepts**

**Content Standard 9.0**      **Students will demonstrate an understanding of capturing, manipulating, storing, and printing of digital images.**

| <b>Performance Standard 9.1</b> <b>Students will demonstrate knowledge of digital camera components and digital image storage devices.</b> |  |
|--|--|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Evaluate the advantages and disadvantages of single shot digital cameras, video clip, and digital video cameras.</li> <li>• Compare and contrast in-camera color profiles.</li> </ul>   |
| <b>MEETS STANDARD</b>  | 9.1.1 Demonstrate proper camera care and handling.<br>9.1.2 Explain the function of each component.<br>9.1.3 Identify camera controls, menu options, and settings.<br>9.1.4 Select appropriate format for a specific output.<br>9.1.5 Demonstrate uses of various media storage devices.<br>9.1.6 Demonstrate proper care and handling of storage devices.<br>9.1.7 Use proper exposure settings to capture a digital image.<br>9.1.8 Capture digital images and download them to a computer.<br>9.1.9 Describe digital photographic related equipment.<br>9.1.10 Compare and contrast various file formats. |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Describe proper camera care and handling.</li> <li>• List basic digital camera components.</li> <li>• List various storage devices.</li> </ul>  |

Nevada Academic Standards Correlation:

Math: 1.12.8

English: 6.12.2

**Content and Performance Standards**  
**Computer and Digital Concepts**

**Content Standard 9.0**      **Students will demonstrate an understanding of capturing, manipulating, storing, and printing of digital images.**

| <b>Performance Standard 9.2      Students will demonstrate proficiency in using a scanner.</b> |   |
|--|---|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Calibrate a desktop color scanner.</li> <li>• Calibrate a color monitor.</li> <li>• Discuss professional high-resolution scanners.</li> </ul>  |
| <b>MEETS STANDARD</b>  | 9.2.1 Properly connect a scanner to a computer system.<br>9.2.2 Identify types of scanners and their uses.<br>9.2.3 Demonstrate proper use and care of scanners.<br>9.2.4 Set scanner appropriately according to desired outcome.<br>9.2.5 Experiment with scanner accessories.<br>9.2.6 Scan and save a reflective, negative, and/or positive image. |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Identify various types of scanners and their functions.</li> </ul>   |

**Content and Performance Standards**  
**Computer and Digital Concepts**

**Content Standard 9.0**

**Students will demonstrate an understanding of capturing, manipulating, storing, and printing of digital images.**

| <b>Performance Standard 9.3</b>  |  |
|--|--|
| <b>Students will demonstrate competence in using graphics software to modify or enhance a digital image.</b> |  |
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Properly set up digital image editing equipment and load editing software.</li> <li>• Manipulate multiple images to create a new image.</li> </ul>  |
| <b>MEETS STANDARD</b>  | 9.3.1 Demonstrate editing techniques using graphic or digital editing software.<br>9.3.2 Demonstrate the use of editing and/or special effect tools.<br>9.3.3 Use graphic software to resize digital images.<br>9.3.4 Demonstrate a basic understanding of layers in photo-editing software. |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Identify the terms used in image manipulation.</li> <li>• Identify basic digital photo editing equipment and software programs.</li> <li>• Identify basic editing tools and techniques.</li> </ul>  |

Nevada Academic Standards Correlation:  
 Math: 3.12.3

**Content and Performance Standards**  
**Computer and Digital Concepts**

**Content Standard 9.0**      **Students will demonstrate an understanding of capturing, manipulating, storing, and printing of digital images.**

| <b>Performance Standard 9.4      Save and retrieve digital images.</b> |   |
|--|---|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Identify the correlation between the graphic card selection, the monitor, and retrieved images.</li> <li>• Explain the basic processing speeds of computers.</li> <li>• Distinguish the difference between long and short-term storage devices.</li> </ul>   |
| <b>MEETS STANDARD</b>  | 9.4.1 Boot-up and use computer software to retrieve stored images.<br>9.4.2 Compare the different display monitors.<br>9.4.3 Explain the relationship of software system requirements to specific computer capabilities.<br>9.4.4 Explain the differences in color bit quality.<br>9.4.5 Explain pixel resolution.<br>9.4.6 Explain file types.<br>9.4.7 Identify components of a computer system capable of modifying an image.<br>9.4.8 Evaluate the quality of retrieved images.<br>9.4.9 Save edited/modified digital images onto selected storage devices. |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Apply safety handling and storage techniques.</li> <li>• List different display monitors.</li> <li>• List file types.</li> <li>• Identify basic storage retrieval equipment.</li> <li>• Demonstrate the correct procedure for booting up and shutting down a computer system.</li> <li>• Name the colors RGB and CMYK.</li> <li>• Demonstrate proper safety techniques.</li> </ul>   |

Nevada Academic Standards Correlation:

Math: 3.12.5

English: 6.12.2

Science: P.12.C.6

*Adopted by the State Board on 11/30/07*

**Content and Performance Standards**  
**Computer and Digital Concepts**

**Content Standard 9.0**      **Students will demonstrate an understanding of capturing, manipulating, storing, and printing of digital images.**

| <b>Performance Standard 9.5      Students will demonstrate knowledge of printers and printing.</b> |   |
|--|---|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Setup a printer for shared printing over a network.</li> </ul>   |
| <b>MEETS STANDARD</b>  | 9.5.1 Demonstrate proper safety and use of printing equipment.<br>9.5.2 Choose the best printer for different types of output.<br>9.5.3 Discuss the advantages and disadvantages of different types of printers.<br>9.5.4 Choose appropriate settings for desired result.           |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Identify digital photograph printing equipment.</li> <li>• Correctly produce a printed digital image.</li> <li>• Define printer resolution and how it affects print quality.</li> <li>• Select proper paper for desired output.</li> </ul> |

**Content and Performance Standards**  
**Computer and Digital Concepts**

**Content Standard 9.0**

**Students will demonstrate an understanding of capturing, manipulating, storing, and printing of digital images.**

| <b>Performance Standard 9.6 Students will demonstrate knowledge of printer maintenance and calibration.</b> |   |
|---|---|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Accurately calibrate a computer monitor to match printer output.</li> <li>• Obtain and install color profiles for specific ink/paper/printer combinations.</li> <li>• Troubleshoot various printer malfunctions.</li> <li>• Perform routine maintenance.</li> <li>• Replace ink or toner cartridges.</li> <li>• Utilize advanced settings to improve print quality.</li> </ul> |
| <b>MEETS STANDARD</b>   | 9.6.1 Recognize printer malfunction.<br>9.6.2 Properly load appropriate paper for desired results.<br>9.6.3 Apply proper paper orientation.<br>9.6.4 Choose a proper printing mode.<br>9.6.5 Select correct printer for desired results.<br>9.6.6 Explain the need for color calibrations.  |
| <b>APPROACHES STANDARD</b>  | <ul style="list-style-type: none"> <li>• Recognize a poorly produced print.</li> <li>• Recognize different computer systems.</li> </ul>   |



**Content and Performance Standards**  
**Presentation Techniques and Portfolio Development**

**Content Standard 10.0:** Students will demonstrate competence in presentation techniques and portfolio development.

| <b>Performance Standard 10.1</b> | <b>Students will demonstrate knowledge in displaying printed images.</b>  |
|----------------------------------|---|
| <b>EXCEEDS STANDARD</b>          | <ul style="list-style-type: none"> <li>• Select work and present it appropriately in an exhibit.</li> </ul>   |
| <b>MEETS STANDARD</b>            | 10.1.1 Demonstrate photographic presentation techniques.<br>10.1.2 Critique student work with constructive criticism.<br>10.1.3 Demonstrate knowledge of archival materials.            |
| <b>APPROACHES STANDARD</b>       | <ul style="list-style-type: none"> <li>• Identify and discuss photographic presentation techniques.</li> <li>• Discuss the need for archival preservation of printed images.</li> </ul> |

Nevada Academic Standards Correlation:  
 English: 10.12.4

**Content and Performance Standards**  
**Presentation Techniques and Portfolio Development**

**Content Standard 10.0:** Students will demonstrate competence in presentation techniques and portfolio development.

| <b>Performance Standard 10.2</b> | <b>Students will demonstrate knowledge in creating a physical and/or electronic portfolio.</b>  |
|----------------------------------|---|
| <b>EXCEEDS STANDARD</b>          | <ul style="list-style-type: none"> <li>• Justify choice of specific images.</li> <li>• Present portfolio for job or college placement.</li> <li>• Create a website as an electronic portfolio.</li> <li>• Create a multimedia presentation.</li> </ul>  |
| <b>MEETS STANDARD</b>            | <p>10.2.1 Select a variety of highest quality work.</p> <p>10.2.2 Obtain or construct a professional portfolio encasement.</p> <p>10.2.3 Select appropriate electronic format for presentation.</p> <p>10.2.4 Organize, maintain, and update portfolio for specific presentation.</p> <p>10.2.5 Demonstrate proper use of materials and equipment necessary to create a presentation.</p> |
| <b>APPROACHES STANDARD</b>       | <ul style="list-style-type: none"> <li>• Understand the process of editing for quality and content.</li> <li>• Identify various options for electronic portfolio.</li> <li>• Identify materials and equipment necessary to create a presentation.</li> </ul>  |

**Content and Performance Standards**  
**Careers**

**Content Standard 11.0: Students will identify and research career options in the photography industry.**

| <b>Performance Standard 11.1 Students will demonstrate knowledge in selecting photography-related career opportunities.</b> |  |
|---|--|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Interview, shadow, and/or complete an internship with a professional photographer to provide opportunities for discussion, guidance, and insight to related fields.</li> <li>• Explore the photography market and the technology as used according to industry standards.</li> <li>• Analyze how photographic imaging relates to other career pathways such as printing, graphic arts, and journalism.</li> <li>• Apply knowledge of business management and marketing to a photography business.</li> <li>• Analyze a tentative occupational choice based on the information learned and interest developed in this course.</li> <li>• Explore colleges where a photography program is offered.</li> </ul> |
| <b>MEETS STANDARD</b>   | <p>11.1.1 Identify and investigate photographic careers and qualifications, noting the personal and work attributes required to succeed.</p> <p>11.1.2 Discuss personal interests and aptitudes as they relate to a career.</p> <p>11.1.3 Review tentative occupational choices based on the information learned and interest developed through photography experiences.</p> <p>11.1.4 Identify careers within specific areas of photographic technology.</p> <p>11.1.5 Explore photography careers within specific areas of interest.</p> <p>11.1.6 Secure information about a job to identify the job tasks and working environment.</p>   |
|   | <ul style="list-style-type: none"> <li>• Research the qualifications needed for a particular career choice.</li> <li>• Identify one's own personal strengths, weaknesses and interests.</li> <li>• Conduct a job search.</li> </ul>  |

Nevada Academic Standards Correlation:  
English: 11.12.1, 11.12.2

**Content and Performance Standards**  
**Employability Skills**

**Content Standard 12.0:** Students will achieve competence in workplace readiness, career development, and lifelong learning.

| <b>Performance Standard 12.1 Students will demonstrate the knowledge and skills needed to perform in the workplace.</b> |  |
|---|--|
| <b>EXCEEDS<br/>STANDARD</b>   | <ul style="list-style-type: none"> <li>• Identify and apply methods of information acquisition and utilization.</li> <li>• Demonstrate an understanding of technological systems and their complex interrelationships.</li> </ul>  |
| <b>MEETS<br/>STANDARD</b>   | <p>12.1.1 Demonstrate interpersonal skills as they relate to the workplace.</p> <p>12.1.2 Demonstrate the ability to properly identify, organize, plan, and allocate resources.</p> <p>12.1.3 Model employability skills and habits.</p> <p>12.1.4 Design and implement the optimal solution to a given problem.</p> <p>12.1.5 Document each step of the design/problem-solving process.</p> <p>12.1.6 Demonstrate a work ethic that includes integrity, honesty, loyalty, and perseverance to be accepted for this pathway in the industry.</p> |
| <b>APPROACHES<br/>STANDARD</b>  | <ul style="list-style-type: none"> <li>• Identify problem-solving models.</li> <li>• Discuss a work ethic that includes integrity, honesty, loyalty, and perseverance to be accepted for this pathway in the industry.</li> </ul>  |

Nevada Academic Standards Correlation:  
English: 7.12.1, 7.12.3, 7.12.4, 7.12.5

**Content and Performance Standards**  
**Employability Skills**

**Content Standard 12.0:** Students will achieve competence in workplace readiness, career development, and lifelong learning.

| <b>Performance Standard 12.2 Students will demonstrate the ability to work safely with a variety of technologies.</b> |   |
|---|---|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Explain OSHA and safety requirements that pertain to visual arts.</li> </ul>   |
| <b>MEETS STANDARD</b>   | <p>12.2.1 Select appropriate tools, procedures, and/or equipment needed to produce a product.</p> <p>12.2.2 Demonstrate knowledge required to maintain and trouble shoot equipment.</p> <p>12.2.3 Demonstrate laboratory safety rules and procedures.</p> <p>12.2.4 Practice ergonomic processes.</p> <p>12.2.5 Explain fire prevention and safety precautions and practices for extinguishing fires.</p> <p>12.2.6 Identify potential dangers of familiar hazardous substances/devices.</p> <p>12.2.7 Identify health related problems that may result from exposure to work related chemicals and hazardous materials and understand the proper precautions required for handling such materials.</p> |
| <b>APPROACHES STANDARD</b>  | <ul style="list-style-type: none"> <li>• Recall the safe usage of appropriate tools, procedures, and operation of equipment needed to produce a product.</li> <li>• Identify laboratory safety rules and procedures.</li> <li>• Recognize safe mixing and disposal procedures for chemicals used in photography and other related processes.</li> </ul>   |

**Content and Performance Standards**  
**Employability Skills**

**Content Standard 12.0:** Students will achieve competence in workplace readiness, career development, and lifelong learning.

| <b>Performance Standard 12.3 Students will demonstrate knowledge in preparation obtaining a job/ interview process.</b> |   |
|---|---|
| <b>EXCEEDS STANDARD</b>   | <ul style="list-style-type: none"> <li>• Explain the specific factors in making a tentative career choice.</li> <li>• Participate in a mock job interview.</li> </ul>   |
| <b>MEETS STANDARD</b>   | <p>12.3.1 Review tentative occupational choices based on the information learned and interest developed through photography experiences.</p> <p>12.3.2 Create a personal résumé and work history.</p> <p>12.3.3 Obtain a competency profile certificate.</p> <p>12.3.4 Create a diversified portfolio.</p> <p>12.3.5 Complete a job application form correctly.</p> <p>12.3.6 Demonstrate competence in job interview techniques.</p> <p>12.3.7 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other employees.</p> <p>12.3.8 Identify acceptable work habits.</p> <p>12.3.9 Demonstrate acceptable employee health habits and dress standards for employability.</p> <p>12.3.10 Describe individual strengths and weaknesses.</p> <p>12.3.11 Write a letter of appreciation.</p> |
| <b>APPROACHES STANDARD</b>  | <ul style="list-style-type: none"> <li>• Discuss individual interests and aptitudes as they relate to a career in photography.</li> <li>• Conduct a job search.</li> <li>• Secure information about a specific job.</li> <li>• Identify documents that may be required when applying for a job interview.</li> <li>• Discuss the importance of letters of appreciation.</li> </ul>  |

Nevada Academic Standards Correlation:  
English: 5.9.2

**Content and Performance Standards**  
**Employability Skills**

**Content Standard 12.0:** Students will achieve competence in workplace readiness, career development, and lifelong learning.

| <b>Performance Standard 12.4</b> Students will demonstrate the ability to properly identify, organize, plan, and allocate resources. |   |
|--|---|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.</li> <li>• Demonstrate the ability to use appropriate business software.</li> <li>• Display knowledge of the efficient use of human resources.</li> </ul> |
| <b>MEETS STANDARD</b>  | 12.4.1 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, prepare and follow schedules.  |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Discuss the process of acquiring, storing, allocating, and using materials or space efficiently.</li> </ul>  |

Nevada Academic Standards Correlation:  
English: 9.12.1

**Content and Performance Standards**  
**Employability Skills**

**Content Standard 12.0:** Students will achieve competence in workplace readiness, career development, and lifelong learning.

| <b>Performance Standard 12.5</b> | <b>Students will demonstrate knowledge of interpersonal skills as they relate to the workplace.</b>   |
|----------------------------------|---|
| <b>EXCEEDS STANDARD</b>          | <ul style="list-style-type: none"> <li>• Perform roles in a student leadership association.</li> <li>• Describe strategies necessary for negotiating agreements.</li> <li>• Develop an understanding and appreciation for work ethic.</li> </ul>  |
| <b>MEETS STANDARD</b>            | <p>12.5.1 Develop skills needed to serve clients/customers.</p> <p>12.5.2 Demonstrate the application of skills necessary to work with people of diverse backgrounds.</p> <p>12.5.3 Develop an understanding and appreciation for teamwork through participating in simulated group projects.</p> <p>12.5.4 Develop an understanding and appreciation for the roles and work of co-workers.</p> <p>12.5.5 Demonstrate appropriate telephone/communication skills.</p> |
| <b>APPROACHES STANDARD</b>       | <ul style="list-style-type: none"> <li>• Demonstrate new skills to others.</li> <li>• Discuss leadership skills.</li> <li>• Identify skills needed to serve clients/customers.</li> </ul>   |

Nevada Academic Standards Correlation:  
English: 9.12.1



**Content and Performance Standards**  
**Employability Skills**

**Content Standard 12.0:** Students will achieve competence in workplace readiness, career development, and lifelong learning.

| <b>Performance Standard 12.6 Students will demonstrate an understanding of entrepreneurship.</b> |   |
|--|---|
| <b>EXCEEDS STANDARD</b>  | <ul style="list-style-type: none"> <li>• Identify the risks involved in ownership of a business.</li> <li>• Identify the business skills needed to operate a small business efficiently and effectively.</li> </ul>   |
| <b>MEETS STANDARD</b>  | <p>12.6.1 Describe the importance of entrepreneurship to the economy.</p> <p>12.6.2 List the advantages and disadvantages of business ownership.</p> <p>12.6.3 Identify the necessary personal characteristics of a successful entrepreneur.</p> <p>12.6.4 Discuss the importance of building a personal interest in the community.</p> |
| <b>APPROACHES STANDARD</b>   | <ul style="list-style-type: none"> <li>• Define entrepreneurship.</li> </ul>  |

## Crosswalk of Photography Standards and Academic Standards

The crosswalk of the Photography Standards with the state standards for Math, Science and English Language Arts shows by performance indicator where the learning activities in the photography program supports academic learning. The performance indicators from the Photography Standards are grouped according to the performance standard they support; each performance indicator supports one or more of the academic standards in each corresponding cell.

**Content Standard 1.0:**        **Students will demonstrate understanding of the history of photography by describing and analyzing the role and development of photography in past and present cultures.**

| Performance Indicators | Academic Standards  |
|------------------------|---|
| 1.1.1                  | <b>English</b><br>6.12.2 Organize ideas and composition by selecting and applying structures and (through) comparison/contrast or cause/effect, (compare/contrast) which (to) enhance the central idea, theme, or purpose.  |
| 1.1.2                  | <b>Science</b><br>N.12.B.4 Students know scientific knowledge builds on previous information.<br><b>English</b><br>4.12.5 Analyze how historical and cultural contexts influence the content and validity of informational texts.<br>6.12.2 Organize ideas and composition by selecting and applying structures and (through) comparison/contrast or cause/effect, (compare/contrast) which (to) enhance the central idea, theme, or purpose. |
| 1.1.3                  | <b>Science</b><br>N.12.B.4 Students know scientific knowledge builds on previous information.<br><b>English</b><br>6.12.2 Organize ideas and composition by selecting and applying structures and (through) comparison/contrast or cause/effect, (compare/contrast) which (to) enhance the central idea, theme, or purpose.   |
| 1.1.5                  | <b>Science</b><br>N.12.B.4 Students know scientific knowledge builds on previous information.<br><b>English</b><br>4.12.5 Analyze how historical and cultural contexts influence the content and validity of informational texts.<br>6.12.2 Organize ideas and composition by selecting and applying structures and (through) comparison/contrast or cause/effect, (compare/contrast) which (to) enhance the central idea, theme, or purpose. |
| 1.1.6, 1.1.7           | <b>English</b><br>2.8.3 Locate essential information, make and verify predictions, draw conclusions, and make inferences in literary, informational, and functional text.   |
| 1.1.8                  | <b>Science</b><br>N.12.B.1 Students know science, technology, and society influenced one another in both positive and negative ways.<br><b>English</b><br>4.12.3 Locate, organize, interpret, and synthesize information from multiple primary and secondary sources to support ideas and positions.<br>4.12.5 Analyze how historical and cultural contexts influence the content and validity of informational texts.                        |
| 1.1.9                  | <b>English</b><br>4.12.3 Locate, organize, interpret, and synthesize information from multiple primary and secondary sources to support ideas and positions   |

|        |   |
|--------|---|
| 1.1.10 | <p><b>Science</b><br/>N.12.B.1 Students know science, technology, and society influenced one another in both positive and negative ways.</p> <p><b>English</b><br/>4.12.3 Locate, organize, interpret, and synthesize information from multiple primary and secondary sources to support ideas and positions.<br/>11.12.5 Organize and present research findings using appropriate media.</p> |
|--------|---|

**Content Standard 2.0: Students will demonstrate knowledge and understanding of the laws and ethics as they relate to photography.**

| Performance Indicators | Academic Standards   |
|------------------------|--|
| 2.1.1                  | <p><b>Science</b><br/>N.12.B.3 Students know the influence of ethics on Scientific enterprise.</p> <p><b>English</b><br/>10.12.2 Negotiate to arrive at consensus by proposing and examining possible options.<br/>10.12.3 Identify and practice techniques such as setting time limits for speakers and deadlines for decision making to improve productivity of group discussions.</p> |
| 2.1.2                  | <p><b>Science</b><br/>N.12.B.3 Students know the influence of ethics on Scientific enterprise.</p>   |
| 2.1.3                  | <p><b>Science</b><br/>N.12.B.3 Students know the influence of ethics on Scientific enterprise.<br/>N.12.B.4 Students know scientific knowledge builds on previous information.</p> <p><b>English</b><br/>10.12.1 Participate in problem-solving conversations or group discussions by identifying, synthesizing, and evaluating data.</p>  |
| 2.1.4                  | <p><b>Science</b><br/>N.12.B.3 Students know the influence of ethics on Scientific enterprise.<br/>N.12.B.4 Students know scientific knowledge builds on previous information.</p>   |
| 2.1.6                  | <p><b>Science</b><br/>N.12.B.3 Students know the influence of ethics on Scientific enterprise.</p> <p><b>English</b><br/>10.12.1 Participate in problem-solving conversations or group discussions by identifying, synthesizing, and evaluating data.<br/>10.12.2 Negotiate to arrive at consensus by proposing and examining possible options.</p>                                      |

**Content Standard 3.0: Students will be able to demonstrate the safe use of photographic materials and equipment.**

| Performance Indicators | Academic Standards   |
|------------------------|--|
| 3.1.1                  | <p><b>Science</b><br/>N.12.A.4 Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.</p> <p><b>English</b><br/>9.12.1 Use specific and varied vocabulary and apply standard English to communicate ideas.</p>   |
| 3.1.2                  | <p><b>Science</b><br/>N.12.A.4 Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.</p> <p><b>English</b><br/>9.12.2 Make formal oral or multimedia presentations, using vocabulary and public speaking techniques appropriate to audience and purpose.<br/>9.12.3 Organize and deliver planned, extemporaneous, and impromptu presentations</p> |

|       |  |
|-------|--|
|       | that address a topic and engage the audience.  |
| 3.1.3 | <b>Science</b><br>N.12.A.4 Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.<br><b>English</b><br>9.12.2 Make formal oral or multimedia presentations, using vocabulary and public speaking techniques appropriate to audience and purpose.<br>9.12.3 Organize and deliver planned, extemporaneous, and impromptu presentations that address a topic and engage the audience. |
| 3.1.6 | <b>English</b><br>10.12.2 Negotiate to arrive at consensus by proposing and examining possible options.  |
| 3.1.7 | <b>Science</b><br>P.12.C.1 Students know waves (i.e. sound, seismic, electromagnetic) have energy that can be transferred when the waves interact with matter.<br>P.12.C.5 Students know the relationship between heat and temperature.<br>P.12.C.6 Students know electricity is transferred from generating sources for consumption and practical uses.   |

**Content Standard 4.0: Students will identify and use different types of cameras and camera accessories.**

| Performance Indicators     | Academic Standards   |
|----------------------------|--|
| 4.1.1, 4.1.2               | <b>English</b><br>6.12.2 Organize ideas and composition by selecting and applying structures and (through) comparison/contrast or cause/effect, (compare/contrast) which (to) enhance the central idea, theme, or purpose.   |
| 4.1.3                      | <b>English</b><br>9.12.1 Use specific and varied vocabulary and apply standard English to communicate ideas.   |
| 4.1.5, 4.1.6, 4.1.7        | <b>English</b><br>10.12.3 Identify and practice techniques such as setting time limits for speakers and deadlines for decision making to improve productivity of group discussions.  |
| 4.2.3                      | <b>Math</b><br>3.12.3 Select and use appropriate measurement tools, techniques, and formulas to solve problems in mathematical and practical situations.<br>4.12.1 Identify and use the parts of a circle to solve mathematical and practical problems.<br>Identify and apply properties of interior and exterior angles of polygons to solve mathematical and practical problems.<br><b>English</b><br>1.6.4 Use dictionaries and glossaries to verify the meanings of unknown words and phrases, including common foreign expressions to increase comprehension.<br>4.12.3 Locate, organize, interpret, and synthesize information from multiple primary and secondary sources to support ideas and positions. |
| 4.2.5                      | <b>English</b><br>1.6.4 Use dictionaries and glossaries to verify the meanings of unknown words and phrases, including common foreign expressions to increase comprehension.   |
| 4.2.6, 4.2.7, 4.2.8, 4.2.9 | <b>English</b><br>6.12. 2 Organize ideas and composition by selecting and applying structures and (through) comparison/contrast or cause/effect, (compare/contrast) which (to) enhance the central idea, theme, or purpose.  |

**Content Standard 5.0: Students will demonstrate competence in the use of exposure settings to achieve desired photographic effects.**

| <b>Performance Indicators</b> | <b>Academic Standards</b>   |
|-------------------------------|---|
| 5.1.1                         | <b>Math</b><br>3.12.3 Select and use appropriate measurement tools, techniques, and formulas to solve problems in mathematical and practical situations.  |
| 5.1.2                         | <b>Math</b><br>2.12.2 Isolate any variable in given equations, inequalities, proportions, and formulas to use in mathematical and practical situations.<br>3.12.3 Select and use appropriate measurement tools, techniques, and formulas to solve problems in mathematical and practical situations.<br><b>Science</b><br>N.12.A.5 Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.<br><b>English</b><br>9.12.1 Use specific and varied vocabulary and apply standard English to communicate ideas. |
| 5.1.5                         | <b>Math</b><br>1.12.8 Identify and apply real number properties to solve problems.<br><b>Science</b><br>N.12.A.2 Students know scientists maintain a permanent record of procedures, data, analysis, decisions, and understandings of scientific investigations.  |
| 5.1.6                         | <b>Science</b><br>P.12.B.1 Students know laws of motion can be used to determine the effects of forces on the motion of objects.<br><b>English</b><br>9.12.1 Use specific and varied vocabulary and apply standard English to communicate ideas.  |
| 5.1.7                         | <b>Math</b><br>3.12.5 Determine the measure of unknown dimensions, angles, areas, and volumes using relationships and formulas to solve problems.<br><b>English</b><br>9.12.1 Use specific and varied vocabulary and apply standard English to communicate ideas.   |
| 5.1.9                         | <b>Math</b><br>3.12.5 Determine the measure of unknown dimensions, angles, areas, and volumes using relationships and formulas to solve problems.   |

**Content Standard 6.0: Students will demonstrate a basic understanding of elements and principles of art and composition as applied to photography.**

| <b>Performance Indicators</b> | <b>Academic Standards</b>   |
|-------------------------------|---|
| 6.2.2                         | <b>English</b><br>7.12.1 Apply the rules of usage, grammar, and capitalization with very few significant errors; use modifiers, parallel structure, and subordination correctly in writing.<br>7.12.3 Use rules of punctuation; manipulate conventions for emphasis in writing.<br>7.12.4 Use rules of capitalization.<br>7.12.5 Demonstrate conventional spelling.<br>9.12.1 Use specific and varied vocabulary and apply standard English to communicate ideas. |

**Content Standard 7.0: Students will demonstrate an understanding of the different light sources and their proper use.**

| Performance Indicators | Academic Standards  |
|------------------------|---|
| 7.1.1                  | <b>Science</b><br>P.12.C.5 Students know the relationship between heat and temperature.   |
| 7.1.5                  | <b>Math</b><br>1.12.8 Identify and apply real number properties to solve problems.<br>3.12.3 Select and use appropriate measurement tools, techniques, and formulas to solve problems in mathematical and practical situations. |
| 7.1.3                  | <b>Science</b><br>P.12.C.6 Students know electricity is transferred from generating sources for consumption and practical uses.   |
| 7.1.7                  | <b>Science</b><br>P.12.C.1 Students know waves (i.e. sound, seismic, electromagnetic) have energy that can be transferred when the waves interact with matter.  |
| 7.1.10                 | <b>Science</b><br>P.12.B.1 Students know laws of motion can be used to determine the effects of forces on the motion of objects.  |

**Content Standard 8.0 For those programs teaching silver-based photography, students will demonstrate knowledge in the selection, development and printing of film.**

| Performance Indicators | Academic Standards   |
|------------------------|--|
| 8.1.2                  | <b>English</b><br>2.12.2 Use specific repair strategies such as summarizing, clarifying ambiguities, and consulting other sources.   |
| 8.1.3                  | <b>Science</b><br>P.12.A.5 Students know chemical reactions can take place at different rates, depending on a variety of factors (i.e. temperature, concentration, surface area, and agitation).   |
| 8.2.2                  | <b>Math</b><br>3.12.3 Select and use appropriate measurement tools, techniques, and formulas to solve problems in mathematical and practical situations.<br><b>Science</b><br>P.12.A.5 Students know chemical reactions can take place at different rates, depending on a variety of factors (i.e. temperature, concentration, surface area, and agitation).   |
| 8.2.3                  | <b>Science</b><br>N.12.A.4 Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.  |
| 8.2.4                  | <b>English</b><br>4.12.6 Read and apply multi-step directions in order to perform complex procedures and tasks.  |
| 8.2.5                  | <b>Math</b><br>2.12.2 Isolate any variable in given equations, inequalities, proportions, and formulas to use in mathematical and practical situations.<br>3.12.1 Estimate and convert between customary and metric systems.<br>3.12.3 Select and use appropriate measurement tools, techniques, and formulas to solve problems in mathematical and practical situations.<br>3.12.5 Determine the measure of unknown dimensions, angles, areas, and volumes using relationships and formulas to solve problems.<br><b>Science</b><br>N.12.A.4 Students know how to safely conduct an original scientific investigation |

|       |   |
|-------|---|
|       | using the appropriate tools and technology.   |
| 8.2.6 | <b>Science</b><br>N.12.A.5 Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.   |
| 8.2.7 | <b>Science</b><br>N.12.A.5 Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.   |
| 8.3.1 | <b>English</b><br>1.6.4 Use dictionaries and glossaries to verify the meanings of unknown words and phrases, including common foreign expressions to increase comprehension.  |
| 8.3.2 | <b>Math</b><br>1.12.7 Solve mathematical problems involving exponents and roots. Perform addition, subtraction, and scalar multiplication on matrices.<br>3.12.3 Select and use appropriate measurement tools, techniques, and formulas to solve problems in mathematical and practical situations.<br>3.12.5 Determine the measure of unknown dimensions, angles, areas, and volumes using relationships and formulas to solve problems.<br><b>Science</b><br>P.12.A.5 Students know chemical reactions can take place at different rates, depending on a variety of factors (i.e. temperature, concentration, surface area, and agitation).<br>N.12.A.3 Students know repeated experimentation allows for statistical analysis and unbiased conclusions.<br><b>English</b><br>4.12.6 Read and apply multi-step directions in order to perform complex procedures and tasks. |
| 8.3.3 | <b>English</b><br>4.12.6 Read and apply multi-step directions in order to perform complex procedures and tasks.   |
| 8.3.4 | <b>English</b><br>2.12.1 Refine pre-reading strategies such as, accessing prior knowledge, predicting, previewing and setting a purpose to ensure comprehension.<br>4.12.6 Read and apply multi-step directions in order to perform complex procedures and tasks.   |
| 8.3.5 | <b>Science</b><br>N.12.A.4 Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.<br><b>English</b><br>4.12.6 Read and apply multi-step directions in order to perform complex procedures and tasks.  |
| 8.3.6 | <b>Science</b><br>N.12.A.2 Students know scientists maintain a permanent record of procedures, data, analysis, decisions, and understandings of scientific investigations.<br><b>English</b><br>4.12.6 Read and apply multi-step directions in order to perform complex procedures and tasks.   |
| 8.3.7 | <b>Science</b><br>N.12.A.3 Students know repeated experimentation allows for statistical analysis and unbiased conclusions.   |

**Content Standard 9.0** Students will demonstrate an understanding of capturing, manipulating, storing, and printing of digital images.

| Performance Indicators | Academic Standards   |
|------------------------|--|
| 9.1.9                  | <b>Math</b><br>1.12.8 Identify and apply real number properties to solve problems.   |
| 9.1.10                 | <b>English</b><br>6.12.2 Organize ideas and composition by selecting and applying structures and (through) comparison/contrast or cause/effect, (compare/contrast) which (to) enhance the central idea, theme, or purpose. |
| 9.3.3                  | <b>Math</b><br>3.12.3 Select and use appropriate measurement tools, techniques, and formulas to solve problems in mathematical and practical situations.   |
| 9.4.1                  | <b>Science</b><br>P.12.C.6 Students know electricity is transferred from generating sources for consumption and practical uses.  |
| 9.4.2                  | <b>Math</b><br>3.12.5 Determine the measure of unknown dimensions, angles, areas, and volumes using relationships and formulas to solve problems.  |
| 9.4.3, 9.4.4           | <b>English</b><br>6.12.2 Organize ideas and composition by selecting and applying structures and (through) comparison/contrast or cause/effect, (compare/contrast) which (to) enhance the central idea, theme, or purpose. |
| 9.4.5, 9.4.6           | <b>Math</b><br>3.12.5 Determine the measure of unknown dimensions, angles, areas, and volumes using relationships and formulas to solve problems.  |

**Content Standard 10.0:** Students will demonstrate competence in presentation techniques and portfolio development.

| Performance Indicators | Academic Standards   |
|------------------------|--|
| 10.1.2                 | <b>English</b><br>10.12.4 Justify a position using logic and refuting opposing viewpoints. |

**Content Standard 11.0:** Students will identify and research career options in the photography industry.

| Performance Indicators | Academic Standards  |
|------------------------|---|
| 11.1.1                 | <b>English</b><br>11.12.1 Formulate cross-curricular research questions and use an appropriate research design to gather information.<br>11.12.2 Evaluate possible sources of information for credibility and usefulness. |

**Content Standard 12.0:** Students will achieve competence in workplace readiness, career development, and lifelong learning.

| Performance Indicators | Academic Standards  |
|------------------------|---|
| 12.1.5                 | <b>English</b><br>7.12.1 Apply the rules of usage, grammar, and capitalization with very few significant errors; use modifiers, parallel structure, and subordination correctly in writing.<br>7.12.3 Use rules of punctuation; manipulate conventions for emphasis in writing.<br>7.12.4 Use rules of capitalization.<br>7.12.5 Demonstrate conventional spelling. |
| 12.3.2, 12.3.5         | <b>English</b><br>5.9.2 Write careers and workplace communications, such as business letters, résumés,  |



|        |  |
|--------|--|
|        | or job applications and produce workplace communications such as memos, charts, and graphs.                  |
| 12.5.5 | <b>English</b><br>9.12.1 Use specific and varied vocabulary and apply standard English to communicate ideas. |