

**Pequea Valley School District
Technology Education**

Unit: The History of Photography

Course: Advanced Photography

Grade: HS

Planning the Focus Based on the Desired Result

What do you want all students to know, understand and do by the end of the unit?

Unit Essential Question(s) How has advancements in technology shaped the world of photography and society?

- Identify key dates in the development of photography
- Understand how the development of photography has affected society
- Explain the recent trends in photography while contrasting digital photography to traditional film methods

Keystone Eligible Content/PA Core Standard

3.8.12. C. Evaluate the consequences and impacts of scientific and technological solutions.

- Analyze and communicate the positive or negative impacts that a recent technological invention had on society.
- Evaluate technological developments that have changed the way humans do work and discuss their impacts (e.g., genetically engineered crops).

Pacing: Approximate number of class sessions per unit

Time Line - 2 Class Periods

Pinhole Camera- 3 Class Periods

Develop a Film Photograph - 5 Class Periods

Tier 3 Vocabulary (Content specific vocabulary)

Camera Obscura

Digital

Lens

SLR

Pentaprism

Negative

Silver Halides

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- The learners will know the important dates in the development of photography.
- The learners will be able to identify key components on a film camera and compare them to parts of a digital model.
- The learners will be able to demonstrate the basic functions of a camera by building a basic pinhole camera.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- The learners will understand the differences between film and digital photography.
- The learners will understand how digital photography has impacted society.
- The learners will understand that all new innovations and inventions provide both positive and negative outcomes.
- The learners will understand how photography's exponential growth in technology illustrates a general trend in technological growth.

Learning Outcome - What do students need to be able to **accomplish** by the unit's end? *List skills and competencies.*

- The learners will complete the timeline assignment to demonstrate their understanding of the growth in the field of photography.
- The learners will design, build, and use a pinhole camera to take images with traditional film processing techniques.
- The learners will also complete one project using a film camera to compare their finished experience to the world of digital photography.

Literature:

Software/Resources: Modern Marvels: Captured Light (DVD)

**Pequea Valley School District
Technology Education**

Unit: Camera Controls

Course: Advanced Photography

Grade: HS

Planning the Focus Based on the Desired Result

What do you want all students to know, understand and do by the end of the unit?

Unit Essential Question(s) How can the controls on cameras be manipulated to produce interesting photographs?

- Manipulate aperture to control depth of field
- Adjust shutter speed to control motion
- Set ISO speed to adjust light sensitivity
- Manipulate white balance to adjust the tint of a picture
- Change exposure compensation to darken and lighten a photograph

Keystone Eligible Content/PA Core Standard

3.6.12. B. Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.

- Analyze and evaluate a message designed and produced using still, motion and animated communication techniques.

3.7.12. A. Apply advanced tools, materials and techniques to answer complex questions.

- Evaluate and use technological resources to solve complex multistep problems.

Pacing: Approximate number of class sessions per unit

Creative Modes Lab - 1 Day

Aperture Lab - 2 Days

Shutter Lab - 2 Days

ISO Speed Lab - 1 Day

White Balance and Exposure Compensation Lab - 2 Days

Equal Exposure Lesson - 2 Days

Tier 3 Vocabulary (Content specific vocabulary)

Aperture

Depth of Field

Circles of Confusion

Shutter Speed

ISO Speed

White Balance

Light Meter
Exposure Compensation
Equal Exposure
f/Stop
Stop

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Learners will know how to manipulate depth of field with aperture.
- Learners will know how to freeze or blur motion with shutter speed.
- Learners will know how to adjust the sensitivity of a camera with ISO speed.
- Learners will know how to neutralize the color of a light source with white balance.
- Learners will know the definition of an equal exposure.
- Learners will know how to darken or lighten a picture with equal exposure.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- Learners will know how to select the appropriate camera settings to produce an intended effect on a photograph.
- Learners will understand how equal exposures are manipulated in photography.

Learning Outcome - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- Learners will complete a summative exam on camera controls.

Literature:

Software/Resources:

Pequea Valley School District

Technology Education

Unit: Photography Design Elements

Course: Advanced Photography

Grade: HS

Planning the Focus Based on the Desired Result

What do you want all students to know, understand and do by the end of the unit?

Unit Essential Question(s) How are elements manipulated to produce an aesthetically pleasing photograph?

- Explain how informal and formal balance can be utilized to improve a composition
- Explain how contrast can be used to emphasis a subject in a photograph
- Explain how unity can be applied to a photograph
- Explain how rule of thirds can be applied to a photograph
- Explain how scale impacts design
- Demonstrate how perspective can change a photograph
- Explain how lines can suggest motion in a static image

Keystone Eligible Content/PA Core Standard

3.6.12. B. Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.

- Apply and analyze advanced information techniques to produce a complex image that effectively conveys a message (e.g., desktop publishing, audio and/or video production).
- Analyze and evaluate a message designed and produced using still, motion and animated communication techniques.

Pacing: Approximate number of class sessions per unit

2 Days - Research Rules of Composition

4 Days - Design Poster

1 Day - Present Posters

2 Days - Photograph Scavenger Hunt

1 Day - Assessment

Tier 3 Vocabulary (Content specific vocabulary)

Informal Balance

Formal Balance

Contrast

Unity

Rule of Thirds

Scale
Perspectives
Implied Line
Depth of Field
Portrait
Landscape

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- The learners will know the difference between formal and informal balance.
- The learners will be able to emphasize a subject using contrast.
- The learners will be able to create a sense of unity in the photograph by using common display elements.
- The learners will be able to place a subject using the rule of thirds.
- The learners will be able to use scale in a photograph.
- The learners will be able to use perspectives to create interesting photographs.
- The learners will be able to use implied lines to suggest motion.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- The learners will be able to create an original and creative image using the rules of composition to improve their images.

Learning Outcome - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- The students will be assessed using a summative exam for the rules of composition.
- Multiple smaller formative class assignments will accompany the exam for the method of assessment.

Literature:

Software/Resources:

**Pequea Valley School District
Technology Education**

Unit: Macro Photography

Course: Advanced Photography

Grade: HS

Planning the Focus Based on the Desired Result

What do you want all students to know, understand and do by the end of the unit?

Unit Essential Question(s) How can everyday objects be captured in an interesting perspective using macro photography.

- Install and use lens filters on a camera lens
- Explain the different types of lens filters
- Define macro photography and contrast the term to close-up photography

Keystone Eligible Content/PA Core Standard

3.6.12. B. Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.

- Analyze and evaluate a message designed and produced using still, motion and animated communication techniques.

Pacing: Approximate number of class sessions per unit

1Day - Lesson on Macro Photography/Macro Photography Session

4 Days - Macro Photography Assignment

Tier 3 Vocabulary (Content specific vocabulary)

Macro Photography
Close-up Photography
Focal Plane
Lens Filter
Lens Diameter

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- The learners will know the definition of macro photography.
- The learners will know the definition of close-up photography.
- The learners will know how to install a lens filter.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- The learners will understand how to use macro photography to generate fascinating images of ordinary objects through the use of filters.

Learning Outcome - What do students need to be able to **accomplish** by the unit's end? *List skills and competencies.*

- Macro Photography Collage Poster

Literature:

Software/Resources:

**Pequea Valley School District
Technology Education**

Unit: Matting

Course: Advanced Photography

Grade: HS

Planning the Focus Based on the Desired Result
What do you want all students to know, understand and do by the end of the unit?

Unit Essential Question(s) How does proper presentation affect the quality of a photograph?

- Explain the purpose of matting a picture
- Calculate the correct size for a mat for a photograph
- Use a mat cutter to create a mat for photographs
- Select the correct frame size for a matted photograph

Keystone Eligible Content/PA Core Standard

3.7.12. A. Apply advanced tools, materials and techniques to answer complex questions.

Evaluate and use technological resources to solve complex multi-step problems.

3.7.12. B. Evaluate appropriate instruments and apparatus to accurately measure materials and processes.

- Apply and evaluate the use of appropriate instruments to accurately measure scientific and technologic phenomena within the error limits of the equipment.
- Evaluate the appropriate use of different measurement scales (macro and micro).

Pacing: Approximate number of class sessions per unit

2 Days - Matting Lesson

1 Day - Single Photo Matting Exercise

2 Days - Related Photoshop Techniques

6 Days - Matting Project

Tier 3 Vocabulary (Content specific vocabulary)

Matting

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Learners will be able to lay out a mat for a collection of photographs.
- Learners will be able to cut and assemble a mat.
- Learners will be able to explain the purpose of a mat.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- Learners will understand basic framing techniques and be able to display their images in a creative and professional manner.

Learning Outcome - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- The learners will complete a matting assignment that includes a single matting project and a multiple matted collage.

Literature:

Software/Resources:

Pequea Valley School District

Technology Education

Unit: Advanced Photoshop Technology Word, HDR, Automate

Course: Advanced Photography

Grade: HS

Planning the Focus Based on the Desired Result

What do you want all students to know, understand and do by the end of the unit?

Unit Essential Question(s) How can Photoshop be utilized to improve an image through the use of advanced processing techniques?

- Use the advanced text features in PhotoShop
- Apply high dynamic range (HDR) photography to a photograph
- Use the automate command to adjust large batches of photographs

Keystone Eligible Content/PA Core Standard

3.6.12. B. Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.

- Apply and analyze advanced information techniques to produce a complex image that effectively conveys a message (e.g., desktop publishing, audio and/or video production).

3.7.12. A. Apply advanced tools, materials and techniques to answer complex questions.

- Evaluate and use technological resources to solve complex multistep problems.

C. Evaluate computer operations and concepts as to their effectiveness to solve specific problems.

Analyze and solve hardware and advanced software problems.

3.7.12. D. Evaluate the effectiveness of computer software to solve specific problems.

Design and apply advanced multimedia techniques.

Pacing: Approximate number of class sessions per unit

1 Day - Photoshop Text Lesson
4 Days - Photoshop Concrete Poem
1 Day - HDR Lesson
4 Days - HDR Project
1 Day - Automate Lesson
1 Day - MacOSaiX Lesson
3 Days - Photography Mosaic Project

Tier 3 Vocabulary (Content specific vocabulary)

Leading
Serif

San Serif
Kerning
Tracking
Subscript
Superscript
HDR
Bracketing
Exposure
Automation

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Learners will know how to edit text in PhotoShop
- Learners will be able to identify HDR images and explain how they are created.
- Learners will know the definition of exposure compensation.
- Learners will know how to use automation in PhotoShop.
- Learners will be able to create a photo mosaic with original images.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- Learners will understand the advanced processing options in Photoshop and be able to select the appropriate technique to improve an image.
- Learners will understand how large quantities of images are processed in industry.

Learning Outcome - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- Concrete Poem Project - Create an image through manipulating text
- HDR Project - Manipulate bracketed images into one HDR photography
- Photo Mosaic Project - Process 100 images to be assembled into a photo mosaic.

Literature:

Software/Resources:

**Pequea Valley School District
Technology Education**

Unit: Studio Photography

Course: Advanced Photography

Grade: HS

**Planning the Focus Based on the Desired Result
What do you want all students to know, understand and do by the end of the unit?**

Unit Essential Question(s) What is the process for producing high quality studio images?

- What are the different types of studio photography poses
- How can a studio kit be used to create different lighting scenarios
- How are umbrellas used to diffuse and reflect light
- How are picture packages created with PhotoShop
- How can PhotoShop be used to adjust and refine studio portraits

Keystone Eligible Content/PA Core Standard

3.7.12. A. Apply advanced tools, materials and techniques to answer complex questions.

- Evaluate and use technological resources to solve complex multistep problems.

3.6.12.. B. Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.

- Analyze and evaluate a message designed and produced using still, motion and animated communication techniques.

3.7.12. D. Evaluate the effectiveness of computer software to solve specific problems.

- Design and apply advanced multimedia techniques.

Pacing: Approximate number of class sessions per unit

2 Days - Studio Lesson

8 Days - Studio Project

1 Day - Flash Lab

1 Day Photoshop Correction of Studio Images

1 Day - Light Meter Lab

1 Day - Outputting Studio Images (Picture Packages)

1 Day - Studio Assessment

Tier 3 Vocabulary (Content specific vocabulary)

Hair Light

Key Light

Fill Light

Back Light

Soft Box
Diffusion/Reflection Umbrella
Rembrandt Lighting
Paramount Lighting
Half and Half Lighting

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Learners will know how to manipulate a camera’s flash to enhance an image.
- Learners will know how to set up a studio for studio photography.
- Learners will know how to position a subject for studio photography.
- Learners will be able to measure the brightness of a flash with a light meter.
- Learners will be able to enhance studio portraits in PhotoShop and export picture packages.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- Learners will understand how professional photographers create creative and visually appealing portraits using various industrial tools.

Learning Outcome - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- **Summative Exam** - Learners will complete a summative exam that focuses on key Studio Photography terminology.
- **Studio Project** - Learners will complete a portrait for a classmate using three arrangements and enhance the photographs in PhotoShop. The project will be outputted using picture packages.

Literature:

Software/Resources:

Pequea Valley School District

Technology Education

Unit: High Speed Photography

Course: Advanced Photography

Grade: HS

Planning the Focus Based on the Desired Result

What do you want all students to know, understand and do by the end of the unit?

Unit Essential Question(s) How can a photographer capture an action in a fraction of a second?

- How are extended shutters used for creative photographs?
- How is high speed photography used to capture an image?
- How can different photography editing techniques be used to improve a photograph?

Keystone Eligible Content/PA Core Standard

3.6.12. B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.

- Apply and analyze advanced information techniques to produce a complex image that effectively conveys a message (e.g., desktop publishing, audio and/or video production).

3.7.12. A. Apply advanced tools, materials and techniques to answer complex questions.

- Evaluate and use technological resources to solve complex multistep problems.

3.7.12. C. Evaluate computer operations and concepts as to their effectiveness to solve specific problems.

- Analyze and solve hardware and advanced software problems.

3.7.12. D. Evaluate the effectiveness of computer software to solve specific problems.

- Design and apply advanced multimedia techniques.

3.2.12 D. Analyze and use the technological design process to solve problems.

- Propose, develop and appraise the best solution and develop alternative solutions.

Pacing: Approximate number of class sessions per unit

2 Day - High Speed Photography Lesson

4 Days - High Speed Photography

4 Days - Strobe Photography

4 Days - Laser Writing

1 Day - Gallery Walk Critique

Tier 3 Vocabulary (Content specific vocabulary)

Shutter Speed

Slave Flash
Extended Shutter
Synchronization
Tripod

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Learners will know how to control shutter speed to capture motion.
- Learners will know the definition and purpose of extended shutter.
- Learners will know the limitations of tripods and how to use one.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- Learners will understand how to manipulate shutter speeds to make creative and innovative pictures that are visually interesting.

Learning Outcome - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

High Speed Photography Project - The learners will complete the high speed photography assignment that requires them to produce two images for each of the photography techniques. (*Laser Writing, High Speed Photography, Strobe Photography*)

Literature:

Software/Resources:

Pequea Valley School District

Technology Education

Unit: High Speed Photography

Course: Advanced Photography

Grade: HS

Planning the Focus Based on the Desired Result

What do you want all students to know, understand and do by the end of the unit?

Unit Essential Question(s) How can a photographer capture an action in a fraction of a second?

- How are extended shutters used for creative photographs?
- How is high speed photography used to capture an image?
- How can different photography editing techniques be used to improve a photograph?

Keystone Eligible Content/PA Core Standard

3.6.12. B Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.

- Apply and analyze advanced information techniques to produce a complex image that effectively conveys a message (e.g., desktop publishing, audio and/or video production).

3.7.12. A. Apply advanced tools, materials and techniques to answer complex questions.

- Evaluate and use technological resources to solve complex multistep problems.

3.7.12. C. Evaluate computer operations and concepts as to their effectiveness to solve specific problems.

- Analyze and solve hardware and advanced software problems.

3.7.12. D. Evaluate the effectiveness of computer software to solve specific problems.

- Design and apply advanced multimedia techniques.

3.2.12 D. Analyze and use the technological design process to solve problems.

- Propose, develop and appraise the best solution and develop alternative solutions.

Pacing: Approximate number of class sessions per unit

2 Day - High Speed Photography Lesson

4 Days - High Speed Photography

4 Days - Strobe Photography

4 Days - Laser Writing

1 Day - Gallery Walk Critique

Tier 3 Vocabulary (Content specific vocabulary)

Shutter Speed

Slave Flash
Extended Shutter
Synchronization
Tripod

Know - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Learners will know how to control shutter speed to capture motion.
- Learners will know the definition and purpose of extended shutter.
- Learners will know the limitations of tripods and how to use one.

Understand - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- Learners will understand how to manipulate shutter speeds to make creative and innovative pictures that are visually interesting.

Learning Outcome - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

High Speed Photography Project - The learners will complete the high speed photography assignment that requires them to produce two images for each of the photography techniques. (*Laser Writing, High Speed Photography, Strobe Photography*)

Literature:

Software/Resources: