

Teachers' Circle Lesson Plan Template

Name: Marica Shannon
Subject area: Art (photography), Science
Grade level: 9 -12
Lesson title: Light in the Arts & Science

Brief summary/lesson plan description

Students will study the concept of light and how it relates to the arts and sciences. Students will practice photography and the use of light in creating a photographic image.

Common Core or State Standards Addressed

HSp.VA.Cr.3.1 Apply relevant criteria (such as the elements or principles) to examine, reflect on, and plan revisions for works of art and design in progress.

HSp.VA.Cr.3.2 Engage in self-evaluation, then reflect on, re-engage, revise, and refine works of art and design in response to personal artistic vision.

HSp.VA.Pr.5.1 Analyze and evaluate the reasons and ways an exhibition was presented.

HSp.MA.Cr.3.1 Consolidate production processes to demonstrate deliberate choices in organizing and integrating content and stylistic conventions in media arts productions, demonstrating understanding of associated principles, such as emphasis and tone.

HSp.MA.Cr.3.2 Refine and modify media artworks, honing aesthetic quality and intentionally accentuating stylistic elements, to reflect an understanding of personal goals and preferences.

HSp.MA.Pr.5.2 Develop and refine creative and adaptive abilities (such as risk taking, responsive use of failure, and resisting closure) through the media arts.

HSp.MA.Pr.5.3 Demonstrate flexibility and innovation through tools, techniques, and content to communicate intent in the production of media artworks.

HSp.MA.Re.9.1 Evaluate media art works and production processes at decisive stages using identified criteria, and considering context and artistic goals.

HS-PS4-1. Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

HS-PS4-5. Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.

HS-PS3-1 Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

HS-PS3-2. Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects)

HS-PS4-2. Evaluate questions about the advantages of using digital transmission and storage of information.

Essential Skills and Strategies Addressed (Creativity/Critical Thinking/Communication)

Essential skills addressed: Critical thinking, creativity, and communication.

Instructional Strategies/Differentiation

Guided practice (station activities) for students during class is important when introducing the topic.

Pairing strong students with students who are behind assists understanding.

One-on-one feedback before the photos are handed in assists students in choosing the photo that best represents the assignment and is also technically and compositionally correct.

Lesson objectives (Students will understand...)

In this assignment you need to use at least 3 different artificial light sources you have on hand: a flashlight, a desk lamp, living room lamp, etc. to take your photographs. No professional lighting or full sunlight should be used.

Essential Questions to guide this unit/lesson and focus teaching and learning:

1. What is light?
2. How does light relate to the arts and sciences?
3. How can light be applied in photography & other content areas?

Technology and Resources Needed

Various light sources (tungsten, fluorescent, candle, black light...)

White objects

Digital cameras

Studio light

Light reflector (white tag board will work)

Procedure (learning activities)

1. Introduction to light in Science and the Arts (Field Trip to the Washington Pavilion)
2. Lecture and discussion on the color qualities of light and how it relates to photography. Take photographs of a white object under different types of light (tungsten, fluorescent, candle...) and compare the color cast in the photograph.
3. Demonstration on how directional light is used in photography (guest speaker – professional portrait photographer)
4. Assignment: Alternative Lighting Research and photo assignment (assignment sheet attached)

Assessment Method

Students take 20+ photographs using a minimum of 3 different types of light. Students choose and edit their best photo and present that photo to the class for critique.

Museum Exhibits/Resources Utilized

Kirby Science Center: exploration of exhibits which relate to light
Science Lab: explore light in a variety of hands on experiments
Behind the Scenes: tour the theater and learn how lighting is used
Behind the Scenes: tour the art galleries and learn how light is used in the gallery, how photographs are framed to preserve and protect them from the elements (light).
Art Galleries: view and discuss how light is shown in the artwork