

Lights, Camera, FILM Literacy!

Lesson Plan #2

Topics:

Journal Writing
Early Contributors to the Moving image
Optics + Chemistry = Photography
Following written directions
Camera Obscura
Sunprints

Outcomes:

Students will follow organizational procedures.
Students will see and hear applicable vocabulary.
Students will state five contributors to early photography.
Students will experience a camera obscura.
Students will follow written directions to make sun prints.

Materials:

Writing journals
LCD projector
Chart paper
Post-its
Individual student pocket folders
Camera Obscuras (made ahead of time via Pringles site directions)
Scissors
Sun Print paper
Construction paper

HANDOUTS: How Movies Got Their Start, Section I (Optics + Chemistry = Photography)
How to Make A Sunprint
How Movies Got Their Start, Section II (Moving Image Machines)

New Vocabulary: optics, chemistry, photography, camera obscura, projection (1)

Sequence of Events:

I. Journal Writing (15)

Prompt:

What are your hopes and expectations for this class?

II. How Movies Got Their Start (20)

1. Remind students of their taped interviews and tell them they are going to make another guess about the start of movies, but this time with more structure. They will work alone or with others to fill in names on a handout that tells how movies got started. This paper will then be used as a guide and they will correct any incorrect answers over the next sessions.

HANDOUT: How Movies Got Their Start, Section I
(Optics + Chemistry = Photography)

III. Optics + Chemistry = Photography (130)

1. Write "**OPTICS + CHEMISTRY = PHOTOGRAPHY**" on the board. Ask students what they think this means.
2. Refer students to their Handout "How Movies Got Their Start" and read together #1 : "A 2,000 year-old concept that was known by _____ is demonstrated by the Camera Obscura, which literally (in Latin) means "dark room" and replicates how images appear on your eye's retina: *When light travels in a straight line and reflects off a bright object on its way into a small hole, an upside-down image of the object appears on a flat, parallel surface.*"

The correct answer is "ARISTOTLE," who lived 384 - 322 B.C.
(Students make sure this correct answer is in the #1 blank, as this handout becomes a study guide.)

3. Show a diagram of an image upside down on the eye's retina.
<http://www.google.com/images?q=retina+upside+down+image&um=1&ie=UTF-8&source=og&sa=N&hl=en&tab=wi&biw=878&bih=414>
4. Ask if anyone has seen a **CAMERA OBSCURA**. (Some might have experienced the large, free camera obscura located in the Senior Center on the beach in Santa Monica, California.)

Show photos from the brightbytes website to students.

<http://brightbytes.com/cosite/what.html>

<http://brightbytes.com/cosite/santamont.html>

5. Show students the small camera obscura(s) you've created and allow them the opportunity to look out the window and see the image reflected upside down inside the tube.

To make the camera obscura, follow the directions for the "Pringles Pinhole" at the following website:

http://www.exploratorium.edu/science_explorer/pringles_pinhole.html

6. Discuss students' reactions to the camera obscura. Tell them that many famous painters, such as Johannes Vermeer, have used this device to make their paintings more realistic.
7. Refer students once again to the handout "How Movies Got Their Start." Tell them to note that the next year listed in #2 jumps to the 18th century and the chemistry discovery was actually a mistake. Students make sure the answers are:

*#2 ...**JOHANN HEINRICH SCHULZE** put silver nitrate in a clear jar and after it was exposed to sunlight, it turned black.*

One hundred years later...

*#3... **JOSEPH NICEPHORE NIEPCE** took the first surviving photograph by coating a pewter plate with bitumen and exposing it to light.*

8. Tell students that they will now see how light can affect chemicals by cutting their own paper design and placing it on top of chemically-treated "Sunprint" paper. They follow directions on the handout and discuss afterward.

HANDOUT: How to Make a Sun Print

9. Refer students once again to "How Movies Got Their Start." Review the next answer...
*#4... **LOUIS JACQUES DAGUERRE** improved the process, which came to be called "The Daguerreotype."*

(Daguerre is honored by a memorial outside the National Portrait Gallery, across the street from the Verizon Center at 7th and F Streets in Washington, D.C.)

(Google.com/images for photos of the man, the memorial, and sample daguerreotypes)

Students have probably seen daguerreotypes, whose subjects' held no smiles as they had to hold their poses quite awhile to allow the light to affect the chemicals. Children often were blurred due to their movements. Sometimes children's arms were placed behind them and actually tied to the chairs to keep them still.

Review the next answer...

*#5... "In 1888 the founder of the Kodak company **GEORGE EASTMAN** introduced a smaller camera that used film on a roll. As a result, photography became available to everyone."*

10. Students keep this handout for later reference.

IV. Moving Images and Projection (20)

1. Tell students they will continue to guess about the start of movies, but this time with moving images and **PROJECTION**. They again fill in words on a handout and this paper will later be reviewed and used as a guide over the next sessions.

HANDOUT: How Movies Got Their Start, Section II
(Moving Image Machines)

V. Reflection (15)

1. Direct students to the hanging chart paper labeled:

What does Optics + Chemistry = Photography mean to you?

2. Hand out Post-its on which students write an item to post on the chart.
3. Review the comments on the Post-Its with the class, so students have a sense of what was learned that day. Make sure to clear up any misconceptions.