Is Seeing Believing?

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Overview

Digital manipulation has become increasingly easy. What we see and hear through media messages cannot be taken at face value. Photography has lost its air of certitude. Audio and video files can be recorded, edited, and played back as reality with little or no recognition of the alteration. With the right tools and technical skills, professionals, and now amateurs, challenge us to be more critical about the source and the message of what we see and hear. This unit will help students take an inquiry stance into understanding the evolution of photography and the pros and cons of digital manipulation as they ask the essential question, "How do we know what is true in this digital age?'

I am the computer teacher at Overbrook Elementary School. My assignments include supporting the curriculum with technology and working with students on projects to enhance their technological skills. This three-week curriculum is designed for fifth grade students and will build upon their experiences using digital cameras. Beyond "point and shoot," these students know who to use digital camera tools, upload pictures, and perform some basic photo editing. Since I worked with them this year as fourth graders, I am confidant that they will be prepared to fully participate in the planned lessons and activities. The unit will incorporate social studies, language arts, and technology in learning about media in this digital age. This three-week unit will examine the history of photography and the ramifications of photographic manipulation.

Rationale

My generation grew up with the adages: "The Camera Never Lies," and "Seeing is Believing." Photographs, newspapers, and broadcast news were accepted as representations of reality and for the most part considered to be reliable. Family, neighborhood, church and school shaped our perceptions of who we were in the world. In this day and age, our children arrive at school with television and video games as a primary frame of reference. The forms and content of media literacy need to be addressed

in the classroom to not only engage students in the learning process but to help them acquire competency in media literacy to be productive citizens of the 21st century. In our contemporary culture our students need to efficiently access and critically evaluate information mediated through a complex sets of images, words and sounds. They need to begin to ask questions about the messages they receive from all forms of media: print media, digital images and visual and audio reproductions.

This unit will focus primarily on photography and will pose questions for consideration and reflection. What criteria are needed to accept or reject mass media messages? To what degree does the media influence their beliefs and behaviors? What ethical/legal issues are involved in their own construction and consumption of media? For this unit, students will look at photographs from various times in history and in varied contexts. They will keep in mind that digital manipulation can be used to distort and falsify as well as to edit and enhance images.

Evolution of Photography

Photography has a long rich history full of innovation and discovery. It is beyond the scope of this unit to develop a complete history of photography but I think students would benefit from exploring significant events in the timeline of its evolution. In doing so they will be acquainted with the process embedded in the meaning of the word *photography*. The word is derived from the Greek meaning "light" and "write." The scientist Sir John F.W. Herschel first used the word in 1839 to describe the method of recording images by the action of light on a sensitive material. He is also credited with characterizing a photo as a "snapshot" emphasizing the short amount of time required to record an image in contrast to lengthy exposure times that are described below.[i]

Beginnings

Long before the first photograph was recorded, there were innovations leading to the development of photography. Optical devices were known in ancient times. Chinese and Greek philosophers understood the basic principles of optics and the camera but had no means of permanently recording the transient image.

In the 1500s many artists, including Michelangelo and Leonardo da Vinci, used the "camera obscura" (Latin words meaning "dark room") as an aid to drawing. It was discovered that if a room were completely darkened, with a single hole in one wall, an inverted image would be seen on the opposite wall. This early form of a "camera picture" helped the artist with perspective and detail.[ii] The camera obscura was made portable by the 1700s by putting it in a box with a pinhole on one side and a glass screen on the other. Light coming through this pinhole projected an image onto the glass screen, where the artist could easily trace it by hand. Artists soon discovered that they could obtain an even

sharper image by using a small lens in place of the pinhole. This was extremely useful in making sketches from nature.[iii]

Permanent Images

A Frenchman, Joseph Niepce, took the first photograph in 1827. He combined the camera obscura with photosensitive paper. By using chemicals on a metal plate, placed inside of a camera obscura, he was able to record an obscure image of the view outside of his window for eight hours and made a photograph! It is the earliest camera photograph that we still have today that did not fade quickly.[iv]

A few years later in 1837 another Frenchman, Louis Daguerre, designed the first real practical camera. Louis Daguerre created images on silver-plated copper, coated with silver iodide and "developed" with warmed mercury. He was awarded a state pension by the French government in exchange for publication of his methods and the rights by other French citizens to use the Daguerreotype process. In early 1839, he photographed a Paris street scene from his apartment window using a camera obscura and his newly invented daguerreotype process. The long exposure time meant moving objects like pedestrians and carriages didn't appear in the photo. But an unidentified man who stopped for a shoeshine remained still long enough to unwittingly become the first person ever photographed.[v]

Throughout the remainder of the 1800's, scientists would make gradual improvements on the camera and different methods of exposures. By 1840, when techniques had improved and exposure times were shortened, portrait photography became fashionable. People gazed in amazement at their own images in photographs. Oliver Wendell Holmes called these images "mirrors with a memory."[vi] Industries began hiring photographers to photograph the great things they did. Photographers hauled their large cameras, tripods and portable darkrooms all over the world. They photographed India, China and Japan. There was an ever-growing demand for photography to satisfy the desires of people were eager to see what these far off countries looked like.

Photography was born but was still only for professionals or the very rich until George Eastman started a company called Kodak in the 1880s. In 1884 he invented flexible, paper-based photographic film and in 1888 he patented Kodak roll-film camera allowing multiple images to be produced on light-sensitized paper.[vii]

Brownie Camera

In 1900, the Eastman Kodak Company introduced a low-priced, point-and-shoot, hand-held camera, called the Brownie. The Brownie camera was designed, priced, and marketed to have wide appeal. Kodak heavily marketed the Brownie camera to children. No longer was taking photographs just for the professionals and only of grand events. In

just the first year, the Eastman Kodak Company sold over a quarter of a million Brownies, forever changing the future of photography.[viii]

Point and Shoot

It wasn't until the late 1970s that the "point-and-shoot" or compact cameras were marketed. These cameras were capable of making image control decisions on their own by calculating shutter speed, aperture, and focus; leaving photographers free to concentrate on composition. They became very popular to the amateur photographer.

Digital Cameras

In the 1980s and 1990s, numerous manufacturers worked on cameras that stored images electronically. The first of these were point and shoot cameras that used digital media instead of film. By 1991, Kodak had produced the first digital camera advanced enough to be used successfully by professionals. Other manufacturers followed. Even the most basic point and shoot camera now takes higher quality images than Niépce's pewter plate.[ix]

Photography As A Document of the Times or Promoting Propaganda

Up to the time photography was invented events were portrayed by means of painting making it difficult to be sure of the accuracy. Although photography does add to authenticity, there are many ways by which the process can be used to manipulate and mislead, for example by selection of viewpoint, or by using a picture out of context. Used honestly, however, photography has the capacity to capture a particular moment in time, to reproduce images in considerable detail, to overcome language barriers, and compellingly to draw attention to situations about which we might otherwise be unaware. Early photographers immediately recognized this capacity[x].

   The Civil War in America was the first war to be thoroughly recorded by photography. American photographer Mathew Brady saw the importance of documenting the conflict at its beginning and organized a team of photographers to cover different battlefronts. They took thousands pictures of Civil War generals, and images of vast fields littered with the corpses in the aftermath of battle. Brady is sometimes thought of as the century's most important photographer and the man who invented photojournalism.[xi]

   Alexander Gardner, a colleague of Matthew Brady, was the official photographer of the Union armies. Unfortunately the most famous of Gardner's work has been proven to be a fake. It was discovered that the same body had been photographed in multiple locations for his photographs. He dragged the body around to create his own version of reality.[xii]

The standing portrait of Lincoln popular in classrooms and history books was created soon after the American Civil War. Lincoln never posed for it. Rather it is a composite created by cutting-and-pasting a headshot of Lincoln taken from a photograph by Mathew Brady onto a portrait of the Southern leader John Calhoun This was done because there were hardly any appropriate 'heroic-style' portraits of Lincoln made during his life.

Photo manipulation made it easier to use photography for propaganda. David King, in his book *The Commissar Vanishes*, documents how Soviet leaders who fell out of favor with Stalin were erased out of the photographic record. (1930) Mao Tse-tung and Adolf Hitler also used this technique of removing those who fell out of favor. (1936-1937). Benito Mussolini had the horse handler removed from an original photograph in order to portray himself as more heroic. (1942) [xiii]

More recently, during the 2004 campaign, then President Bush got into trouble when one of his ads, titled "Whatever It Takes," doctored the images of soldiers. In attempting to increase the number of soldiers appearing to be listening to Mr. Bush, the faces of the same soldiers appeared several times in several different places within the same crowd shot. Links to these and other photos will be listed in the appendix. For older students the study of photo manipulation would be an interesting lens into the study of history.

Photographs: Real or Fake

When photography was first invented, its overwhelming power came from the fact that it recorded nature more realistically than any other art form had ever done before. Because of this, people trusted it and believed it portrayed "reality" and "truth".[xiv]

The following examples of fake and manipulated photos will provide students a context for discussing the legal/ethical issues of doctoring photographs. The first example is one of child play, the second is motivated by monetary reward and the third is a humorous although sad commentary on the uses of photography in today's society.

Fairies in the Garden

Fake and manipulated began circulating not long after the invention of photography. In 1917, Elise Wright, age 16, and her cousin Frances Griffiths, age 10, used a simple camera to produce what they claimed were photographs of fairies in their garden in Cottingley, England [xv] Arthur Conon Doyle, creator of Sherlock Holmes, believed these photos to be real, and wrote pamphlets attesting to their truthfulness. Even today some people believe these photographs are real. The fairies in the photos were eventually revealed to be paper cutouts. In his book, *The Coming of the Fairies*[xvi], he argued that these innocent children were not capable of sophisticated photographic trickery and no reason to lie or perpetrate a hoax.[xvii]

The mystery went unsolved for decades. In 1983 in a newspaper article, the cousins confessed that it was all a hoax. But how did they do it? It's almost embarrassingly simple: they traced pictures of fairies onto paper, cut them out, stood them up with hatpins, and then took the photos. The fairies were paper drawings, not genuine spirits. Investigators used computers analysis and found that the fairies were not three-dimensional. A prank of schoolgirls got out of hand when famous authors and newspaper reporters became involved.[xviii]

Tigers in South China

The endangered South China Tiger is another example of photo forgery. Lured by a handsome reward, Zhou Zhenglong, a farmer and amateur photographer in Zhengping, claimed in 2007 that he had photographed the South China Tiger in the wild. This species of tiger had not been seen for decades. He handed in the photos to local authorities as proof of his sightings. Forestry officials rushed to claim the authenticity of his photos in anticipation of protection of the popular and endangered species in a reserve that would generate funds as a tourist attraction. A police investigation pointed out that in comparison to the plants, if the tiger had been real, it would have been only 27 centimeters long, The provincial government later admitted that the pictures were fakes and that the farmer used an old picture of a tiger and placed it in foliage in the mountains.[xix]

Family Portrait

In one of his columns, photographer Mike Johnson tells a story of a family sitting for a portrait. As he arranged and rearranged them for good lighting and composition, one daughter joked that her sister's husband should be placed in back or on an outside edge in case the newly married couple divorced and then he could be easily airbrushed out of the family photo.[xx] The joking continued and Mr. Johnson commented that the final result showed a bewildered-looking young man standing in the back of the photo. Photography, which was once the ultimate preserver of memory, was now setting the stage for altering reality.

Digital Manipulation and Digital Forensics

As digital imaging hardware and software advance and come down in price, the practice of digital image manipulation has become much more commonplace and faked photos are becoming harder to detect. In fact, digital photo manipulation -- commonly referred to as 'photoshopping' -- has recently become a popular pastime, and many consider this photographic fakery to be a new art form. But when it works its way into photojournalism and the media, the issue of ethics comes to the forefront. How far can we take digital image manipulation and still maintain photographic integrity?[xxi]

Although the field of digital image forensics is still relatively young, scientific publishers, news outlets, and the courts have begun to embrace the use of forensics to authenticate digital media. Harry Farid, a pioneer and expert in this field, believes that in the next five to 10 years the application of image forensics will become routine.[xxii] In some fraudulent cases the naked eyes of alert viewers can find flaws in the doctored image. Other cases require varied approaches using software to detect inconsistencies in light including the specks of light reflected from people's eyeballs. By understanding the statistical or geometric properties of a raw digital photograph, Farid and his team of researchers develop tools to detect how an image is disturbed by a particular kind of tampering (cloning, cropping). Mathematical algorithms are used to uncover the irregularities. This new technology, along with sensible policies and laws, will help us deal with the challenges of this "exciting—yet sometimes baffling—digital age."[xxiii]

Digital forensics is extremely important today since photographs can be used to sway a jury as well as an election. The validly of an image can thwart or advance scientific discoveries. Farid's goal of image forensics is to continue to make it harder and more time-consuming to create a forgery that cannot be detected.

Impact on Society

Today cameras are everywhere. Point and shoot. Delete some, share some, and click some more. Has all this taking and electronic storage of pictures changed the value of photography? Does the casual nature of digital photography lessen its place as an art form? Does the "photo-shopping" of images change the memory of a nation as well as the memories of individuals? If it becomes increasingly harder to trust the images we see on television, Internet, advertisements and even family photo albums, will we become a nation of skeptics?

Sociologists are questioning the impact of digital photography on relationships, and archivists are wondering if these images will last for future generations. Today's generation instantaneously shares experiences without paying attention to the archival remembrances of the previous "Kodak moment" generation. Although the daily lives of individuals are documented with so many images, will these images be lasting? Newer technologies will make it harder to read the media storage used today. In addition to the popular sharing of photographs that exist for a brief amount of time, we also need cultural artifacts that will provide the memory, as the writings, art, and photographs of our forebears preserved for us.[xxiv]

Growing up in Digital Age

As teachers we need to help our students be aware of the issues of imaging. Photo manipulation is not just about using the technology--it is about understanding our society.

Just as television helped define my generation with family shows, game shows and news coverage of historic events, digital media with its interactive and collaborative nature defines this generation. Today's students have definitely grown up digitally. Because of their facile use of computers and digital tools, they learn and play in ways that where not available to previous generations. They are at ease in the digital world quickly learning new ways and using new tools for communication and productivity.

Because the media that brings the message is no longer a top-down model, today's students have the opportunity to think more critically about media messages. They access and interact with media in their everyday lives. They need to learn the importance of questioning and checking facts, as well as sharing and shifting information with just a few clicks of their fingers.[xxv] To become responsible citizens of this digital world, our students need the knowledge of ethical/legal issues around privacy and copyright issues. They need to develop skills that will help them to learn how to authenticate what they see or hear through media, to develop skills for verifying sources, and acquire proficiency as creative consumers and producers of media.[xxvi]

Objectives:

This unit is intended for students in Grade 5 who have two scheduled computer classes per week. It will build on their experiences with digital media.

Students will develop and use the structure of a timeline to verify the chronological order of specific events related to evolution of photography.

Students will become digital detectives to discover photographic forgery. They will establish a timeline for examples of tampering throughout history.

Students will learn to locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

Students will produce a media-rich digital story about a significant local event based on first-person interviews

Standards:

The Core Curriculum of the School District of Philadelphia is aligned to Pennsylvania Academic Standards for Science and Technology. These standards include instruction on the following topics: Information Technologies, Electronic Communication Methods, Image Generating Techniques (e.g., photography, video), Evaluating New Tools and Techniques, and Ethical and Legal Issues of Media Use. Since this unit will have cross-curricula connections, it will also include Standards for all aspects of Language Arts:

Reading, Writing, Listening and Speaking as well as Standards for History. These standards are listed in the appendix.

Strategies

Journal: All students will keep a journal to document their activities, reflect on what they have learned, compile a glossary of terms, and list questions for further learning. This work will assist students in our culminating project of creating a multimedia presentation on topics related to the unit.

Timeline: A timeline will be used to introduce students to the salient events in the evolution of photography. The timeline will be printed from PowerPoint slides so students can add notes during a presentation. The sequential format will be visually less complex than reading pure text. Additionally, students will add comments about other historical happenings that correspond to these dates and times. Using timelines helps them make connections to better understand key events of historical, social, and scientific significance. As an extension of this strategy, students will create a 24-hour timeline that depicts their encounter with visual images.

Graphic Organizers: Graphic organizers help students to think visually and focus thoughts and ideas. Using a combination of visual learning and technology, students can more readily organize and analyze information. We have the software, *Inspiration,* for these purposes but there are many on-line templates. I highly recommend the ones available at the website, ReadWriteThink.org. In this unit we will use Venn Diagrams to compare and contrast, and Cluster Maps to organize and display information.

Research: Students will engage in activities to help them plan, explore, collect, organize and present material from a variety of information sources. In using the Internet they will evaluate the credibility of information (blogs, websites, journals and newspapers online), respect the work of others, understand copyright issues, and provide proper citations.

Photo Editing: Today digital cameras come equipped with several editing tools. These are fairly easy to use but are limited. The application, *iPhoto,* is also an intuitive and easy-to-learn editing software that allow students to retouch (erase small defects in photos), crop (cut out or trim unneeded portions of an image), rotate (turn in 90 degree increments) All of the tools are non-destructive so students can revert back to the original photo settings. Students will be encouraged to edit in small increments and referring to the entire image as you edit for the best results. Students will also have opportunities to use Photoshop Elements for ore advanced editing.

Non-Fiction Reading Strategies: Students will read articles and resource material online. They will utilize strategies to help them comprehend. They will practice posing a question before they read, skim the test to locate essential information that can help them

answer a question, and apply what they are learning to their own lives, other texts, family, friends, community, or world issues.

Classroom Activities/Lesson Plans

Lesson 1: Photography: Then and Now

Objectives: Students will begin an inquiry into the history of photography.

Duration: Two periods: 45 minutes each

Procedure:

Day 1: Purposes of Photography

We will begin by brainstorming the purposes of photography: storing memories, recording history, communication, entertainment and visual expression, etc. We will record responses on chart paper and keep for later reference. I will ask students if they know any examples of media events that were purposely altered to "improve" audience experiences. If students are not familiar, I will have a few clips ready to view and discuss in order to heighten their awareness of "is seeing believing."

Students will then work in pairs or small groups to use computers with Internet access to find examples for the purposes listed on chart paper. Using the software program, *Inspiration*, they will create a graphic representation of their findings that includes types, purposes and dates of photographs. The lesson will conclude by sharing information and noting any similarities or differences in the report outs.

Day 2: Brief History of Photography

I will use a PowerPoint presentation to highlight import events in the evolution of photographs featuring examples of camera apparatus and photographs. Students will have printout of dates and types. As they view the photographs they will comment on the quality of pictures and what kinds of pictures (portrait, landscape, etc) are taken. We will discuss how photography was once only for professionals and wealthy and now due to digital formats is affordable and enticing for amateurs.

Students will then select one time period to explore in a little more depth. This will be done in conjunction with the 5th grade classroom teacher as part of the language arts and social studies curriculum. Extra time will be needed to complete this. They will display the timeline in their classroom and refer to it as they encounter other events in their history lessons helping them to make connections with historical, social, and scientific significance.

We will conclude the lesson with a journal entry about photography. Students will choose form one of the following prompts:

- What is the relationship between art and photography?
- What do you think was/is the main purpose of photography: In the 1800's. 1900's, 2000's?
- What was the average person's attitude about the truth and value of a photograph in different times periods?
- How does society reflect/react to the uses of photography?
- Does photography help you know the truth of an event? How will you know if the picture is a true representation of people, places and things?

These entries will be saved for further consideration and for use in a culminating project.

Lesson 2: Photo Fakes

Objectives: Students will learn about the reasons and ramifications of tampering with photographs. Students will enjoy using digital cameras to photograph and edit their own fact or fake photo.

Duration: Three periods: 45 minutes each

Procedure:

Day 1: Fairies and Tigers

I will begin by having students view photographs that I have copied to a folder on their computer. They will work in pairs to decide if the photos are real or fake. We will tally their results and then I will reveal the answers. It is important to be selective because some sites contain material that is inappropriate to young students.

Next, I will ask students if they have seen or heard of the film, "Fairy Tale: A True Story." According to their responses, I will provide background information. The story, available on DVD, is loosely based on the 20th Century controversy involving two cousins, Elise Wright, age 16, and her cousin Frances Griffiths, age 10, who take photographs of fairies n their garden and these pictures are believed by some people to be the first scientific evidence of the existence of fairies. Students will view snippets of the film depicting he fairies and we will discuss the feasibility of the girls' claim and find evidence to support their claim for fact or fake.

Next I will show them photographs of the South China tiger and tell them the story of the farmer's claim to have risked his life to photograph them. Students will share their responses as to the photographs and decide if they area fact or fake.

We will conclude the lesson by pointing put the similarities and differences using a Venn diagram (created in I*nspiration*). Points of interest might include method, motivation, media coverage, skeptics and length of time to reveal truth.

Students will be assigned a journal entry from one of the following prompts:
- Why did people believe or not believe the stories of the fairies or the tiger?
- Is there ever a reason to fake a photo as fact
- Do you know other examples of faked photographs

Day 2: Using Digital Cameras

Students will work in small groups to take pictures with digital cameras. Most students in this class will have had experiences with using the cameras. I will explain to the students that they are going to use one of my stuffed animals for a picture. (Or they can bring in one of their own) They will practice taking pictures of their animal in and around the classroom. (An extra pair of hands would be helpful). I will schedule this on a day when I have volunteers from nearby university doing service learning. They can help with technical needs and moving around the room and hallway.

I am fortunate to have 12 digital cameras that students can sign out to complete the next phase of the project. I have already tried this and was pleased with the success. Students will place their animal in a setting at home and take several shots experimenting with angle, composition, and uncluttered background. I will demonstrate each of these techniques and remind students about proper care of the camera.

Day 3: "Photo Phun"

I will begin by having students upload their pictures to iPhoto on the computers. Then I will demonstrate basic editing tools of this application: Rotate, crop, straighten, and remove red eye. Students will experiment with one of their pictures (you can always return to the original). Next, I will show them the effects tool (for lighting) and retouching tool (to erase blemishes or unwanted spots or marks). Students will continue editing their photos. At the conclusion of class they will identify one photo that they wish to print out for our bulletin board display entitled, "Visitors to our Neighborhood"

We will conclude with a discussion of the purpose of the assignment and the possible reactions of other students to the bulletin board. We will later critique photos to

determine which ones are more realistic than others. Students will be asked to complete the following assignment before our next class

Assignment:
- Read the article, "The Camera Never Lies but the Software Does."[xxvii] Think about the activities we did in these lessons and then respond in your journal.
- In your journal describe the similarities and differences between your "Photo Phun" project and the ones about the fairies and tigers. If a younger student asked you if this were real, how would you answer?
- When is photo enhancement artistic and when is it deceptive?
- Look more critically at photographs you see on TV, the Internet, newspapers, magazines, advertisements, textbooks, posters, etc. Can you detect any photo editing? If so, what was the purpose and how do you react to it?

Lesson 3: Straight or Manipulated Photography

Objectives: Students will experiment with a variety of techniques to explore the issues of what is truth in the world of digital photography.

Duration: Two periods: 45 minutes each

Procedure:

Day 1: Straight Photography

We will begin by showing students two images: one of a cat sitting by a window on a sunny afternoon and one of a man holding a very large cat. I will ask students what they think of each picture. I will introduce the terms "straight" or "pure" photography as images that show the world as it is, images that have not been manipulated. I will ask them to describe what the pictures are about, and to determine which was the straight image and which was manipulated.

They will then have opportunity to use digital cameras to take examples of images that might be considered portraits or still life. These images will be uploaded and shared with the class. Students will discuss their techniques used in taking picture and if they did any physical rearranging of objects or people to get a better picture. Although these pictures were not digitally manipulated, can the choice of timing, distance, place, and subject alter a picture? Photographers have a lot of decisions to make.

Assignment:

- Read over the handout of straight photography techniques
- Choose a subject (person, place or thing)
- Take the same picture in a variety of ways
- Experiment with distance angle, light, composition
- Select two pictures of the same subject to upload
- In your journal, describe techniques used and results seen

Day 2: Manipulated Photography

Distorted Pictures: Using the application, *Photobooth*, students will take their own picture and then use the special effects to distort the picture. After students have some fun with this activity, we will use these points for discussion.

- How would you feel if someone uploaded that picture to a website or published it in a newspaper or magazine?
- What kind of permission do photographers need to publish their work?
- When is a photographer telling the truth or distorting it. Do you know any examples?

Students will choose one of the following activates to manipulate images.

Career Day: Every year we invite guest speakers to talk to us about careers. Now it is your turn to invite a famous person to our school. Take a picture of the classroom, library, or cafeteria. Then download a picture of a celebrity. Use editing software to trim your downloaded picture and place it in a school scene. Print out for a Phot-Phun Career Day Bulletin Board.

Color Me: Students will take a black and white photograph, and then use digital color tools to realistically or radically paint it. They will also have an option to do a technique such as a "paint-ure" by using colored chalk, colored pencils or watercolors to paint their picture in a real or creative manner. Print out for display on a Museum Bulletin Board.

Look at Me: Students will have someone take their picture. Then they will place that picture in another picture. Examples might be: Person of the Year: they will put their picture on the cover of a magazine; Future President: put their picture on a $100 bill or in the Oval Office; Famous Author: put their picture on a book jacket, etc. Print out for a Photo-Phun Celebrity Bulletin Board.

Lesson 4: Culminating Activities

Procedure:

Group Project: Student will read the article. "Point and Shoot for Bonus Points."[xxviii] They will select one category mentioned (food, transportation, business, living creatures, etc) and report out where they might find an interesting photo to include in our Photo Shoot.

Then in small groups they will plan who will take pictures for specific categories. They will have one week to take photo, upload and work with group to decide on images to include. Points will be given for inclusion of all categories mentioned in article, and bonus for the best in each category. This activity will heighten their awareness for creating their own timeline of images.

Individual Project: Students will create their own twenty-four hour timeline that depicts their encounter with visual images on any given day. They will plan for this activity by working in small groups to brainstorm times and places that they might include. For example, news media on TV, newspapers and magazines, textbooks, advertisements, billboards, food boxes and containers, Internet, cell phones, video games, etc

Students will be required to include at least 6 different examples and site times and places of encounter. They will PowerPoint to incorporate pictures and commentary. The commentary will indicate the purpose of the image, their evaluation of its being "straight or manipulated," and their judgment of its overall purpose and effectiveness.

They will also select one of their images and use the following questions to help them reflect on criteria for media literacy:

- Who created this image?
- What is the purpose?
- What techniques were used to attract and hold your attention?
- What values and points of view are represented in this message?
- Is anything or anyone omitted from the image or the message?[xxix]

Extended Activity: Photography as a Career

Not all photographers gain recognition for their work although the images may be recognized on TV, in newspapers and magazines, and on the Internet. For this assignment we will explore the work of some of our famous and not-so famous photographers.

First we will work to compile a list of different types of photographers: underwater photographers, fashion photographers, advertising photographers, digital photographers, photojournalists, portrait and landscape photographers, etc.

Next we will compile a list of photographers and their area of expertise. For example:

- Ansel Adams: Black and White Photography
- James Van Derzee, Prints of Harlem.
- Dorothea Lange: Struggles of migrant workers in America during the Great Depression
- Bernice Abbott: Photographer and teacher who documented changes in large cities.
- Chester Higgins：Staff photographer for the New York Times

Students will then select one person to research. They will include biographical information, what got them interested in photography, how they developed their skills, job opportunities and examples of their work. They will also decide if there is a need for this type of work today. Student may choose to present their work in a PowerPoint, iMovie or Podcast format.

Annotated Bibliography/Resources

Teachers' Bibliography

Print Resources

Doyle, Sir Arthur Conan. *The Coming of the Fairies*. New York: Bison Books 2006, originally 1922.
This newly released paperback version tells the story of the Cottingley photographs, which depicted two young British girls playing with what appear to be fairies in the garden. Though Conan believed in their authenticity, he lets readers decide for themselves.

Farid, Harry. "Digital Forensics: How Experts Uncover Doctored Images." *Scientific American June 2008*
The author explains how manipulation of photographs is easier to carry out and harder to uncover than ever before, but the technology that he is working on will also enable new methods of detecting doctored images

King, David. *The Commissar Vanishes*. New York: Metropolitan Books, 1997.
This text is a classic example of photo tampering. It is frequently referenced to discuss the issues surrounding this topic.

Lightfoot, Alexandrea and Ewald, Wendy. *I Wanna Take Me a Picture*. Boston: Beacon Press, 2002.

This book is a practical guide to getting children involved in photography. The book starts with a chapter about learning to read photographs. The second chapter outlines the way in which concepts of photography and writing are combined to help students understand how to use photography and writing to document their lives.

Meltzer, Bonnie. Digital Photography: A Question of Ethics" Leading and Learning with Technology Jan 1996. Vol 23 # 5
The author discusses computer-edited photographs and the importance of helping students become aware of the uses and abuses of photo manipulation.

Nickel, Joe. *Camera Clues*. Kentucky: University Press, 1994.
This book traces the evolution of photography and its use in investigative work. Techniques for questioning and providing proof to validate photos are discussed.

Internet Resources

Center for Media Literacy <http://www.medialit.org/>
The Center for Media Literacy provides a wide selection of teaching to help students develop critical thinking and media production skills needed to live fully in the 21st century media culture. The ultimate goal is to make wise choices possible.

Farid, Hany. "Photo Tampering through History".
<http://www.cs.dartmouth.edu/farid/research/digitaltampering>
This article gives many examples of tampering with photos of historical figures as well as celebrities. Not all are appropriate elementary students, but there are many to choose from to get the point across.

Lodriguss, Jerry. "The Ethics of Digital Manipulation" *in Catching the Light*. Accessed at <http://www.astropix.com/INDEX.HTM>
The author discusses enhancement vs. manipulation of photographs, a good discussion of intent and purpose.

Steinman, Ron. Digital Forensics: An Interview with Dr. Hany Farid, 2008.
<http://www.digitaljournalist.org/issue0802/digital-forensics-an-interview-with-dr-hany-farid.html>
Dr Farid explains the importance of detecting digital manipulation especially in cases of introducing evidence in a court of law.

Tapscott, Don. Growing Up Digital: The Rise of the Net Generation. New York: McGraw Hill, 1998.
A good read to help all teachers and administrators understand the capabilities and experiences of today's "digital: kids."

Student Bibliography

Print Resources

Bidner, Jenni. *The Kids Guide to Digital Photography.* New York: Lark Books, 2004.
This book serves as a reference for using digital cameras in classroom. It introduces students to the professional language of digital photography. The author provides many tips for artistic and technical techniques.

Frieddman, Debra. *Picture This*. New York: Kids Can Press, 2003
The author provides an attractive format for proving brief explanations of camera basics and related activities.

Haskins, Jim*. The Picture-Takin' Man.* New Jersey: African World Press Inc., 1991.
This is a biography of the black photographer, James Van Derzee, who is famous for his prints of Harlem.

Internet and Media Resources

Fountain, Henry. "Raising Shutterbugs in a Megapixel Age."
<http://www.nytimes.com/learning/teachers/featured_articles/20020523thursday.html>
This article offers pros and cons of using digital cameras.

Hafner, Katie. "The Camera Never Lies, but the Software Can"
<www.nytimes.com/2004/03/11/technology/the-camera-never-lies-but-the- software-can.html>
This article discusses the technique and intent of the photographer in manipulating images. It is written for students

 Kugel, Seth. "Point and Shoot for Bonus Points."
<http://www.nytimes.com/learning/teachers/featured_articles/20070308thursday.html>
This article helps students catch a glimpse of things they might see in a busy city like New York City and challenges them to go on a digital scavenger hunt. It can be adapted for an activity in other cities.

Paul McGann Florence Hoath, Elizabeth Earl, and Harvey Keitel*. Fairy Tale: A True Story*, (DVD - 2003) available at Amazon.
The story is very loosely based on an early controversy involving the real Frances and Elsie who faked pictures of fairies in the garden. The real girls never confessed, but the video suggests the way the way that the photos may have been produced.

Appendices/Standards

Pennsylvania Academic Standards for Reading, Writing, Speaking, and Listening

Students will have opportunities to read and understand essential content of informational texts and documents; use, understand and evaluate a variety of media; and use spoken, written, and visual language to accomplish their own purposes

• 1.1 Learning to Read Independently (A, B)
• 1.2 Reading Critically in all Content Areas (A, B, C)
• 1.4 Types of Writing (A, B, C)
• 1.6 Speaking and Listening (A, D, E)
• 1.8 Research (A, B)

Pennsylvania Academic Standards for Science and Technology

Students will use a variety of technological and information resources to gather and synthesize information, and to create and communicate knowledge

• 3.6 Technology Education (B)
• 3.7 Technological Devices (C, D, E)
• 3.8 Science, Technology and Human Endeavors (A, C)

Pennsylvania Academic Standards for History

The following academic standards will be addressed as students practice historical analysis and develop skills to and develop skills for critical thinking about media and messages.

• 8.1.6 Understand chronological thinking: Use of Time Lines (A)
• 8.1.6 Historical Interpretations: Illustrations in historical stories (C)
• 8.1.6 Explain and analyze historical sources: Visual Evidence (B)
• 8.1.6 Using Primary Sources (D)

Endnotes

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[ii] Urton, Robin. "A Brief History of Photography." Accessed on 5/5/09 at http://www.eyeconart.net/history/photography.htm.
[iii] Nickell, p. 202
[iv] Urton. Accessed on 5/5/09 at <http://www.eyeconart.net/history/photography.htm>

[v] National Geographic. "History of Photography." Accessed on 5/5/09 at
<http://photography.nationalgeographic.com/photography/photographers/photography-timeline.html> #2 of 26

[vi] "An Amazing History of Photography." Accessed on 5/5.09 at
<http://historyforkids.utah.gov/fun_and_games/photos/history.html>

[vii] Urton.

[viii] Rosenberg, Jennifer. "Brownie Camera." Accessed on 5/5/09 at
<http://history1900s.about.com/od/1900s/p/brownie.htm>

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at <http://www.olinda.com/Art/Documentary/documentary_photography.htm>

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[xii] Ray. F. (Oct 1961). "The Case of the Rearranged Corpse." Civil War Times. 3(6): 19.

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<http://www.astropix.com/HTML/J_DIGIT/ETHICS.HTM>

[xv] Lodriguss

[xvi] Arthur Conan Doyle, The Coming of the Fairies (New York: Samuel Weiser, 1921.

[xvii] Nickell, 175-176

[xviii] Sakulich, Aaron. "The Cottingley Fairies Hoax." Accessed on 5/5/09 at
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exposed as fake" Accessed on 5/5/08 at
<http://www.timesonline.co.uk/tol/news/world/asia/china/article4237441.ece>

[xx] Johnson, Mike. "Comparisons and the Odious: Fakery, Actual and Conceptual."
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<http://graphicssoft.about.com/od/digitalphotoethics/The_Ethics_of_Digital_Photo_Manipulation>

[xxii] Farid, Harry. *Scientific American* (6/08). "Digital Forensics: How Experts Uncover
Doctored Images" Accessed on 5/5/09 at <http://www.sciam.com/article.cfm?id=digital-image-forensics&page=3>

[xxiii] Farid, Harry. *Scientific American* (6/08). "Digital Forensics: How Experts Uncover
Doctored Images"

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[xxvi] Tapscott, p 75

[xxvii] Hafner, Katie. The Camera Never Lies but the Software Does." Accessed on 6-7-09 at <www.nytimes.com/2004/03/11/technology/the-camera-never-lies-but-the- software-can.html>

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