



Ansel Adams: Masterworks

April 17—June 14, 2009

The Sonoma County Museum



Educator Guide

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Mount Williamson, The Sierra Nevada, from Manzanar, California
1945

Ansel Adams

Musician, teacher, scientist, advocate, conservationist – these are some of the terms that describe the most renowned photographer in American history – Ansel Adams. Born the only child on February 20, 1902 to an upper-class family in San Francisco, Ansel was an unusually curious and precocious child with a decided aversion to school. His father, Charles Adams, inherited a lumber business but was never very successful with it. He was admired by Ansel, however, and was a dedicated father who was intimately involved in Ansel's education. Trained by private tutors after the age of 12, he began preparing for a career as a concert pianist. At the age of 14 he was simultaneously introduced to the expanse of California's Yosemite Valley and a No. 1 Brownie Box **camera** while on a family vacation. These two seemingly small events strongly influenced the course of Adams's life. His enthusiasm for both photography and the California wilderness grew, challenging his commitment to a career in music. For four years, Adams worked with a photofinisher in commercial processing in San Francisco during the winter and returned to Yosemite every summer.

The Kodak Brownie camera, created in 1900, was a very important camera in the history of photography. It was the first camera that could be used by anyone. For the first time, it was easy to take pictures. Kodak's slogan for the Brownie was, "You press the button, we do the rest." The camera cost just one dollar and the **film** sold for 15 cents a roll. As a result, the Brownie camera became popular very quickly and people began to take the camera with them on their travels and vacations. This development changed the American culture and the work of many photographers.

In 1915, Charles Adams gave his son a year-long pass to the Panama Pacific Exposition as part of his homeschool education. This exposition was an **exhibit** celebrating the completion of the Panama Canal and featured contemporary paintings and sculpture by artists such as Monet, Cezanne, and Van Gogh. Ansel loved it and went every day.

Adams had a series of jobs throughout his career, beginning with his job at age seventeen as the custodian of the Sierra Club's LeConte Memorial Building in Yosemite. He eventually worked his way up to tour guide through Yosemite National Park. It was during 1916, at the age of 14, that he began taking black and white photographs of the park. It was also during this time that he met his future wife, Virginia Best.

Ansel Adams's enthusiasm for the arts increased over time. In 1925, Adams decided he wanted to become a pianist and bought a grand piano. However, in early adulthood, Adams was faced with the difficult choice of developing his great talent as a pianist or plunging into the relatively untried world of working as an artist in photography. To the world's great benefit, he chose photography.

Although many people appreciated Adams's photography early on, it was not until much later that he focused entirely on his artistic photography. For the first 30 years of his career, Ansel Adams had to work as a commercial photographer to support his wife and two children. He was always very clear about separating his commercial photography from his artistic work.

With Edward Weston, Imogen Cunningham, Sonya Noskowiak, Henry Swift, and John Paul Edwards, Adams founded Group *f/64* in 1932, which was dedicated to straight photography as an art form. The name of the group is derived from the very small aperture used to increase sharpness and depth of field. Photography at the time was dominated by the “pictorialists” who created staged, artificial (and now largely forgotten) photographs that imitated the conventions of painting. Adams was instrumental in the struggle to gain for photography recognition as art on its own merits.

By 1935, Adams published his first book, *Making a Photograph*, which was enthusiastically received. Six years later, his groundbreaking **Zone System** was formulated, which introduced a way for the amateur and professional alike to determine and control the exposure and development of prints for maximum visual acuity.

Then, on March 28, 1933, Adams met Alfred Stieglitz, a very famous and influential photographer, modern art promoter and gallery owner who was instrumental over his fifty-year career in making photography an accepted art form. Early in Adams’s career, in November, 1936, Stieglitz awarded him his first solo show after which his artistic photography became recognized by the art community, enabling him to spend more time dedicated to it. Adams was forever grateful to the man who gave him the show he most valued in his lifetime. It eventually allowed him to support his family without returning to commercial photography.

Adams was not only good at taking pictures, his technical ability in the **darkroom** remains unsurpassed. Today, many people let machines develop film, but Adams did all the **developing** himself. Adams is known for his discriminating taste and meticulously produced prints which continue to amaze those who see his original work. When he decided to make photography his career, he bought a large 8x10 inch camera and made **negatives** on plates of glass instead of film. Adams had so much heavy equipment that he had to use a donkey to help him carry his things when taking pictures of Yosemite Valley in the early 1920’s.

At this time in his life, Adams was asked by the Sierra Club to join their board of trustees, on which he served for 37 years. He was asked to meet with lawmakers to appeal to them on behalf of the Sierra Club and the environment. He published *Sierra Nevada: The John Muir Trail* in an effort to depict the park’s natural beauty and help preserve the land. The book was sent to Harold Ickes, Secretary of the Interior, who passed it on to President Franklin D. Roosevelt. Roosevelt enjoyed the book so much that it was added to the White House collection. Thus, it had the influence it was meant to, and in 1940, the Kings River National Park Bill was passed.

Although Adams is better known for his landscape photography, he also photographed other subjects that interested him. In 1943, Adams visited an internment camp where Americans were being held as prisoners because they looked Japanese. Adams was outraged by the denial of their rights as Americans without fair trial. He took a series of photographs of the camp and exhibited this body of work at the Museum of Modern Art in New York. These photographs were published in his book *Born Free and Equal* in 1944. After reviewing the exhibit and reading his book, many accused Adams of being a disloyal American.

Adams fought throughout his life for the causes that were important to him. He met with Presidents Johnson, Ford, and Carter, each time appealing to them on **conservation** issues. In 1980, President Carter

gave Adams the Presidential Medal of Freedom, the nation's highest civilian honor. Today, Adams is the only photographer in history to have received such an award.

Adams's sense of social responsibility and obligation to share knowledge with succeeding generations is evident in his life's work. Over the years, he became well known for the clarity of his instruction and his hands-on workshop approach to the medium. He influenced generations of photographers through his teaching and publishing. Adams served the field of photography in many capacities: for example, he was a guest lecturer and course instructor at the Museum of Modern Art, New York, and founder of the first department of photography at the California School of Fine Arts in San Francisco. He was instrumental in the formation of the museum and research center at the University of Arizona in Tucson, known today as the Center for Creative Photography. Adams's dream was to ensure the preservation and conservation of photographs as well as to make them available for public education purposes. Today, the Ansel Adams Archive at the Center includes his fine prints, correspondence, negatives, study prints, and memorabilia.

In the course of his long life, Ansel Adams would produce eight portfolios and have work in more than 500 exhibitions. A prolific writer, he published thirty-seven books and hundreds of articles about photography. He organized the Friends of Photography, a non-profit organization dedicated to the study and promotion of art photography. He received many national and international awards, honorary degrees, three Guggenheim Fellowships, and had a wilderness area and a mountain named after him.

On April 22, 1984, Ansel Adams passed away in Carmel, California at the age of 82 from heart failure aggravated by cancer. He was survived by his wife, Virginia, his children Michael (b.1933) and Anne (b.1935), and five grandchildren. To honor his great service to our nation's wildlife, Congress passed legislation six months later designating more than 200,000 acres near Yosemite as the Ansel Adams Wilderness Area. A year later, an 11,760-foot mountain on the boundary of Yosemite National Park was named Mt. Ansel Adams. In the same year, as a testament to his public popularity, his autobiography appeared on best-seller lists across the United States. Ansel Adams's view of America, produced in over half a century of imagery, invites us to reexamine our visible world from the most intimate details in nature to the broadest of landscapes.

The View Camera

The view camera is a large-format camera used by photographers who want to control every step of taking a photograph. Controlling tonal range may be crucial, they may need large negatives to create prints that clearly show even the tiniest detail, or they may want to decide exactly which parts of the picture are in focus. The photographer who uses a view camera devotes a lot of time to taking each photograph. Think about how this is different from using a camera with automatic focus and automatic exposure.

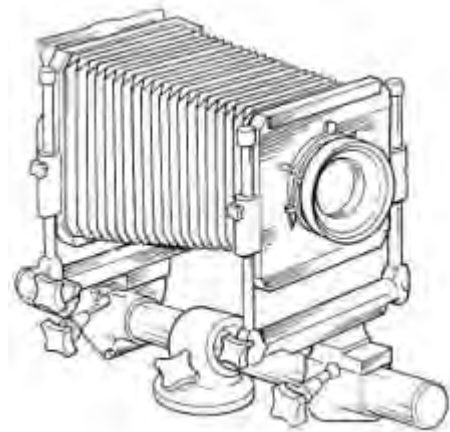
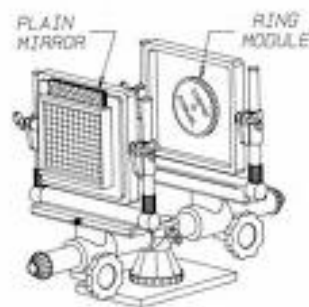
Using a View Camera

The photographer using a view camera has to handle the film in total darkness. To load the film, the photographer sits in the dark with a stack of film holders and a stack of sheets of film [dark bags with baffles can be used in emergencies]. He or she picks up each sheet of film by its edges, feels the notches that indicate position, inserts the film in the holder, and slides a light-tight cover over the film. After the photograph has been taken, the steps are followed in reverse, again in total darkness, until the exposed film is safe inside a light-tight box or developing tank. In contrast, the film for an automatic camera is already loaded inside a dark cartridge, which can be put in the camera in daylight. A view camera is not only large in format, it is also heavy. The 8x10-inch camera with lens and tripod, usually carried over the photographer's shoulder, weighs about thirty pounds. The pack with extra film holders and lenses weighs about the same. Photographers – from those small in physical stature such as Edward Weston to Ansel Adams, who was a large man – carry this weight into the field because they want to make photographs that can only be made with a view camera. Every step of taking a picture with a view camera requires the photographer's time and concentration. If he or she is focusing, both the position of the lens and the film holder can be adjusted. Each exposure requires a separate light-meter reading and separate setting for the aperture size and the amount of time the film is exposed to the light. The extra control means the photographer has to think about every procedure. Nothing is automatic about it.

Some Famous Artists Who Used View Cameras

Ansel Adams, master of the view camera, is revered for the exceptional print quality of his photographs. Using a view camera allowed him to control several aspects of photographing, each one of which contributes to this print quality. For instance, because he was exposing only one sheet of film at a time, he could use the Zone System to previsualize each photograph and to both take the picture and develop the negative specifically for the way he wanted that image to look. Using the Zone System also allowed Adams to achieve a wide tonal range; very few photographers match the density range – from the whitest white to the darkest black – found in Adams's photographs. As a young man, Adams and several other artists who used view cameras – like Edward Weston, Imogen Cunningham, and Willard VanDyke – formed Group *f/64* to declare their dedication to photographic seeing; several of these artists went on to become the most celebrated American photographers of the twentieth century. The group adopted its name from the aperture *f/64*, which is a very small focal setting available on most view camera lenses.* Using it requires a long exposure and a still subject. If the photographer has perfectly aligned the plane of the lens and the plane of the film holder and focused the image, this long, slow exposure can yield a photograph that has maximum depth of field: the image is in focus from the surface closest to the viewer to the areas as far away as the eye can see. The ability to focus carefully with a view camera was important to artists like Adams and Weston. They wanted to assure that their principal subject was in sharp focus. This kind of clarity, this sharpness of focus, is most easily seen along the edges of objects. The view camera has a large focusing screen, a ground glass that is slightly

larger than the film. In order to see clearly, the photographer has to go back into darkness again. A large dark cloth is slung over the photographer's head and the back of the camera creating a dark space where the subject is seen upside down, glowing brightly, allowing the photographer to focus precisely. The control that the view camera offers attracts artists who have the patience and concentration to use it. Ansel Adams, who knew the places he photographed very well, often set up his camera and waited for the light to fall the way he envisioned or for a storm to move through Yosemite Valley just as he expected. Adams also knew his camera equally well. His most famous photograph, *Moonrise, Hernandez, New Mexico*, 1941, was taken in the heat of the moment. Imagine Adams driving his car, seeing the picture, and pulling to the side of the highway. Deftly setting up his tripod and camera, he then focused quickly under a dark cloth, prepared his lens and shutter settings, and took the picture in the fading light at the moment the sun was setting and lighting a row of adobe houses and a cemetery in the foreground.



Most parts of the view camera can be seen and manipulated.

The Parts of a View Camera and How It Is Used

A view camera might best be described as a large box with a lens on one end, a place for a film holder on the other end, and a long, accordion-like bellows in between that can be collapsed or expanded to bring the subject into focus. The closer the photographer gets to a small object, the longer the bellows must be extended in order to focus. The view camera gives the photographer great control because both the front standard, which supports the lens, and the rear standard, which supports the film, are moveable and can be adjusted to bring the foreground and background of the subject into sharp focus. These movements can also be used to correct distortion or to distort the subject intentionally.

Using the Negative in the Darkroom

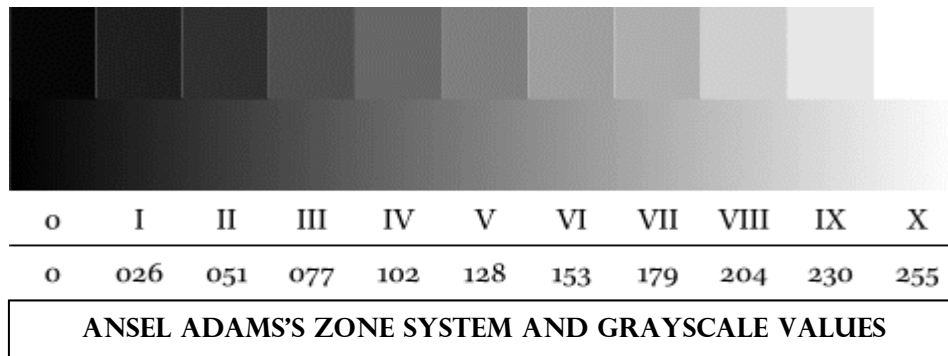
View cameras require sheet film, as opposed to roll film. The 4x5-, 5x7-, or 8x10-inch film used in such a camera becomes the negative after the exposed film is developed. The negative is used to create a positive print by passing light through the negative onto photographic paper, which has been coated with a chemical solution containing light-sensitive metallic salts. For most black-and-white photographs, the

light-sensitive material is silver. The closer the negative is to the photographic paper, the smaller the enlargement and the greater the resolution, or fineness of detail, in the finished print. In fact, the best resolution achieved through any negative is in a contact print, when the negative is in direct contact with the photographic paper. Such prints are noted for their sharpness, clarity, minute detail, and lack of grain. To enlarge an image beyond the negative size, light passing through the negative must first go through a lens and be projected onto the photographic paper from a distance away. The larger the negative, the less distance is needed to make a particular image size. Imagine an artist using 35mm roll film. Since the film is only 1/62th of the size of an 8x10-inch sheet of film, the 35mm negative would have to be much farther from the paper to project the same size image and, consequently, some resolution would be lost. At the same time, a contact print made from a 35mm negative is too small to have any significant visual impact. There are, of course, artists who work in the 35mm film format; but their artistic concerns are different from those of artists who choose to use a view camera. In addition, sheet film can be processed in the darkroom one sheet at a time, if desired, allowing for precise use of the Zone System. If the Zone System is used with roll film, one set of calculations must apply to the entire roll, which would dictate that a whole roll be used for subject matter photographed under identical lighting conditions with the same type of previsualized image in mind.

**The photographers in Group f/64 did not use view cameras exclusively. For instance, several of the photographs in the Center for Creative Photography's exhibition Intimate Nature: Ansel Adams and the Close View were taken with a Hasselblad, a medium-format camera that uses 120mm roll film and is known for its high quality lenses (the individual negatives are 2 1/4 x 2 1/4 inches). Edward Weston used a Graflex, a medium-format camera often used by photojournalists, to take his famous series of nudes of dancer Bertha Wardell.*

The Zone System

Creating a fine print is a process with many steps. The first is producing the best possible negative to print the photograph as the photographer previsualized it. Once mastered, the Zone System allows photographers to consistently control the tonal range in the negative. Formulated by Ansel Adams and Fred Archer in 1939/1940, the Zone System is a set of techniques that allows photographers the greatest possible control over the characteristics of black-and-white film. The system works best with sheet film which can be exposed and developed one piece at a time. This film becomes the negative used in printing the photograph.



Using the Zone System

- Previsualize the subject scene in shades of black and white [using the Zone-Scale Card shown above]
- Take a light meter reading of target zones using a hand-held light meter, and sometimes a gray card as well
- Decide if adjustments need to be made in the exposure to effectively record the amount of light on the film
- Determine if the contrast, or range of values from black to white, will need to be adjusted by varying the development time of the film. A shorter than normal development time decreases contrast; a longer than normal time increases it.
- Analyze the print during the printing process to determine if the tones of the photographic image are aesthetically pleasing as they were previsualized.

Vocabulary

Camera – a device for taking photographs by letting light from an image fall briefly onto sensitized film usually by means of a lens and shutter mechanism.

Community – a group of people who live in the same area, or the area in which they live: a group of people with a common background or with shared interests within society: the public or society in general.

Conservation – the preservation, management, and care of natural and cultural resources.

Darkroom – a room from which natural light is excluded so that light-sensitive photographic materials can be safely handled and photographs can be developed.

Development– a chemical process, carried out in the dark, which makes the image exposed on the film visible and permanent in negative form.

Environment – the surroundings in which a person, animal or plant lives. This word is often connected to the natural surroundings.

Exhibit – to show something off for others to look at or admire.

Exposure – the amount of light that falls on the film (which will become the photographic negative). This is regulated by controlling the size of the aperture through which light enters the camera and/or the length of the exposure.

Film – a thin, translucent strip or sheet of cellulose coated with an emulsion sensitive to light, used in a camera to take still or moving pictures.

Gray Card - a standardized card, used for measuring light, which corresponds to Zone V, or mid-tone gray.

Hand-Held Light Meter - a light-measuring device that is separate from the camera. A spot meter, which covers a one degree angle, is ideal for measuring target zones.

National Park - an area of special scenic, historical or scientific importance set aside and maintained by a national government and in the United States by an act of Congress.

Negatives - photographic film that has been exposed to light, used as a basis for preparing final prints. Black and white tones are reversed and colors are complementary.

Photography - the process of recording images by exposing light-sensitive film to light or other forms of radiation; the art, hobby or profession of taking photographs, developing and printing the film or processing the digitized image.

Preservation and/or Conservation - the management, protection and care of natural and cultural or historic resources which usually are seen to be at risk, or in danger of deterioration, injury, or abuse.

Previsualization - a mental exercise in which the photographer imagines the subject in terms of the black, white, and grays desired in the final photographic print.

Spot Meter - a type of hand-held meter that allows the photographer to easily measure light falling on very small areas within the subject matter.

Vintage Silver Gelatin Print - a photograph printed by the artist during his lifetime using the photographic process with black-and-white films and printing papers. A suspension of silver salts in gelatin is coated onto acetate film or fiber-based or resin-coated paper and allowed to dry.

Zones - a specific set of tonal values consisting of pure black, the base white of the black-and-white photographic paper, and eight or nine shades of gray in between [see Zone Scale Card]. When the Zone System is used, the darkest areas of a photographic image are referred to as low values (Zones I-III), the gray areas are called middle values (Zones IV-VI), and the light areas are high values (Zones VII-IX). The zones are always referred to by roman numerals.

Lesson Plans & Activities

Following is a list of questions often used by Museum docents. We often use these questions as a starting point for discussion and interaction about the art in our galleries. The questions do change slightly varying on the type of exhibition.

- What do you see?
- What is this?
- What attracted you to this particular artwork?
- How do you think it was made?
- What makes this art?
- What do you feel when you view it?
- What do you think is happening in this artwork?
- What does this artwork remind you of?
- How long do you think it took to create this?
- What processes do you think were involved?
- What do you think of it?
- What do you think it means?
- Do you like it? Why? Why not?
- How does the work relate to its title?
- If you could rename it, what would you call it?
- What are the larger issues or themes being represented here?
- What do you think the artist is trying to do, show, or say by creating this?
- What makes you think that?
- How does your understanding of or feeling about this artwork change if you move to another part of the room?
- How have your feelings about this changed now that you have a better understanding?

Curricular Connections

Social Studies, History, Geography

- ❖ Have students map locations of the sites where Ansel Adams took his most famous photographs.
- ❖ Have students create a visual timeline of Ansel Adams's work. From the internet, they can print pictures, Medals of Honor, Ansel Adams at any given time in his life, his family members, or his photographs.
- ❖ Study National Parks, Theodore Roosevelt, the Sierra Club and the Progressive Era.
- ❖ Study Manifest Destiny and the idea of the Western Frontier – how Ansel Adams's photography documented the West.
- ❖ Discuss Japanese internment and relocation camps in the context of World War II. Ansel Adams focused on the Manzanar Relocation Camp in the Owens Valley of eastern California. Why did this occur? What were the locations of Camps? How do you think you would have

felt? A lesson plan is available further on in this guide which encourages students to explore activism.

- ❖ Discuss the role of Ansel Adams as an environmentalist. Talk about how his images are a record of what the landscape was like before human intervention, travel and industry. Explain how Adams, through his photography and passion for conservation, brought environmental issues to the surface for the American public. Inform students of Adams's activism with the Sierra Club, America's oldest, largest and one of the most influential grassroots environmental organizations. Adams began working with the Sierra Club in 1919 as a custodian and later moved on to the position of club photographer. As his success as a photographer grew, so did his role in the club. Adams was active in suggesting proposals to improve the parks and wilderness of the United States. He later served as a member of the board of directors for 37 years.
- ❖ After viewing the film about Ansel Adams, have students research other Americans whose work promoted natural conservation: John James Audubon, Rachel Carson, John Muir, Gifford Pinchot and Theodore Roosevelt. Have students write one question (on a single index card) based on the life of each of these persons (including Ansel Adams); for example, which of these persons lost his or her job in a bitter public dispute over use of lands in Alaska? (Gifford Pinchot). Encourage students not to make their questions too obvious or too obscure. Have students hand in their questions. Use the questions for a quiz game by reading the questions aloud. The first person (or team) to correctly answer each question earns one point.
- ❖ Discuss Ansel Adams's documentation of the American West with students. In a way, his photography has preserved the natural environment as it was in the early twentieth century. Have students brainstorm and discuss what they would photograph for future generations. What do they think might not last? What do they enjoy that might not be recognized as beautiful by everyone? Have student use disposable cameras or a digital camera to create a mini collection of images that preserves their ideas and experiences for future generations. Afterwards, have students share their collections with the class. How are these projects similar to or different from Ansel Adams's work? Have the students compare their motivations.

Reading, Writing, Public Speaking

- Ansel Adams was a passionate environmentalist who believed in the importance of preservation. Have students research his beliefs and involvement with the Sierra Club. Have students write a report or create a Power Point presentation to present their findings.
- Poetry is a term that is used in many ways. Show students an image of Ansel Adams's photographs and ask them to tell you how this image could be interpreted as poetry. Pass out images or books of Ansel Adams's photographs. Ask students to select a photograph by Ansel Adams and write a poem inspired by his photograph. Encourage students to explore a specific type of poem: <http://www.kathimitchell.com/poemtypes.html>. Have students share their poetry with the class.
- Especially in recent decades, numerous public debates have occurred over development projects that aim to promote economic growth but that critics charge will harm the environment. Examples include the Alaskan oil pipeline, logging and farming in the Amazon rain forest, the Three Gorges Dam on China's Yangtze River, the proposed oil drilling in the Arctic National Wildlife Refuge and the proposed nuclear waste storage site in Yucca Mountain, Nevada. As

partners, have students choose one such debate – either an ongoing debate or one from the past. Conduct brief in-class debates. In each group, have one partner take one side of the issue and the other take the opposite side. Students should use visuals if necessary to make their arguments. After arguments are presented on both sides, have both students briefly describe the debate’s historic outcome (if the issue has been decided). After all the groups have made their presentations, hold a class discussion about what issues and arguments appeared most often in these debates.

Math and Science

- Use Ansel Adams’s photographs to discuss the math behind creating perspective and scale. While photography seems to reflect reality directly, often images appear even more vivid than reality itself. Can students point out examples in Adams’s photographs of this “super real” effect? What makes it appear that way?
- Have students explore the physics and chemistry of the camera and photography. See the lesson plan further on in this guide under “Science”. Have students experiment and discuss why the image is upside down and how they think they could improve image quality.
- Help students learn about using a camera and understanding f-stops, shutter speeds and the use of light specifically as they affect the depth of field, contrast and tonal values in black and white photographs. Through black and white photographs, explore the similarities and differences between the human eye and the aperture and shutter of a camera. How does the brain receive images from the eye? How does a camera capture an image?
- Assign this take-home experiment. Before sending the project home, have students imagine they are filling a glass with water. If the faucet is open all the way, would it take a longer or shorter time to fill the glass half-way than if the faucet were only letting out a trickle of water? Have students imagine that a water faucet represents the aperture of a camera and the water is the light. Students should attempt to fill a receptacle to the half-way mark in a specific amount of time. Have students observe and record their findings about the relationship between aperture and shutter speed. See the lesson plan under “Math” further on in this guide.
- Have students study the properties of light and how we use these properties in our lives. Imagine reaching for something that is visible in front of you and not finding it there or shining a flashlight in the darkness and having it illuminate only something in back of you. This, of course, is not likely to happen, since light mostly travels in straight lines. It is true that a beam of light can “bend” under certain conditions, such as when going from air into water or glass and the reverse. Scientists now know that light passing through space is attracted and curved by the gravitational fields of massive objects in space. Other than these exceptions, though, light does appear to travel in straight lines.
- Ansel Adams’s photographs document the environment as it was. Take this opportunity to discuss how the environment has changed over time. Can the students point to an instance in their own communities where the environment has changed? How did it change? Why did it change? Was this a positive or a negative change?

Lesson Plans

VISUAL ART

Values and Composition

See *Frozen Lake and Cliffs*, *Mount Williamson*, *Sand Dunes*, and *Rose and Driftwood*.

- A. INTRODUCTION** – Ansel Adams was influenced as a young boy by an exhibit of paintings of modern art from Europe. Adams and avant garde artists and photographers in America such as Paul Strand, Alfred Stieglitz, Georgia O’Keeffe and Edward Weston, applied new formal ideas that made the subject less important than the treatment using elements of art.

Tones: Ansel Adams devised a system of 11 tones from pure white to black that he sought in his photographs. We’re going to learn how the inclusion of many grays or “values” makes a photograph or drawing or painting more visually interesting.

Elements of Art:

- Line
- Depth
- Shape
- Pattern and Repetition
- Texture
- Composition – Rule of Thirds
- Color (value)

B. STUDENT WARM UP EXERCISE

- Shapes: Draw the basic ones
- Line: Draw vertical, horizontal, diagonal, curved, zig-zag
- Depth: Draw 2 apples sitting side by side on a table.
- Now draw 2 apples, one in front of the other.
- Value or tone: Make a rectangle divided into 11 boxes. Fill in the boxes with 11 different tones; the first is blank (white) and the last is as black as you can make it.

C. TEACHER DEMONSTRATION

- Look through a frame to find the most interesting part.
- Students look through their own frames.
- How to draw a still life – what to look for: shapes, lines, depth.
- Negative spaces – shapes in between shapes.
- Value or tones
- Texture, pattern, repetition

D. STUDENTS DO A DRAWING

- Work for ½ hour

E. CLOSING

- Students post work and look at work to see how many values and elements of art they included. Clean up.

PHOTOGRAPHY & HISTORY

The Photo Essay

See *Trailer Camp Children* and *Mt. Williamson from Manzanar*

The Manzanar Relocation Camp

Ansel Adams made several trips from Yosemite to the Manzanar Relocation Camp in the Owens Valley of eastern California to photograph Japanese-Americans who were interred during World War II.

“The infamous decision of the government (in the time of fear and hysteria following Pearl Harbor) to transport American citizens of Japanese ancestry to several detention camps resulted in most severe hardship among the Japanese American population of the West Coast.”

Ansel Adams compares his approach in photographing the situation to that of Dorothea Lange. Dorothea Lange “photographed the misery and bewilderment of the Japanese-Americans”, whereas his own photographs “were an attempt to record the accomplishment of the people in rising above their desolate situation.”

Lange photographed Japanese Americans “as they were taken to the tarpaper shacks in the desert. Her photographs are shocking, moving documents of a terrible time for those people.” Her photographs have “priceless photographic value.”

Ansel Adams arrived at Manzanar several years later, “when the relocation camps had been made more livable and functional by the efforts of the inhabitants themselves.” He observed their accomplishments in the building of a Japanese garden, farms, schools, churches (Buddhist, Christian, and Shinto), a playground, and small industries. They made the most of the situation and relieved monotony by setting up cultural studies and events. His photographs were published in *Born Free and Equal*, along with text he composed. Believing that art must always be positive, he showed the people’s courage rather than despair. It was in his text that Ansel was scathingly critical of the detention.

ACTIVITY

Choose a current issue or situation you feel strongly about. Put together a series of original photographs, drawings or reproductions with or without words to express your views on the subject.

LANGUAGE ARTS

Focus on descriptive detail

See *Rose and Driftwood*.

Adams was not only a master photographer and an accomplished musician, he was an excellent writer as well. A creative person often is interested and accomplished in many areas, not confined within narrow limits. Adams was raised on the ideas of Ralph Waldo Emerson. He enjoyed poetry, particularly of Whitman and followers like Edward Carpenter, as quoted in Adams's *Autobiography* from "After Civilization":

*In the first soft winds of spring, while snow yet lay on the ground –
Forth from the city into the great woods wandering,
Into the great silent white woods where they waited in their beauty and majesty
For man their companion to come...*

Adams may be most well-known for his long-distance shots, but he was also fascinated with turning his camera to the details in nature. The creative photographers of the early twentieth century were known for close-up shots and Adams followed suit. He wrote poetically in his autobiography, "One can never assert the superiority...of torrents swollen by the floods of spring against the quiescent scintillations of an autumn stream."

Walt Whitman

Adams quoted an American poet who shared his view:

*"These with the rest, one and all, are to me miracles,
The whole referring, yet each distant and in its place."*

From "Miracles", by Walt Whitman

ACTIVITY

Consider the photographs and the words of Ansel Adams, and the poetry of Walt Whitman and Carpenter in responding to the following:

Choose a small object or fragment and write a poem or description of it in as much close detail as possible.

- A. How does the history and scale of the United States affect our appreciation of nature, literature and art?
- B. How do nature, literature and art in turn affect our American identity?

GEOGRAPHY

National Parks and Other Sites, USA

See *Vernal Fall* and *Monolith*.

ACTIVITIES

1. The location where Ansel Adams took a large number of photographs included in *Masterworks* was in Yosemite National Park in California. Identify on a map Yosemite and the other locations where photographs were taken as listed below:
2. How many states are represented in this exhibit? How many states are not represented?

| | |
|----------------------|--|
| Alaska | Juneau Denali National Park |
| Arizona | Canyon de Chelly National Monument Grand Canyon National Park Monument Valley |
| California | Sequoia National Park San Francisco The Sierra Nevada Kings Canyon National Park San Mateo County Coast Bishop Sonoma County Pebble Beach Death Valley National Monument Independence Portola Valley Richmond Bodega Oceano Mono Lake Bull Creek Flat Yosemite National Park |
| Colorado | Dolores River Canyon |
| Hawaii | Maui |
| Massachusetts | Cape Cod |
| New Mexico | Taos Chama Valley Chimayo Hernandez White Sands Penasco Coyote |
| New York | New York City |
| Tennessee | Great Smoky Mountains National Park |
| Texas | Rio Grande, Big Bend National Park |
| Utah | Manti |
| Washington | Mount Ranier National Park |
| Wyoming | Grand Teton National Park Yellowstone National Park |

MUSIC

Listening and Connecting to the Visual Arts

See *Monolith*, *Mount Williamson*, and *Vernal Fall*.

Music and its Relation to Other Art Forms

Friends said they could hear Ansel's zone system of tones in his music. He likened the negative to a composer's score, and the photographic print was like a performance with a variety of interpretations, without departing from the major concept.

ACTIVITIES

Look and Listen #1

Choose an Ansel Adams photograph and ask students what feeling it inspires. Ask the students to suggest songs or musical compositions that inspire similar feelings. Listen to songs, such as those listed, and determine if the mood of the image and songs are similar. Why or why not?

America

Copland – Appalachian Spring

She'll Be Coming 'Round the Mountain

Look and Listen #2

Ansel Adams was an accomplished musician, with a career as a pianist before he became a professional photographer. He credited the study of music with his development of self-discipline and the pursuit of precision. The pianist Ashkenazy played at his 80th birthday party. Adams learned to play Handel, Bach and Mozart. Some of his favorite pieces are Beethoven's 4th Symphony and Moonlight Sonata.

Listen to some of the music Ansel Adams most enjoyed, or other classical selection, and determine if the music is in the same spirit as his photographs.

HISTORY

20th Century America

See *Trailer Camp Children*.

Adams said he was too young for World War I and too old for World War II. Yet he did live through historical events of the 20th century, such as the San Francisco Earthquake of 1906. He saw the environment transformed, which he had strong feelings about. (See *Vernal Fall*). He witnessed a huge change in technology. John Szarkowski, who began the Department of Photography at the Museum of Modern Art in New York City, wrote in *The Portfolios of Ansel Adams*, “When he began to take photographs in the late 1920’s, it was before the Model A had begun to replace the Model T. At that time, there were no superhighways, no motels, and no passenger airlines. San Francisco and New York were, by crack train, four splendid days apart.”

Adams was deeply impressed by the detention of Japanese-Americans at Manzanar in California during World War II (See [Photography and History Lesson Plan](#), and *Mount Williamson*). He was interrogated during the McCarthy Era of the 1940’s. Adams explains in his autobiography that during the Great Depression in the 1930’s, many American citizens turned toward leftist philosophy hoping for relief from the great hardships. Adams wrote that he and his friends “signed numerous petitions...In retrospect, many of these were undoubtedly Communist inspired.” The dreadful McCarthy period was the “first time I doubted the integrity of the American system”.

Adams wrote that he was at a party with Dr. Robert Oppenheimer, whose loyalty was questioned by McCarthy. The guest list had to be turned over to the F.B.I., who then interviewed party guests, including Adams, several times. In New York Adams had become a member of the Photo League which held lively discussions, lectures and exhibitions. The League had the philosophy that art should be used for social change. There were some members with ties to socialist and Communist groups. The League was placed on the Red List of the House Un-American Activities Committee. At a meeting of the League, Adams “rose to beg the League to renounce all ties to Communism”. When they did not agree, he resigned.

Adams wrote in his autobiography, “During the McCarthy era there was a sour taste of evil in the air, an unsettling distortion of our American principles of justice... Friend turned against friend, reputations were destroyed; the Gestapo spirit was alive in all levels of society. Artists, writers, philosophers and scientists were the prime targets”.

ACTIVITY

Think about the events you have lived through in your lifetime. How have you been affected by changes in technology and encroachments on the environment? Do you perceive any possible threats to your freedoms and right to expression?

MATH

Meters, f/stops and Focal lengths

See *Moonrise*, Hernandez.




Photography Exposure Experiment

A water faucet represents the aperture. Imagine you are filling a glass with water. If the faucet is open all the way, would it take a longer or shorter time to fill the glass half-way than if the faucet was only letting out a trickle of water?

Equipment:

- Water faucet or container such as a salt shaker with 2-3 sizes of opening.
- Timer
- Receptacle

Goal: To fill a receptacle to the halfway mark, which represents the correct amount of light needed for proper exposure. (Less would not be enough light – making the image too dark. Full would be too much light – making the image too light).

| Procedure: | Aperture | Shutter Speed |
|---|---|--|
|  | Using the small opening, start filling the receptacle and stop at halfway. | Time it. (Takes the longest time) |
|  | Using the middle size opening, start filling the container and stop at halfway. | Time it. |
|  | Using the large opening, start filling the container and stop at halfway. | Time it. (Takes the shortest time) |

Observation: To expose film to a determined amount of light, the smaller the opening (aperture) the slower the shutter speed. The larger the aperture, the faster the shutter speed.

Conclusion: Are aperture and shutter speed functions of each other?

SCIENCE

Physics and Chemistry

NOTE: The chemistry activity at the end of this section is teacher-led only.

Physics

How does the simplest camera work?

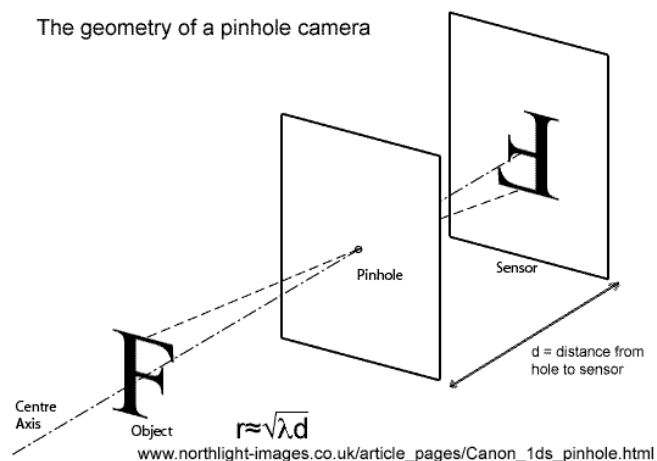
The word “camera” means room in Italian. It was in a dark room (*camera obscura*) in Italy many centuries ago that it was noticed that light from outside passing through a small hole exactly reproduced the scene outside on the opposite wall. It was astonishing, and also perplexing, because the image was upside down.

Why was the image upside down?

Light travels in straight lines. Light rays from the top part of the scene outdoors can only reach the bottom part of the receiving area (the opposite wall) through the tiny hole, and vice-versa. The image is dim and ill-defined because the light rays travelling from each point of the subject are slightly dispersed as they pass through the hole.

ACTIVITY

Find out how to make a pinhole camera in [My First Photography Book](#) by Dave King, New York: Dorling Kindersley, 1994; or go to the website www.pinholeday.org/support/ for many different options.



Using a pinhole camera to create an image

How can the image be made sharper?

To produce a brighter and sharper image than is possible from a simple pin hole, it is necessary to converge the light rays and focus the image. This requires a lens. Study a prism to see how light is *refracted* or bent when it passes through.

How is this knowledge used today?

The phenomenon of the *camera obscura* (dark room) was put to use to help Italian Renaissance and Dutch artists make very realistic, “photographic” images, and later led to the development of the modern camera.

Chemistry

How is chemistry used in photography today?

Today photographers use special paper that is coated with chemicals that are sensitive to light. In a dark room, they project light through a negative which is placed in an enlarger.

Can I make photographs without a negative and an enlarger?

Yes, but you still need a very dark room. A bathroom with a sink would work if you can use black paper or blankets covering the light. You can use a red darkroom light to help you see.

ACTIVITY FOR TEACHERS ONLY: To ensure your safety, before you do the following activity, go over the steps with the technicians at the photographic supply store. If you get any chemicals on your skin, wash immediately. If you get chemicals in your eye, rinse immediately and see a doctor.

(Teachers – please call for specific chemicals and times)

PHOTOGRAPHY WITHOUT A CAMERA OR FILM NEGATIVE

Set up the room beforehand. Gather all your materials: 3 trays, chemicals, measuring cups, thermometer, photographic paper, objects or shapes cut out of oak tag.

1. Prepare three trays with solutions that will process your image. You will have to follow the instructions on the packets regarding how much chemical to use. You will also need a sink with running water.
 - a. Developer
 - b. Water
 - c. Fixer
 - d. Sink or bathtub with running water

2. In a very dark room with only a special darkroom light, take one sheet of photographic paper out of the packet. Remember, if you expose the paper to light, you will ruin it! Place objects on the paper, such as scissors, string, flowers, or oak tag shapes. Expose to bright light for 10 seconds.

3. Put the paper into the developer with tongs so the paper is completely covered. Use tongs to immerse paper into the chemical – do not touch it with your fingers. Rock the developer gently over the paper. Wait for 2 minutes or until you see the image come up. This is the exciting part! You should see an image of a flower or of an object slowly appear, except it will be IN REVERSE (a negative).
Where the light was blocked, the paper will remain white. Where light struck it, it will be dark. The chemicals on the paper are sensitive to light and begin to change the tone of the paper.
4. Using a different set of tongs, put the paper into water for 30 seconds to rinse the developer off. Rock gently as before.
5. Then using a third set of tongs, slip the paper into the fixer for 2 minutes to preserve the image.
6. Wash the paper in the sink or bathtub with running water to remove excess fixer for 4 minutes.

Now you have the final image – a negative of the image you started with.

THE ABOVE ACTIVITY IS FOR TEACHERS ONLY!

FROZEN LAKE AND CLIFFS, THE SIERRA NEVADA, SEQUOIA NATIONAL PARK,
CALIFORNIA, 1932

- A. What do you observe?
- B. Does the scene strike you the same as it did Ansel Adams?
- C. How did Adams arrive at taking this photograph?
- D. How did the philosophy of Group f/64 affect his vision?
- E. What problems did he face in the years before he developed the Zone System?
- F. Technical Aspects

A. What do you observe?

This image is a striking organization of contrasting shapes, textures and values. The smooth reflecting water contrasts with the craggy cliff; the white floating ice and the black lake form a calm horizontal against the tense vertical of the abruptly rising gray rocks. The irregularly shaped mound of snow acts as a visual buffer. Adams used these elements of art – shape, texture, and value – to create a composition that, although of a recognizable subject, could be termed abstract.

B. Does the scene strike you the same as it did Ansel Adams?

Are the looming cliffs, extreme cold and isolation threatening? Or are other feelings aroused, such as wonder and curiosity? Does the photograph stir any association or memories? Adams said in *Examples*, “...I believe I was able to express in this photograph the monumental qualities of the subject that I responded to so intensely at first sight.” He asked himself the question, “Why do I see certain events in the world about me that others do not see?” There were several good photographers nearby, and “the scene was before us all, but no one else responded with creative interest...With all art expression, when something is seen, it is a vivid experience, sudden, compelling and inevitable.” The visualization is “called forth by some miracle of the mind-computer, “not consciously, but is “a summation of total experience and instinct.”

C. How did Adams arrive at taking this photograph?

On a hiking outing with the Sierra Club, in the most spectacular region of the Sierra, he came across this scene at what was later given the descriptive name of Precipice Lake, which lies at the base of Eagle Scout Peak. “The lake was partially frozen and snow banks rested in the recesses of the cliffs. I was impressed with the solemn beauty of the scene and saw the image quite clearly in my mind.”

D. How did the philosophy of Group f/64 affect his vision?

Adams joined with Edward Weston and other like-minded photographers who were disgusted with pictorialism, which they thought was soft-focused, romantic, sentimental and imitative of other media such as painting and drawing. They promoted “straight” or “pure” photography, which they defined in their manifesto as photography that did not derive from any other art form, but must “develop along lines defined by the actualities and limitations of the photographic medium...”

James Alinder, in *Ansel Adams – Classic Images*, wrote that for Adams, Group f/64 provided a unity of thought and style, and “proposed methods that would produce images with the most distinctively photographic characteristics.” They used large 8x10” negatives, lenses that gave extreme optical sharpness, and contact prints with a full tonal range. Adams’s work underwent change. Adams took the group’s convention of doing close-up views, and transferred it to landscape, his preferred subject, in *Frozen Lake and Cliffs*. Alinder observes, “Without a defining horizon, the frame filled with fragmented granite shapes takes on a new sense of abstraction.”

Did Adams himself see this photograph as “abstract”? He says in *Examples*, “I was not conscious of any such definition at the time. I prefer the term extract over abstract, since I cannot change the optical realities but only manage them... For photographic compositions I think in terms of creating configurations out of chaos, rather than following any conventional rules of composition.”

E. What problems did he face in the years before he developed the Zone System?

Adams describes in *Examples* how “the deeply shadowed recesses of the cliffs contrasted with the blinding sunlit snow” and taxed his “intuition and the range of the film as well.” The ice of the lake was glaring. He had not yet developed his Zone system, and couldn’t precisely measure the luminance. He made an educated guess and “hoped for the best”. He said he was “fortunate” in his results in these years of his “technical insufficiencies”. After he developed the “Zone System, the guesswork was removed from unfamiliar situations, and good control of results became possible.”

F. Technical Aspects

Frozen Lake and Cliffs was taken early in his career when Adams said he “did not yet have the necessary craft to relate exposure and development precisely for optimum results”. He had not yet developed the well-known Zone System. The negative is degraded from being developed in exhausted developer, which makes it “very difficult to print”. It requires considerable craft in burning in areas to balance the tones. “Making the print involves the use of many controls and trials to obtain results that approximate what I saw and felt when I made the exposure.”

- Camera: 4x5 Korona View camera
- Lens: 10-inch Goerz Double Anastigmat lens, with a component with a focal length of 19 inches, which gave him precisely the composition he visualized. A normal focal length of 6 ¼ inches would have included a much larger field of view.
- Paper: Oriental Seagull Grade 4

SAND DUNES, SUNRISE, DEATH VALLEY NATIONAL MONUMENT, CALIFORNIA, c. 1948

- A. What did Adams see when he arrived to take the shot?
- B. How and why did Adams photograph *Sand Dunes* at sunrise?
- C. Why do you think photographers find deserts a difficult subject?
- D. What does it mean to “visualize” the photograph in the mind’s eye?
- E. Why is *Sand Dunes* a photograph sometimes termed abstract?
- F. Technical Aspects

A. What did Adams see when he arrived to take the shot?

First, what do YOU see when you first look at the photograph? Adams describes in *Examples* what he saw: “A searing sun rose over the Funeral Range, and I knew it was to be a hot day. Fortunately I had just arrived at a location where an exciting composition was unfolding. The red-golden light struck the dunes, and their crests became slightly diffuse with sand gently blowing in the early wind.” In his autobiography he adds, “Just then, almost magically, I saw an image become substance: the light of sunrise traced a perfect line down a dune that alternatively glowed with the light and receded in shadow”.

B. How and why did Adams photograph *Sand Dunes* at sunrise?

Adams described how he was able to be on the spot just as the sun rose. He parked nearby and spent the night sleeping on top of his car. “Arising long before dawn, I made some coffee and reheated some beans, then gathered my equipment and started on the rather arduous walk through the dunes”. Adams termed the effect of the dune sunrise “legendary”. He had tried to get there for that special moment several times before, struggling “through the steep sands with a heavy pack only to find (he) was too late for the light”. On this morning he just made it on time. Fifteen minutes after he made his exposure, “the light flattened out on the dunes”.

C. Why do you think photographers find desert a difficult subject?

Ansel Adams wrote about the light. “For most photographers Death Valley presents difficulties. The desert experience is primarily one of light; heroic, sunlit desolation and sharp, intense shadows are the basic characteristics of the scene...In many desert photographs of sunlit subjects, the shadows appear as empty black areas”. Adams also wrote about the shifting sands. “The dunes are constantly changing, and there is no selected place to return to after weeks or months have passed”. Another difficulty can be strong winds that blow the sands about and damage the lens. And of course there’s the extreme heat that makes it uncomfortable for the photographer and can damage film.

D. What does it mean to “visualize” the photograph in the mind’s eye?

Adams understood his craft and the entire process of developing and printing so well that he would “visualize” the end result he desired. He then used his light meter to determine scientifically the intensity of the light. About *Sand Dunes*, he said, “we should thus visualize the desired shadow values and adjust exposure and development of the negative thereto”.

Does the human eye or the camera capture a truer picture? According to Adams, the eye actually “perceives great luminosity and texture” in shadows in deserts. Through the limitations of the camera apparatus, shadows appear almost solid black which is “visually untrue”.

E. Why is *Sand Dunes* a photograph sometimes termed abstract?

What struck you first when you looked at it? The shapes? The tones? The textures? These are elements of art that apply to most images, whether we can recognize the subject (figurative) or not (abstract). When artists arrange formal elements in aesthetic (artful) ways so that they please the eye, often the result is an effect of abstraction. Did you recognize that the image was of sand dunes at first? Is it an “important” subject? Not really, not like a mighty mountain or famous person or historical event. What’s important in this photograph is the way of SEEING. The choices the artist made about angle and lighting and composition (the way the shapes and textures are arranged) make it an exquisite image.

F. Technical Aspects

- Lens: 7” Dagor lens
- Film: 4x5 Kodachrome, Kodak Plus-X film pack at ASA 64
- Filter: Wratten No. 8 (K₂) filter
- Exposure: 1/8 second at f/22-32
- Development: Normal-plus-one development

ABOUT THE ARTIST!

Ansel Adams (1902-1984) was a world-famous landscape photographer and environmentalist. A landscape photographer is someone who takes pictures of the land and of nature. An environmentalist is someone who works to protect the air, water, animals, and plants from pollution and destruction. Adams believed that it was very important to preserve the beauty of nature so that everyone could enjoy it for many generations. He often took photographs in national parks throughout California and the Southwest because these were places that he loved and wanted the public to care about.

- Have you ever taken a photograph of nature?
- Where were you?
- What did you photograph?
- Why do you think the artist chose to photograph this scene in nature?
- What makes this scene special?
- How do you feel when you look at this photograph? Why?

NOW IT'S YOUR TURN!

Materials:

- Paper
- Markers
- Colored Pencils
- Paint

Directions:

Think about a place that you really love; it can be a park, the beach, or someone's house that you love to visit. You can even choose an imaginary place. Create your own artwork of this place using the markers, pens, pencils, or paint. Your work of art can be realistic or abstract. Try to think about how this place makes you feel and incorporate that into your drawing or painting. Then write a poem or story to go along with your image.

Ansel Adams's Photography Inspires Poetry

Objective

To create poetry inspired by photography. Students will translate visual images into words. They will learn to use common poetry structure in the correct formatting.

Materials

- Image of one of Ansel Adams's photographs (transparency, slide projection or poster)
- Pencils
- Paper
- Copies of correct poetry formatting for each student
- Images or books of Ansel Adams's photography (postcards or photocopies of pictures will work as well)

Preparation

Place photographed copies of the Poetry Formatting Worksheet at every desk.

Introduction

Students will cover the basic formats of poetry in a formatting worksheet. To find and print a poetry formatting document for students, see:

- www.kathimitchell.com/poemtypes.html
- www.poetryteachers.com

Motivation

Poetry is a term that is used in many ways. Show students an image of Ansel Adams's photographs and ask them to tell you how his image could be interpreted as poetry.

Transition

Pass out the images or books of Ansel Adams's photographs. Ask students to select a photograph by Ansel Adams and write a poem inspired by his photograph using one of the poetry formats discussed.

Follow Up

Have students share their poetry with the class. Then, move on to the next type of poetry and a different photograph.

Suggested Educator Guides & Lessons

Ansel Adams at 100: Moment in Life

Art and History, Grades 6-12

Enjoy this book and interactive site that are both titled *Ansel Adams at 100* and beautifully laid out, interesting and fun to use to learn about Ansel Adams's life.

- www.sfmoma.org/adams/content_web.html

Ansel Adams: A Documentary Film

Art, Grades 4-12

This site features an Educator Guide for the PBS film *Ansel Adams: A Documentary Film*. It includes lessons on conservation and how Adams used photography to try to capture and communicate the beauty he saw in nature. Watch the film in our downstairs lounge while the *Ansel Adams: Masterworks* exhibit is at the Museum.

- www.pbs.org/wgbh/amex/ansel/

References/Resources

Books

- Adams, Ansel. *The Camera: The Ansel Adams Photography Series 1*. New York: Little, Brown and Company, 2005.
- Adams, Ansel. *The Negative: The Ansel Adams Photography Series 2*. New York: Little, Brown and Company, 2005.
- Szarkowski, John. *Ansel Adams at 100*. New York: Little, Brown and Company, 2003.

Movies

- Drain, Margaret. (Executive Producer). (2003). *Ansel Adams*
- Howard, Edgar. (Executive Producer). (2004). *Speaking of Art: John Szarkowski on Ansel Adams*

Related Web Sites

<http://www.community-photography.com/frame.html>

Idea for a workshop or community project, it could also be done in the classroom.

http://www.nytimes.com/interactive/2008/04/27/travel/20080427_YOSEMITE_FEATURE.html#

The New York Times examines nine of Ansel Adams's photographs.

<http://www.pbs.org/wgbh/amex/ansel/tguide/index.html>

PBS's *Ansel Adams: A Documentary Film* and lesson plans.

Ansel Adams (1902-1984)

- 1839 A new method of photography is invented in France by **Louis Jacques Mande Daguerre**. The French government purchases the rights to the invention and makes it available to the public. Within months, clients are paying photographers to make daguerreotype portraits. Photographers are also sent on expeditions to make daguerreotypes in Russia, Egypt, and the Middle East.
- 1842 A daguerreotype camera is taken along on an expedition led by John Fremont to chart the Western territories. Fremont is inexperienced with the process and obtains poor results.
- 1845 John L. O'Sullivan coins the phrase "Manifest Destiny" to justify America's Western expansion.
- 1850's Ansel Adams's grandfather, William James Adams, establishes a profitable grocery business in Sacramento and San Francisco, selling goods to Gold Rush migrants.
- 1851 Robert Vance holds an exhibit in New York called "Views of California". With more than 300 daguerreotypes, the exhibit receives rave reviews.
March 25: The Mariposa Battalion enters Yosemite Valley under the leadership of Lafayette Bunnell. Supported by prospectors, their mission is to remove the Native American population in Yosemite to reservations.
- 1853 John Fremont leads an expedition to California, and brings along professional photographer Solomon N. Carvalho, who successfully makes many good photographs.
- 1854 James Cutting's ambrotype, a thin collodion negative on a glass plate, is developed. The wet plate process soon improves to make it possible to make paper positive prints from wet collodion glass plate negatives.
- 1857 William James Adams (Ansel's grandfather) opens a lumber business, Adams & Blinn, which will become the Washington Mill Company.
- 1859 Charles Weed photographs Yosemite and displays his work in Sacramento at the Fifth Annual Fair of the State Agricultural Society.
- 1861 Carleton Watkins travels to Yosemite for the first time, and makes many photographs that receive critical acclaim at an exhibit in New York. These photographs inspire President Abraham Lincoln to deed Yosemite as park land to the state of California.
- 1862 Olive Bray, Ansel Adams's mother, is born in Iowa while her family is going west in a wagon train.
- 1864 The Bray family settles in Carson City, Nevada, where they become prominent figures in the city's social scene.
- 1867 Washington legislators initiate what will become four "Great Surveys", exploring and mapping America's Western lands. Survey work will continue until 1879, and lead to the formation of the U.S. Geological Survey.

- 1868 Charles Hitchcock Adams, Ansel Adams's father, is born in California.
- 1871 William Henry Jackson takes photographs of Yellowstone, which are used by Senator Samuel C. Pomeroy of Kansas to convince the Senate of Yellowstone's value.
- 1872 Yellowstone becomes the nation's first national park.
- 1873 Timothy O'Sullivan photographs the ancient ruins at Canyon de Chelly, Arizona. Ansel Adams will later call O'Sullivan's work "one of the most extraordinary photographs ever made in America".
- 1875 John K. Hillers becomes the first person to photograph the Grand Canyon. Seasonal climbing cables are erected on the back of Half Dome, Yosemite's awe-inspiring granite formation, for the first time. The cables allow adventurous souls to make a hair-raising ascent to the top.
- 1878 George Eastman gets a patent for a process of manufacturing gelatin dry plates, making photographic wet plates obsolete.
- 1887 Avid hunter and future president Theodore Roosevelt joins with Forest and Stream editor George Bird Grinnell to found the Boone and Crockett Club. Roosevelt begins his public career as an advocate for wilderness by mobilizing club members to defend Yellowstone Park from the threats of mining and railroad interests.
- 1888 George Eastman invents lightweight photographic film that does not have to be developed immediately after exposure. Photography is now more accessible to amateurs.
- 1890 Due to lobbying by John Muir, Yosemite becomes a national park.
- 1896 Olive Bray and Charles Adams get married and settle in San Francisco.
- 1902 February 20: Ansel Adams is born at 114 Maple Street, San Francisco, the only child of Olive and Charles.
- 1906 April 18: A powerful earthquake strikes San Francisco, followed by a fire that burns uncontrolled for three days. An area of 4.7 square miles is completely destroyed. The Adams family's home survives with little damage, because it is located on the city's outskirts. Four-year-old Ansel suffers a broken nose in an aftershock.
- 1907 The Adams family loses a substantial amount of its fortune in the financial panic.
- 1914 Adams's father takes Ansel out of school and tutors him at home. He also makes arrangements for his son to study ancient Greek and take piano lessons privately with Frederick Zech. Over the next fifteen years, music will come to dominate his studies, and Adams will decide to become a concert pianist.
- 1915 The **Panama Pacific Exposition**, celebrating the opening of the Panama Canal, is held for ten months in the present-day Marina District. Adams's father buys him a year-long pass so he can attend the exposition daily.

- 1916 Adams convinces his parents to go to Yosemite for a vacation. They give their son his first camera, a **Kodak Box Brownie**. Adams begins to photograph the park and develops an enthusiastic interest in both photography and Yosemite. Adams returns to Yosemite every year for the rest of his life.
- 1919 Winter: Adams is infected with the Spanish **influenza**, at the tail end of the worst epidemic in American history. Though he will recover, over half a million Americans die; the worldwide death toll is upwards of 30 million. He determines to return as soon as possible to Yosemite, a place that seems pure and healing to him.
 Summer: After several summers of avid hiking, exploration, and photography in Yosemite, Adams joins the Sierra Club and applies for a job as summertime custodian of the club's Yosemite headquarters. In this role for several years, he will lead tours, answer questions, and maintain a library. He also places and removes the seasonal cable system on the back of Half Dome that enables adventurous park visitors to summit it. He will ascend and descend Half Dome for six days every spring and every fall, carrying the heavy clamps in a backpack.
- 1920 Adams's first published photograph appears in the *Sierra Club Bulletin*. Adams learns flash photography (before the era of flash bulbs) to make himself more versatile –and tells a few stories of nearly setting his subjects on fire.
- 1921 Takes first high country outing with the Sierra Club. Still determined to become a concert pianist, Adams seeks a practice piano at Yosemite. He finds it in the studio of painter Harry Best, and there meets **Virginia Best**, whom he will later marry.
- 1922 Publishes first article in the *Sierra Club Bulletin*.
- 1924 Explores Kings River Canyon with the Le Conte family.
- 1925 Summer: Adams photographs in the area of the **Kings River**, in the Sierra Nevada. When he returns to San Francisco at the end of the summer, he breaks up with Virginia, certain that marriage is incompatible with the musical career he still seeks.
- 1925-26 Winter: Adams supports himself as a piano teacher in San Francisco. Adams makes albums for the Sierra Club outings held at the San Francisco office of the club. He demonstrates varying angles and techniques of photographing the same subject.
- 1927 Winter: Disillusioned with the politics and posturings of San Francisco's musical world, Adams decides to abandon his musical career.
 For the first time, Adams makes a photograph in a style uniquely his own. *Monolith, the Face of Half Dome* depicts Half Dome with a sharp, clear focus, and the sky is darkened for dramatic effect. He considers it to be his first "visualization".
 San Francisco insurance man and arts patron Albert Bender underwrites Adams's first portfolio, *Parmelian Prints of the High Sierras*, which contains 18 prints. One hundred portfolios are printed and they sell out at \$50.00 apiece.
- 1928 January 2: Adams and Virginia Best are married in Yosemite.
 Ansel Adams meets photographer Edward Weston at Albert Bender's.
 William Colby, executive director of the Sierra Club, invites Adams to be the official photographer of a Sierra Club outing to the Canadian Rockies.

- 1929 Photographs in the Taos Pueblo in Northern New Mexico for a book project; meets Georgia O’Keeffe and John Marin.
- 1930 Adams and his wife build a home next to his parents’ house in San Francisco.
Meets photographer Paul Strand in Taos, New Mexico, and becomes committed to fulltime career in photography after understanding Strand’s total dedication to creative photography and seeing his negatives. Strand’s modern style affects Adams’s own style, and inspires him to make intimate, detailed photographs of leaves and flowers. Adams begins accepting commercial photography assignments. Continues commercial work into the early 1970’s.
- 1930’s Adams photographs Kings River and Kern River in the Sierra Nevada.
Adams prints Farm Security Administration photographer Dorothea Lange’s photographs while she is out in the field so she can get feedback before they are sent to Washington, D.C. During the Depression, the F.S.A. had hired photographers to document American rural life.
- 1931 Adams begins writing a photography column for *The Fortnightly*.
The Smithsonian Institution in Washington, D.C., mounts a solo exhibit of Adams’s work entitled “Pictorial Photographs of the Sierra Nevada Mountains by Ansel Adams”.
Charles Adams is made Fellow of the American Association for the Advancement of Science. He is also a member of the Astronomical Society of the Pacific.
- 1932 The M.H. de Young Memorial Museum in San Francisco holds a solo exhibit of Adams’s photographs.
The Group f/64 is created. The name of the group is derived from the very small lens aperture used to increase sharpness and depth of field. The members, including Adams, Edward Weston, Imogen Cunningham, Willard Van Dyke, Henry Swift, Sonya Noskowiak, and Jon Paul Edwards, are committed to defining photography as a pure art form rather than a derivative of other art forms.
- 1933 Ansel and Virginia’s son, Michael, is born.
The San Francisco Museum of Art gives Adams a one-person exhibit.
September: When the Gallerie Beaux Arts at 166 Geary Street in San Francisco closes, Adams reopens it as the *Ansel Adams Gallery* for photography.
Adams meets master photographer and art world authority Alfred Stieglitz for the first time at his gallery, *An American Place*, in New York City. Stieglitz is very impressed with Adams’s portfolio.
November: Adams meets gallery director Alma Reed at her Delphic Studios in New York, one of the few galleries to exhibit photographs at the time. Adams is never paid for the eight prints of his that Reed sells.
- 1934 Adams holds an impromptu Yosemite Wildflower Festival.
Adams shares responsibility for gallery with Joseph Danysh so he can go back to photographing. It becomes the Adams/Danysh Gallery.
January-May: *Camera Craft Magazine* runs a series of articles by Adams called “An Exposition of Technique”.
Adams begins a 37-year tenure as a member of the Sierra Club’s Board of Directors.
- 1935 Ansel and Virginia’s daughter, Anne, is born.
Adams organizes a Conservation Convention and Wildflower Festival.
His *Making a Photograph* is published.

- 1936 January: A conference on the national parks is held in Washington, D.C. The Sierra Club sends Adams to lobby for the establishment of **Kings Canyon** as a national park. Adams shows his photographs of the Sierra to lawmakers and the Secretary of the Interior, Harold Ickes.
Adams begins to work with a “little camera”, a Contax, in addition to his **view camera**.
May 9: *The Washington Times* reviews an Arts Club exhibit of Adams’s work in Washington, D.C.
October 27: Alfred Stieglitz hosts a one-person exhibit of Adams’s work at “An American Place”, his gallery in New York.
November: Secretary of the Interior Harold Ickes commissions Adams to make photographs of the national parks, which he plans to enlarge into murals for the Department of the Interior’s main building. Adams begins working on the assignment.
Adams photographs Carlsbad Caverns National Monument, New Mexico, for the U.S Park Service.
December: Adams is hospitalized for a chest infection and mononucleosis.
- 1937 January 7: Curator Beaumont Newhall invites Adams to display some of his photographs at a Museum of Modern Art exhibit entitled “Photography: 1839-1937”.
Virginia Adams inherits her father’s gift shop in Yosemite, Best’s Studio, which sells paintings, photographs, and curios. The family moves to Yosemite.
June: A fire in Adams’s darkroom in Yosemite destroys one-third of his early negatives. Weston and his wife help sort through the wreckage.
He takes photography treks with Weston through the High Sierra and with Georgia O’Keeffe and David McAlpin through the Southwest.
The University of California at San Francisco hosts a one-man show by Adams.
- 1938 After working on the book for nearly a year, Adams’s *Sierra Nevada: The John Muir Trail* is published. Adams sends a copy to Ickes, who shows it to President **Franklin D. Roosevelt**. Roosevelt keeps the book for the White House, so Adams sends Ickes another copy.
- 1940 Congress passes a bill making Kings Canyon a national park.
Adams curates “A Pageant of Photography” for the Golden Gate Exposition. This overview of American photographic history features photographs of the **Civil War**, as well as photographs of the Old West made by 19th century photographers such as Carleton Watkins and Timothy O’Sullivan.
December 31: Beaumont Newhall curates the first photography exhibit at the Museum of Modern Art. Adams helps him plan the exhibit, and becomes a consultant to the museum. He helps found the Department of Photography at the Museum with Newhall and David McAlpin.
Adams shoots his celebrated *Surf Sequence* on an outing with Beaumont and Nancy Newhall.
- 1940’s Adams gets an assignment from AT&T to photograph employees at their jobs.
- 1940’s-50’s George Waters at Kodak hires Adams along with Edward Weston, Paul Strand, and Charles Sheeler to shoot advertising photos with Kodak film. Unfortunately, many of the color prints have faded due to the instability of the dyes in the Ektachrome film.
- 1941 Ansel and Virginia Adams write *Michael and Anne in Yosemite Valley*. The children’s book depicts their two young children. The text is written by Virginia, with Ansel contributing the photographs. The book is quite successful, despite Adams’s complaints about the poor quality of the reproductions.
Adams makes his own version of Timothy O’Sullivan’s 1873 photograph of the ancient ruins at Canyon de Chelly, Arizona.
March: Adams patron Albert Bender dies.

- October: Adams curates “Image of Freedom” exhibition at New York’s Museum of Modern Art with Nancy Newhall.
 October 31: Adams makes one of his best-known photographs, *Moonrise, Hernandez, New Mexico*.
- 1941-42 Adams develops the **Zone System** technique of exposure and development control while teaching at the Art Center School in Los Angeles. He works as photography consultant to the Office of War Information in Los Angeles.
- 1942 Due to the outbreak of World War II, the Department of the Interior is forced to cancel its mural project.
- 1943 Adams visit Manzanar, an **internment** camp for Japanese-Americans. Refusing government funding, he documents the plight of the internees at his own expense. While there, he shoots *Winter Sunrise, Sierra Nevada, from Lone Pine, California*.
 Nancy Newhall curates an exhibit of Adams’s Manzanar photographs at the Museum of Modern Art.
- 1944 *Born Free and Equal*, a book featuring Adams’s Manzanar photographs, is published. Many criticize him for being disloyal.
- 1945 February: Adams and Dorothea Lange collaborate to photograph the wartime shipyards in Richmond, California for *Fortune*.
 Ted Spencer, president of the San Francisco Art Association, asks Adams to set up a department of photography at the California School of Fine Arts. Adams passes on his teaching position to Minor White, because it takes up too much of his time.
- 1946 Adams is awarded a John Simon Guggenheim Memorial Foundation Fellowship to photograph national parks and monuments.
- 1947 Adams goes to Alaska to work on his Guggenheim project and on an assignment for Kodak. While there, he makes photographs of Denali National Park.
- 1948 Adams’s Guggenheim Fellowship is renewed.
 Beaumont Newhall is appointed as the first curator of the **George Eastman House** in Rochester, New York. He establishes the International Museum of Photography there.
 Adams publishes two books that teach about photography: *The Camera and the Lens* and *The Negative*.
- 1949 Adams’s *My Camera in Yosemite Valley* is published.
- 1950’s Adams and Dorothea Lange work together on assignments—one on the Mormons of Utah for *Life*, and one for *Fortune* on agriculture in the San Joaquin Valley.
- 1950 *My Camera in the National Parks* and *National Parks and Monuments* are published. Adams has made the photographs for these books with support from his Guggenheim fellowships for photographing the national parks.
 Adams goes to Hawaii on an assignment for Kodak.
 Adams’s *The Print* is published.
- 1952 *Natural Light Photography*, another of Adams’s teaching books, is published.

- June and July: Adams and Nancy Newhall collaborate on a series of articles for *Arizona Highways*, a magazine that showcases photographs of nature.
Adams co-founds *Aperture*, a journal of creative photography, with the Newhalls, Minor White, and others. Virginia and Ansel Adams start a company called Five Associates with three friends. The company produces high-quality photographic postcards and notecards, which are sold at Best's Studio.
- 1953 Adams does *LIFE* magazine photo-essay with Dorothea Lange on the Mormons in Utah.
- 1954 Adams and Nancy Newhall collaborate on *Death Valley*.
- 1955 Nancy Newhall and Adams curate an exhibit called "This Is the American Earth", which is held at the LeConte Memorial Lodge in Yosemite before traveling throughout the United States. Among its venues are the Smithsonian, New York's Museum of Modern Art, and the California Academy of Science. Adams begins an annual photography event: The Ansel Adams Yosemite Workshop, an intense, short-term creative photography learning experience.
- 1956 Another Adams teaching book, *Artificial Light Photography*, is published.
- 1957 Adams films *Ansel Adams, Photographer*, directed by David Meyers.
- 1958 Adams makes the photographs *Aspens, Northern New Mexico* in both horizontal and vertical formats. Adams tries to resign from the Sierra Club during the battle to widen the Tioga Road near Tenaya Lake. In the end, he loses his battle—and he believes the region is done irreparable harm. His resignation is not accepted. He has a rubber stamp made that says, "Remember Tenaya!!!".
- 1960's Adams and the Sierra Club fight to get Pacific Gas & Electric to move the site of their nuclear power plant from Nipomo Dunes to Diablo Canyon. The site is moved, but deep rifts in political strategies are created within the Sierra Club.
- 1961 Adams receives honorary Doctor of Fine Arts degree from the University of California, Berkeley.
- 1962 Adams sells his San Francisco house and builds a home and studio overlooking the Pacific Ocean in Carmel Highlands, California.
- 1963 Nancy Newhall curates "The Eloquent Light", a retrospective of Adams's work held at the de Young Museum in San Francisco.
- 1965 Adams meets with President **Lyndon B. Johnson** to discuss environmental issues and takes an active role in his task force.
At the President's request, Adams and Nancy Newhall produce a book called *A More Beautiful America*, which uses Adams's photographs and text from Johnson's speeches.
- 1966 Adams is elected as fellow of the American Academy of Arts and Sciences.
Cole Weston leases art gallery space to Adams, who starts an organization called Friends of Photography in Carmel.
- 1968 Secretary of the Interior Stewart Udall awards Adams the Conservation Service Award, the Interior Department's highest civilian honor.

- 1969 Adams is elected director of the Sierra Club.
Adams delivers Alfred Stieglitz Memorial Lecture at Princeton University. He receives the Progress Medal from the Photographic Society of America.
- 1971 After 37 years of service, Adams resigns as director of the Sierra Club.
Adams becomes more involved with the Wilderness Society because of their focus on wilderness issues and because of his friendship with William Turnage, who is serving as executive director.
- 1972 The San Francisco Museum of Modern Art holds an exhibit called “Ansel Adams: Recollected Moments”.
- 1974 Adams’s first trip to Europe. He teaches at the Arles, France photography festival.
The Victoria and Albert Museum in London hosts an exhibit of Adams’s work.
Spring: David McAlpin organizes an exhibit at the Museum of Modern Art to display Adams’s lesser-known work in portraiture. The exhibit’s catalogue is called *Singular Images*.
- 1975 January 28: President **Gerald Ford** requests a print of *Clearing Winter Storm* after seeing it in “Images: 1923-1974”. Adams presents him with the print, as well as his outline of a “New Initiative for the National Parks”. Adams says to President Ford, “Mr. President, every time you lean back in your chair, that picture is going to remind you of your responsibility to do something for the national parks.”
Adams helps found the Center for Creative Photography at the University of Arizona, Tucson, where his archive is established.
- 1976 Adams’s *Taos Pueblo* is reprinted.
Adams’s *Photographs of the Southwest* is published.
Adams returns to Arles photography festival during his second European trip and photographs Scotland, Switzerland and France. He is elected Honorary Fellow of the Royal Photographic Society of Great Britain.
- 1977 James Alinder becomes executive director of Friends of Photography.
John Szarkowski curates “Ansel Adams and the West at the Museum of Modern Art in New York.
Adams’s *Yosemite and the Range of Light* is published.
- 1978 The Friends of Photography mount an exhibition called “Ansel Adams: 50 Years of Portraits”.
- 1979 Adams is invited to make official photographs of President Jimmy Carter and Vice-President Walter Mondale for the National Portrait Gallery. This marks the first time photographs are used instead of paintings.
September 3: Adams appears on the cover of *Time* magazine.
- 1980 June 9: Adams receives the Presidential Medal of Freedom, the nation’s highest civilian honor, from President Carter. He receives the first Ansel Adams Award for Conservation given by the Wilderness Society.
- 1981 A mural-sized print of *Moonrise, Hernandez, New Mexico* sells for \$71,500, the highest price ever paid for a print.

Adams is awarded the Hasselblad Medal of Honor at the Museum of Modern Art in New York by the King and Queen of Sweden.

Adams receives Honorary Doctor of Fine Arts degree from Harvard University. He holds the final workshop in Yosemite, then transfers workshop to the Carmel area to be run by The Friends of Photography.

An hour-long biographical film, *Ansel Adams Photographer*, is co-produced by Andrea Gray and John Huszar for Film America.

1982 Receives the Decoration of *Commandeur* in the Order of the Arts and Letters, the highest cultural award given by the French Government to a foreigner.

February 19: A celebration marking Adams's 80th birthday is put on by the Alinders at the Monterey Peninsula Museum of Art. Pianist Vladimir Ashkenazi performs at the party.

An exhibition called "The Unknown Ansel Adams" is curated by Jim Alinder for the Friends of Photography in Carmel.

1983 Ansel Adams Day is proclaimed by the California State Legislature.

An exhibition of Adams's work is held in Shanghai. It is the first American exhibit to be invited to the National Museum of Beijing since the Communist takeover.

May: An Adams interview in *Playboy* magazine comes out. Adams is outspoken in his opposition to President **Ronald Reagan**.

June 30: Adams is invited to meet with President Reagan. He views it as an opportunity to express his views on conservation.

1984 April 22: Ansel Adams dies at the age of 82. Congress passes legislation designating more than 200,000 acres of land between Yosemite National Park and John Muir Wilderness Area as the Ansel Adams Wilderness Area.

1985 April 22: Mount Ansel Adams, an 11,760-foot peak located at the head of the Lyell Fork of the Merced River, on the Southwest boundary of Yosemite National Park, is officially named on the first anniversary of his death.

Lithography

Lithography (from Greek *lithos*, "stone" + *grapho*, "to write") is a method for printing using a stone (Lithographic Limestone) or a metal plate with a completely smooth surface. By contrast, in intaglio printing, a plate is engraved, etched or stippled to make cavities to contain the printing ink, and in woodblock printing letterpress ink is applied to the raised surfaces of letters or images.

Lithography on Limestone

Lithography was invented by Alois Senefelder in Bohemia in 1796. In the early days of lithography, a smooth piece of limestone was used (hence the name). After the oil-based image was put on the surface, a solution of gum arabic in water was applied, the gum sticking only to the non-oily surface. During printing, water adhered to the gum arabic surfaces and avoided the oily parts, while the oily ink used for printing did the opposite. Lithography works because of the mutual repulsion of oil and water.

When printing, the stone is kept wet with water. Naturally the water is attracted to the layer of gum and salt created by the acid wash. Printing ink based on drying oils such as linseed oil and varnish loaded with pigment is then rolled over the surface. The water repels the greasy ink but the hydrophobic areas left by the original drawing material accept it. When the hydrophobic image is loaded with ink, the stone and paper are run through a press which applies even pressure over the surface, transferring the ink to the paper and off the stone.

The modern lithographic process

The earliest regular use of lithography for text was in countries using Arabic, Turkish and similar scripts, where books, especially the Qu'ran, were sometimes printed by **lithography** in the nineteenth century, as the links between the characters require compromises when movable type is used which were considered inappropriate for sacred texts.

High-volume lithography is used today to produce posters, maps, books, newspapers, and packaging-just about any smooth, mass-produced item with print and graphics on it. Most books, indeed, all types of high-volume text, are now printed using offset lithography.

Lithography as an artistic medium

During the first years of the nineteenth century, lithography made only a limited impact on printmaking, mainly because technical difficulties remained to be overcome. Germany was the main center of production during this period. Godefroy Engelmann, who moved his press from Mulhouse to Paris in 1816, largely succeeded in resolving the technical problems, and in the 1820's lithography was taken up by artists such as Delacroix and Géricault. London also became a center, and some of Géricault's prints were in fact produced there. Goya in Bordeaux produced his last series of prints in lithography - *The Bulls of Bordeaux* of 1828. By the mid-century the initial enthusiasm had somewhat died down in both countries, although lithography continued to gain ground in commercial applications, which included the great prints of Daumier, published in newspapers. Rodolphe Bresdin and Jean-François Millet also continued to practice the medium in France, and Adolf Menzel in Germany.

In 1862 the publisher Cadart tried to launch a portfolio of lithographs by various artists which flopped, but included several superb prints by Manet. The revival began in the 1870's, especially in France with artists such as Odilon Redon, Henri Fantin-Latour and Degas producing much of their work in this way. The need for strictly limited editions to maintain the price had now been realized, and the medium become more accepted.

In the 1890's color lithography became enormously popular with French artists, Toulouse-Lautrec most notably of all, and by 1900 the medium in both color and monotone was an accepted part of printmaking, although France and the U.S. have used it more than other countries.

George Bellows, Alphonse Mucha, Max Kahn, Pablo Picasso, Eleanor Coen, Jasper Johns, David Hockney and Robert Rauschenberg are a few of the artists who have produced most of their prints in the medium. M.C. Escher is considered a master in lithography, and many of his prints were created using this process. More than other printmaking techniques, printmakers in lithography still largely depend

on access to a good printer, and the development of the medium has been greatly influenced by when and where these have been established.

Photographs

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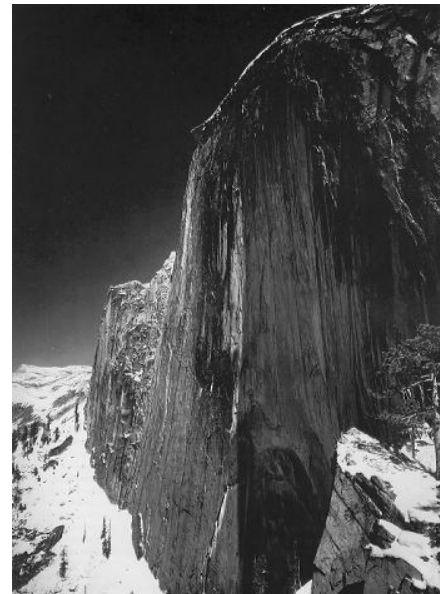
Frozen Lake and Cliffs, The Sierra Nevada, Sequoia National Park, California 1932



Mount Williamson, The Sierra Nevada, from Manzanar, California 1945



Moonrise, Hernandez, New Mexico
October 31, 1941



Monolith, the Face of Half Dome, Yosemite National Park, California
April 17, 1927



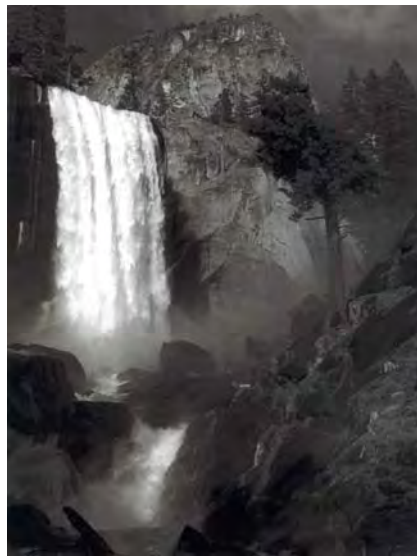
Rose and Driftwood, San Francisco, California
c. 1932



Sand Dunes, Sunrise, Death Valley
National Monument, California
c. 1948



Trailer Camp Children, Richmond,
California 1944



Vernal Fall, Yosemite Valley,
California
c. 1948