



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## Table of Contents

---

Page	Contents
3	<b>List of Images</b>
4	<b>An Overview of the Great Salt Lake</b> Written by Rebecca L. Hull
9	<b>Great Salt Lake on the Web</b> Compiled by Rebecca L. Hull
10	<b>South Shore, Great Salt Lake - Jim Frankoski</b> Written by Rebecca L. Hull
11	<b>Jim Frankoski Lesson Plan Ideas</b> Written by Douglas R. Allen
12	<b>Chrysler Newport, Bonneville Salt Flats - Richard Misrach</b> Written by Rebecca L. Hull
13	<b>Richard Misrach Lesson Plan Ideas</b> Written by Douglas R. Allen
14	<b>Bathers, The Great Salt Lake - C.R. Savage</b> Written by Rebecca L. Hull
15	<b>Charles R. Savage Lesson Plan Ideas</b> Written by Douglas R. Allen
16	<b>Spanish II Class Lesson Plan</b> Written by Sarah Lovell
19	<b>Seeing and Reading Photographs: A Lesson Plan</b> Written by Cheryl A. Sneddon, Ph.D.
22	<b>Pilings, South Shore - John Telford</b> Written by Rebecca L. Hull
23	<b>John Telford Lesson Plan Ideas</b> Written by Douglas R. Allen

(Continued on Next Page)

---

Evening for Educators is funded in part by the  
Katherine W. & Ezekiel R. Dumke, Jr. Foundation and  
the StateWide Art Partnership



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## Table of Contents (continued)

---

Page	Contents
24	<b>Wasatch Mountains with the Great Salt Lake -Gilbert Munger</b> Written by Rebecca L. Hull
25	<b>Gilbert Munger Lesson Plan Ideas</b> Written by Douglas R. Allen
26	<b>Robert Smithson's Spiral Jetty -Gianfranco Gorgoni</b> Written by Rebecca L. Hull
27	<b>Gianfranco Gorgoni Lesson Plan Ideas</b> Written by Douglas R. Allen
28	<b>Guide to Utah State Visual Arts Core</b> Written by Douglas R. Allen
31	<b>Science Lesson Plans</b> <b>The Wave</b> Written by Nancy Peterson <b>Sink or Float?</b> Written by Patricia Anderson

---

Evening for Educators is funded in part by the  
Katherine W. & Ezekiel R. Dumke, Jr. Foundation and  
the StateWide Art Partnership



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## List of Images

---

1. Jim Frankoski (1950-), American  
**South Shore, Great Salt Lake, 1989**  
Gelatin silver print  
Purchased with funds from Friends of the Art Museum  
Museum # 1995.041.001
  
2. Richard Misrach (1949 - ), American  
**Chrysler Newport, Bonneville Salt Flats, 1992**  
Chromogenic Dicoupler  
Purchased with Funds from the Friends of the Art Museum  
Museum # 1996.010.001
  
3. C. R. Savage (1832-1909), American  
**Bathers, The Great Salt Lake, 1890**  
Gelatin silver-bromide print  
Gift of Dr. James E. and Debra Pearl Photograph Collection  
Museum # 1996.23.4
  
4. John Telford (1944- ), American  
**Pilings, South Shore, 1975**  
Silverprint  
Purchased with Funds from the Friends of the Art Museum  
Museum # 1979.186.006
  
5. Gilbert Munger (1837-1903), American  
**Wasatch Mountains with Salt Lake City and the Great Salt Lake in the Foreground, 1877**  
Oil on canvas  
Gift of Mr. Kenneth Nebenzahl  
Museum # 1977.022
  
6. Gianfranco Gorgoni (1941- ), Italian  
**Robert Smithson's Spiral Jetty, 1970**  
Gelatin silver print  
Gift of John Weber Gallery  
Museum # 1996.022.001  
Art © Estate of Robert Smithson/Licensed by VAGA, New York, NY



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## Overview of the Great Salt Lake

---

Written and Compiled by Rebecca L. Hull

### **History and Statistics of the Great Salt Lake**

The Great Salt Lake supports a rich and dynamic biological system of regional, national and global importance. Situated in the Great Basin in the western United States, the lake covers an average area of about 1500 square miles, making it larger than Rhode Island. It is about 75 miles long and 30 miles wide but is very shallow. The depth varies with the fluctuation in the lake level, but the average is about 15 feet, with an average maximum of 30 to 33 feet.

After the Lake Bonneville flood 14,500 years ago, the Great Basin gradually became warmer and drier. Lake Bonneville began to shrink due to increased evaporation. Today's Great Salt Lake is a large remnant of Lake Bonneville and occupies the lowest depression in the Great Basin. This location has allowed for the deposition of about 12,000 feet of sediment from the lake's various tributaries. The large amount of accumulated sediment is due to the fact that the Great Salt Lake is a terminal lake, meaning it has no outlet. Thus, all of the materials from rivers and other sources come in to the lake, but there is no escape for them.

The first accounting we have of the lake comes from the Spanish missionary explorers Dominguez and Escalante, who learned of the lake from the Native Americans in 1776, but they never actually saw it. Jim Bridger was the first European American person known to have visited the lake in 1825. Other fur trappers or traders, such as Etienne Provost, may have beaten Bridger to its salty shores, but there is no evidence of this. The first scientific examination of the lake occurred in 1843 by John C. Fremont.

### **Why is the Great Salt Lake so salty?**

Runoff from the Wasatch Range to the east brings fresh water into the lake. About 66% of the water entering the lake each year comes from three rivers- the Bear, the Weber/Ogden, and the Jordan. Another 31% comes directly from precipitation in the form of rain or snow, while ground water and springs under the lake provide the final 3%.

The water flowing into the lake from the mountains carries dissolved mineral salts that have been removed from rocks and soils along the way. After the water enters the lake, there is only one way out - evaporation. As the water evaporates, it leaves behind the salts it brought into the lake, thus increasing the salinity of the lake water. It is estimated that more than 2 million tons of salts are added to the lake each year. As a result, the Great Salt Lake is one of the saltiest bodies of water in the world, with only the Dead Sea, on the border between Jordan and Israel, having a higher salinity. Depending on the lake level, the salinity of the lake in historic times has ranged from about 27% (7.7 times as salty as ocean water) to about 5% (1.4 times as salty).

The north and south arms of the Great Salt Lake are separated by a 13-mile long rock-fill causeway, which was constructed in 1957. The south arm of the lake receives flow from all three main tributaries in contrast to no major inflow of fresh water to the northern arm, which, as a result, has a significantly higher salinity. A 300-foot breach was made in the causeway in 1984 to control flooding, which also increased water circulation between the two parts of the lake.

## **Organization of Islands**

There are a total of eight official islands, ranging in size from 23,175-acre Antelope Island to tiny, 22-acre Hat Island, designated as those that were exposed as islands during the historic high water level of 1875. Many of the islands are actually peninsulas which are connected to the mainland. The principal islands are as follows:

**Antelope Island**, named by Colonel John C. Fremont in 1845, is the largest island. It has freshwater springs, a historic ranch house, and a herd of American bison. Although the native antelope and bison had disappeared from the island before the advent of the Mormon pioneers to the Salt Lake Valley, the bison were reintroduced to the island in 1893. More recently, antelope and elk were also reintroduced and Antelope Island is now a state park.

**Stansbury Island**, the second largest, is really a peninsula most of the time. It was named after Howard Stansbury, a government surveyor who inspected the lands in 1849. Most of the island is privately owned and used for grazing cattle. Many good examples of Native American rock art can be found on Stansbury Island.

**Fremont Island**, named for John C. Fremont, is primarily used for sheep grazing. Many prehistoric artifacts have been discovered on Fremont Island.

**Carrington Island** was named by Captain Stansbury for Albert Carrington, an assistant to Stansbury's surveying party. It was used for bombing practice during WWII, and is covered with bomb craters.

**Gunnison Island**, name by Stansbury for Captain John Gunnison, is located in the northern arm of the lake. Always surrounded by water and not very easily accessible, the island is an important breeding ground for the American white pelican. For a short period, guano was harvested from the island as well.

**Dolphin Island** is the northernmost island in the lake and is composed of tufa (calcium carbonate) cemented gravel. It is said to look like a dolphin on its side.

**Cub Island** is a very small island, which also serves as a nesting ground for the pelican. It is called Cub Island because it is attached to the larger Gunnison Island during periods of low water.

**Hat Island**, named for its conical hat shape, is also known as Bird Island, because it is a nesting ground for many birds such as California gulls.

**Strong Knob, Black Rock, White Rock, and Egg Islands** often appear on maps of the Great Salt Lake, but all of them are extremely small. **Strong Knob** and **Black Rock** are only islands during periods of extremely high water. **Black Rock Island**, named for its dark color, was home to a very famous bathing resort around the turn of the century.

## Wildlife - The Ecological Web

Although the Great Salt Lake is often referred to as Utah's "Dead Sea," and is thought of as a barren, desolate wasteland, nothing could be farther from the truth. The lake and its surroundings host a complex web of unique and fascinating life forms.

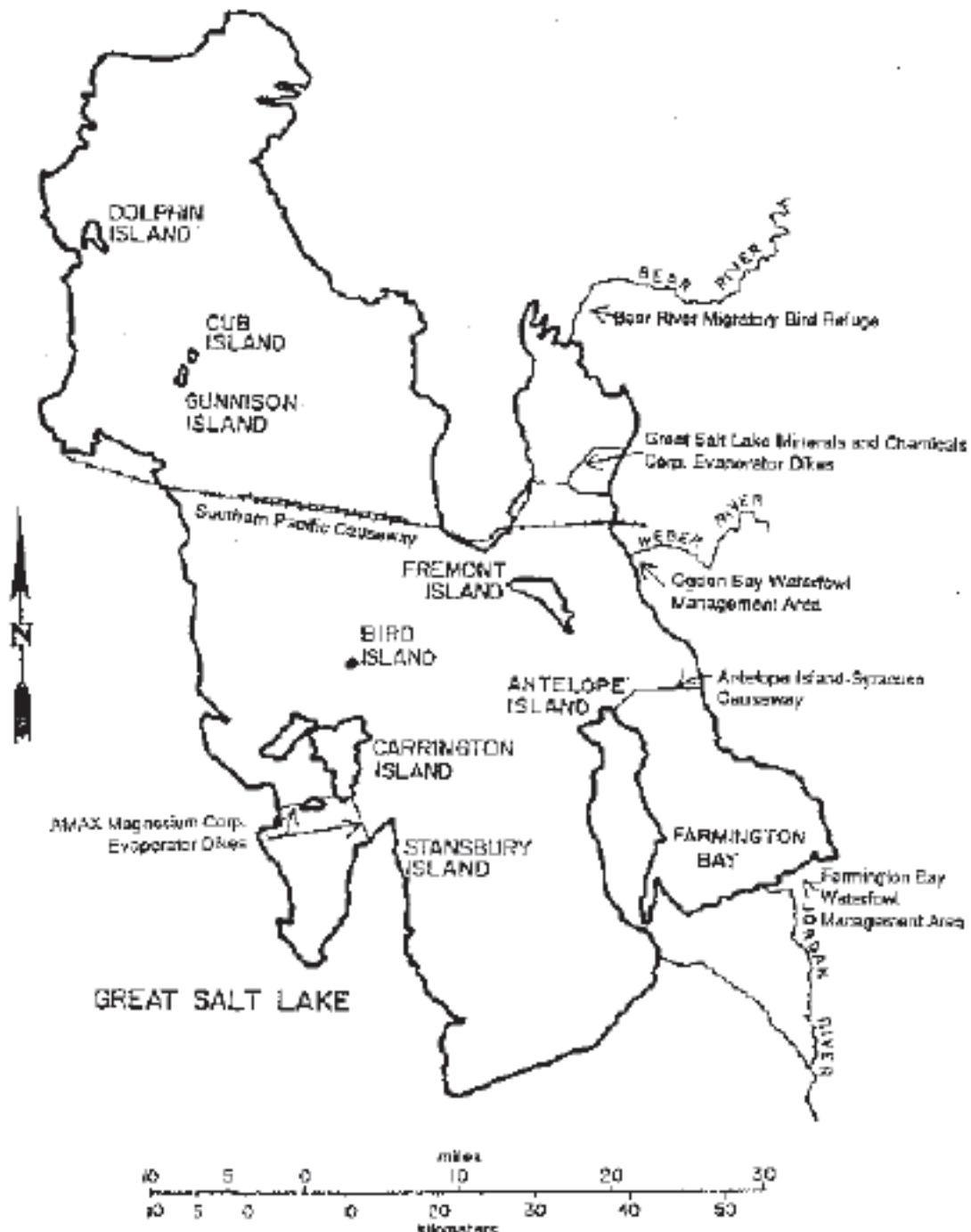
The lake, marshes and salt flats contain a wide variety of species ranging from the simple brine shrimp to the great blue heron. **Marshes** are found where freshwater streams enter the lake and are host to a complex community of microscopic organisms, bulrush, spikerush, insects, and a variety of birds. The **salt flats** occur in low areas known as **playas** where water collects and then evaporates, leaving behind large deposits of salt. Tiger beetles are one of the few animals that are adapted to live in this environment.

The breadth and abundance of bird life at the Great Salt Lake have earned its designation as a "Western Hemisphere Shorebird Reserve." Birds of regional, national and international significance are drawn to its 15,000 square miles of water environment, remote islands and shoreline, and 400,000 acres of wetlands. Five million birds representing 257 species rely on the lake for resident feeding and sanctuary, breeding, or migratory stopover. The ecology of life at the Great Salt Lake is an incredible example of the rich web of relationships between land and water, food and survival.

### Visual Aids:

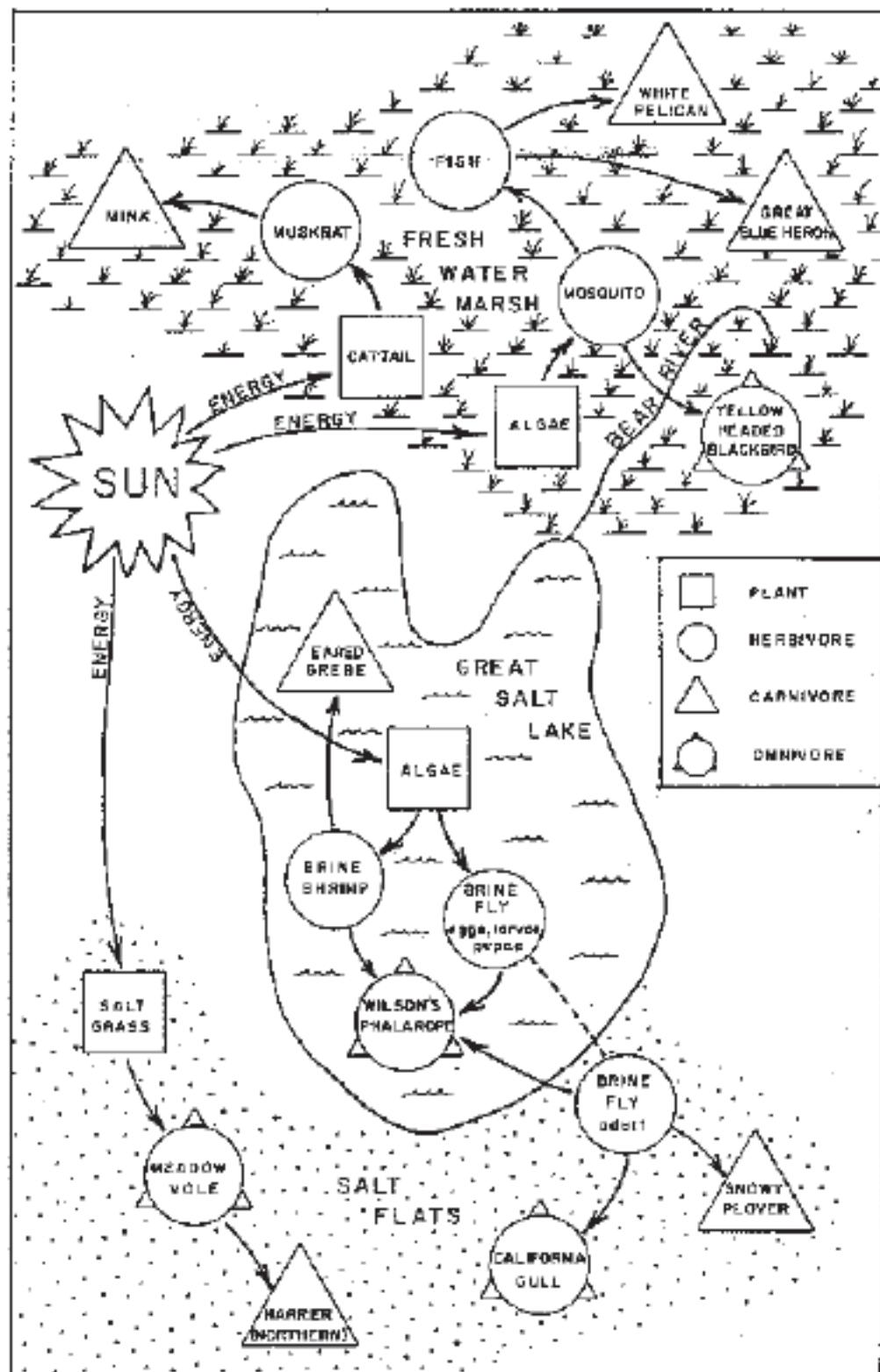
- “Some Features of the Great Salt Lake”
- “Examples of Great Salt Lake Food Webs”

# Some Features of the Great Salt Lake



Reprinted from The Great Salt Lake Story      Published by the Utah Museum of Natural History  
Used by permission

# Examples of the Great Salt Lake Food Webs



Reprinted from The Great Salt Lake Story

Published by the Utah Museum of Natural History

Used by permission



# Great Salt Lake

## Utah Museum of Fine Arts

### Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## Great Salt Lake on the Web

Compiled by Rebecca L. Hull

<http://www.ugs.state.ut.us/online/PI-39/PI39PG3.htm>

<http://www.fogsl.org/education/gsled.html>

<http://www.kargesfineart.com/links/Gilbert-Munger.htm>

<http://www.d.umn.edu/tma/MungerSite/Intro.html>

<http://www.edelmangallery.com/misrach.htm>

<http://www.museum.cornell.edu/HFJ/currex/hoto/misrach.htm>

<http://www.nature.org/aboutus/inresponse/about/art4888.html>

<http://people.senecac.on.ca/john.telford>

<http://parks.state.ut.us/parks/www1/grea.htm>

[http://www.americansouthwest.net/utah/salt\\_lake\\_desert](http://www.americansouthwest.net/utah/salt_lake_desert)

<http://www.utah.edu/umfa>

<http://www.djtfineart.com>

<http://www.fogsl.org>

[http://sjmusart.org/body\\_misrach.html](http://sjmusart.org/body_misrach.html)

[http://wildcat.arizona.edu/papers/90/31/09\\_1\\_m.html](http://wildcat.arizona.edu/papers/90/31/09_1_m.html)

Olpin, Robert. Utah Art Artists. Layton[Utah]: Gibbs Smith, 2001.

Gonzalez, Reynaldo, Gorgoni, Gianfranco. Cubano 100%. Milano: Charta, 1997.

Utah Museum of Natural History. The Great Salt Lake Story. 1997.

Dogu, Hikmet. An Intermittent Illusion. University of New York, 1996. Special Collections in Marriot Library.

Czerny, Peter. The Great Great Salt Lake. Provo[Utah]: Brigham Young University Press, 1976.



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## South Shore, Great Salt Lake- Jim Frankoski

Written by Rebecca L. Hull

### Jim Frankoski



Jim Frankoski (1950-), American  
South Shore, Great Salt Lake, 1989  
Gelatin silver print  
Purchased with funds from Friends of the Art Museum  
Museum # 1995.041.001

Jim Frankoski was born in Detroit, Michigan in August of 1950 and has made a name for himself as a brilliant photographer of Utah's landscapes and still lifes. He studied at Western Michigan University for two years under a football scholarship until he transferred to Wayne State University in 1970. It was there that he decided to pursue a career in fine arts.

His interest in photographing the Great Salt Lake began in 1973 as he made the daring move from Michigan to Utah in search of change and creative inspiration. He certainly found this inspiration through many summer trips to the shores of the expansive Great Salt Lake, and continued these observations for over ten years. During the off-season, when neither weather nor time permitted a trip out to the lake, he photographed still lifes in order

to uncover the natural beauty of objects through texture, contrast and variety of composition.

Frankoski views photography as a means to capture the feeling of connection with nature; to show a deep appreciation for the beauties found all around us. He tries to follow his emotions as he photographs an object to make an image that enables the viewer to appreciate its beauty. Most of his photographs of the Great Salt Lake are black and white in order to convey sharpness and detail while retaining a high contrast. He used 8" x 10" film (one of the largest sizes) to express a greater feeling of depth and, only recently, has he begun to experiment more with color in the rest of his works.

Frankoski is a graduate of the University of Utah (1998) and one of his most famous series of photo-graphs, the reconstruction of the Cathedral of the Madeleine, can be found in the collection of the Utah Museum of Fine Arts. Many of his other works are displayed in the L'Asietique Museum in Scottsdale, Florida. Currently, Frankoski devotes much of his time to his wife Gail and son Nick, photographing still lifes in the style of the old Dutch masters, and working at Borge Andersen and Associates, Inc. His dream: travel in Europe and "shoot whatever comes naturally."

# Jim Frankoski Lesson Plan Ideas

---

Written by Douglas R. Allen

Goal:

To incorporate Elements and Principles of Art into class discussions and projects

Grades: K-12

Description:

This view of the Great Salt Lake seems like a surreal image from another place and time. The lines created from the shore, the reflection in the water, the mountains, and the clouds all provide visual movement. It displays qualities of abstract imagery.

Subjects: (Utah Visual Arts Standard 4) Contextualizing

- \*Visual Arts
- \*Literary Arts
- \*Environmental Art
- \*Science

Objective: (Utah State Visual Arts Standard 2) Perceiving

To have students investigate various scenes of the Great Salt Lake, looking at lighting conditions relating to time of day and weather conditions. To have students examine various elements in the environment and their relation to each other. To have students consider abstract art vs. realistic art.

Motivation: (Utah State Visual Arts Standard 3) Expressing

Students may analyze the location of photographs and how selected images create illusions that capture new viewpoints.

Ideas for Projects: (Utah State Visual Arts Standard 1) Making

From looking at the photograph various projects can be done using one or more of the art elements:

**LINE:** the edges of all parts create lines.

**SPACE:** the break up of space provides an interesting composition.

**BALANCE:** there is visual balance in the various parts of the composition.

**RHYTHM:** there is repetition of pattern in the sky and water.



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## Bonneville Salt Flats- Richard Misrach

Written by Rebecca L. Hull

**Richard Misrach**



Richard Misrach (1949 - ), American  
Chrysler Newport, Bonneville Salt Flats, 1992  
Chromogenic Dicoupler  
Purchased with Funds from the Friends of the Art Museum  
Museum # 1996.010.001

For more than twenty years, Richard Misrach has been photographing the American desert, revealing a complex landscape that is as captivating as it is mysterious. His newest book and travelling exhibition, *Crimes and Splendors: The Desert Cantos of Richard Misrach* (Bulfinch, 1996), chronicles the development of his involvement with the desert as he travels across terrain that is both seductive and hazardous, filled with an eerie silence. Through his numerous cantos (groups of pictures) Misrach has created one of the most extensive projects in contemporary photography. For most people, the desert defines itself as a place where little happens, except the occasional glimpse of tumbleweed blowing across the sand. In Misrach's desert, the land vibrates with underground nuclear testing and the sky illuminates with radiation seeping into the atmosphere, creating fantastic colors at every glance.

Whether photographing a flooded town, a desert fire, an abandoned nuclear test site or the colors on the horizon emanating from a small town miles away, Richard Misrach draws the viewer into his world through his mastery of color. Ranging from beautiful lakes to secret military bunkers to speed racing on the Utah salt flats, Misrach's work chronicles man's involvement in the desert, while always paying homage to the intrinsic beauty provided by nature.

In his photographs, Misrach often includes the exact time the photograph was taken. He says of this combination, "The camera is always conceived of as this thing that catches an instant moment and yet you look at the sky and it's a metaphor for eternity."

His photographs are in the permanent collections of the Museum of Modern Art, New York; the Los Angeles County Museum of Art; and the Musee D'Art Moderne, Paris.

# Richard Misrach Lesson Plan Ideas

---

Written by Douglas R. Allen

Goal:

To incorporate the Elements and Principles of Art into class discussions and projects

Grades: K-12

Description:

The artwork displays the balance between natural elements and the man made automobile. The photo displays interplay of positive and negative shapes and creates the feeling of isolation. The image also indicates the distance and size of the lake in relation to the mountains. The photo is in clear focus from the pristine white of the salt flats to the mountains in the distance. The color in the photo displays the variation of blues from the horizon line to the top of the photo. The textural differences are evident throughout the piece from the mountains to the clouds to the automobile.

Subjects: (Utah State Visual Arts Standard 4) Contextualizing

- \*Visual Arts
- \*Literary Arts
- \*History
- \*Environmental Art
- \*Science

Objectives: (Utah State Visual Arts Standard 2) Perceiving

To provide students with an insight of the Great Salt Lake, its location and resource for artistic work and significance for related studies in other subject areas.

Motivation: (Utah State Visual Arts Standard 3) Expressing

Students will view maps that show location of the Great Salt Lake including a satellite photo from space. Students can study uses of the Great Salt Lake, such as a mineral resource, and car racing.

Ideas for Projects: (Utah State Visual Arts Standard 1) Making

From looking at the photograph various projects can be done using one or more of the art elements.

**LINE:** visual line created by the mountains vs. implied line in the clouds.

**SHAPE:** break up of shapes (salt flats, mountains, sky) in an interesting composition. Organic shapes vs. geometric shapes, positive shapes vs. negative shapes.

**SPACE:** observing shadow as to time of day and weather condition for time of year. Looking at perspective, larger clouds in foreground, and smaller clouds in background. (Creating perspective)

**COLOR:** variations in shades of blue in the sky (monochromatic colors) accented by color of car, and creating mood through the use of color.

**TEXTURE:** variety in angular shapes of mountains vs. implied lines in the clouds, metal of car.

**VALUE:** light value of salt flats against darker value of mountains, light value of clouds against darker value of sky (creating a value scale).

**BALANCE:** formal and informal, symmetrical and asymmetrical



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## Bathers, the Great Salt Lake- Charles R. Savage

Written by Rebecca L. Hull



### Charles R. Savage

Born in Southampton, England, August 16, 1832, Savage converted to the Mormon faith and migrated to New York City in 1855, where he learned photography from either or both T. B. H. Stenhouse and Edward Covington. In 1860, Savage and his family moved to Council Bluffs, Iowa, in preparation for crossing the plains to Utah. In a tent in Council Bluffs, he made portraits of Mormon immigrants before the departure of his wagon train. Savage was a partner of Marsena Cannon at his studio on Main Street in Salt Lake City from 1860-61. He was a partner with George Ottinger, an artist, operating as Savage & Ottinger, 1862-mid 1870s.

C. R. Savage (1832-1909), American  
Bathers, The Great Salt Lake, 1890  
Gelatin silver-bromide print  
Gift of Dr. James E. and Debra Pearl Photograph Collection  
Museum # 1996.23.4

Savage photographed the streets of Salt Lake City and traveled throughout Utah, capturing scenes

of native and pioneer life. His partner, Ottinger turned his attention to acting, and the name of the gallery on east Temple Street changed to the Pioneer Art Gallery. In 1866, Savage traveled by stage to California where he became friends with Carlton E. Watkins before departing on a steamer to the Isthmus of Panama, then to New York City. He purchased new equipment, outfitted a traveling photo wagon, and returned to Utah across the plains, photographing scenes in Nebraska, South Dakota and Wyoming, Savage was invited to the celebration of the Joining of the Rails at Promontory, 1869, and took one of the most famous photographs in the history of western America; a woodcut of the image was a centerfold in Harper's Weekly. He took the first photographs of the land that later became Zion National Park in southern Utah. In 1883, the Pioneer Art Gallery burned and his negatives were lost; by the end of the year he opened the new Art Bazaar in the same location. Savage took many trips and photographed throughout the west, especially in California and Arizona; he utilized every format developed during his career, including stereoviews, mammoth plates, ambrotypes and lantern slides. His sons Ralph and George helped in the studio and eventually took over operation in 1906. Savage died in Salt Lake City, February 3, 1909.

Savage's photograph entitled *Bathers, The Great Salt Lake* contrasts the manmade magnificence of the building architecture with the natural spontaneity of human nature. The viewer sees children playing, adults mingling and various individuals just having fun against the backdrop of an expansive structure. Truly, Savage was able to reconcile the forces of man and machine.

# C.R. Savage Lesson Plan Ideas

---

Written by Douglas R. Allen

Goal:

To incorporate the Elements and Principles of Art into class discussions and projects

Grades: K-12

Description:

A slice of time is represented, as bathers flock to the Great Salt Lake for recreation. This photo captures a time when life at the Great Salt Lake was a destination activity for people of all ages.

Subjects: (Utah State Visual Arts Standard 4) Conceptualizing

- \*History
- \*Visual Arts
- \*Literary Arts
- \*Science
- \*Environmental Art

Objectives: (Utah State Visual Arts Standard 2) Perceiving

Students will have the opportunity to investigate the lake for recreational purposes, such as swimming and boating. The photo will provide students with historical facts about the lake.

Motivation: (Utah State Visual Arts Standard 3) Expressing

Students can interview relatives and hear stories about family members that may have used the lake for recreational activities. Grandparents or great grandparents may have stories verbal or written about the lake.

Ideas for projects: (Utah State Visual Arts Standard 1) Making

From looking at photograph various projects can be made with one or more of the art elements:

**LINE:** perspective is displayed in the photograph.

**SPACE:** organization of parts and looking at the setting as in a diorama.

**COLOR:** Looking at color schemes, historical culture, patterns, prints, clothing styles and design.

**TEXTURES:** the variety of surface qualities.

# Spanish II Class Lesson Plan

---

Written by Sarah Lovell

## Applicable Core Standards:

Taken from Utah State Office of Education - CORE Standards for Foreign Language  
([http://www.uen.org/cgi-bin/websql/lessons/c3.htm?course\\_num=4700&core=11](http://www.uen.org/cgi-bin/websql/lessons/c3.htm?course_num=4700&core=11))

**Standard 1** - Students obtain and provide information, express feelings and emotions, engage in conversations, and exchange opinions.

**Standard 2** - Students understand, interpret, and respond to written and spoken language on a variety of topics.

**Standard 3** - Students present information, concepts, and ideas to listeners and readers for a variety of purposes.

**Standard 6** - Students reinforce and expand their knowledge of other disciplines through the target language.

## Objectives:

1. Students will obtain a basic vocabulary of popular recreational activities.
2. Students will review and practice the use of the verb GUSTAR.
3. Building upon a foundation of verb/vocabulary knowledge, students will engage in a group discussion (in the target language) of Charles R. Savage's photograph, Bathers, The Great Salt Lake.
4. Following a careful study of Savage's Bathers photograph, students will engage in a creative activity combining the application of the Spanish language and the artistic knowledge base.
5. By following outlined instructions, students will create a postcard from one of the people featured as a "bather" in the photograph.
  - a. Students will be responsible for reproducing a chosen area of the photograph.
  - b. Students will write four sentences on the back of their postal ("postcard") to express their favorite recreational activities seen in Savage's photograph, Bathers.

## Materials:

- \*Overhead transparency of vocabulary terms
- \*Picture book of various recreational activities
- \*Globe or world map poster
- \*Large paper doll version of Charles R. Savage (preferable on cardboard)
- \*Finished version of the "Proyecto Postal" for display and instruction
- \*Overhead transparency of written portion of postal
- \*Material Baskets containing: 4x6 cards, pens, crayons, rulers and erasers
- \*Large poster of Savage's Bathers for bulletin board display

Time: Lesson is designed for a 50 minute class period

## Preparation/Background: (10 minutes)

1. Explain Lesson objective and provide necessary terms/vocabulary
2. At the beginning of class, students will engage in a warm-up activity in the target language. Explain to the students that they will:
  - a. Copy a vocabulary list down
  - b. Discuss the various terms with a picture book

- c. Learn about a famous American artist and his photography
  - d. Practice with their new vocabulary and use of the verb, gustar in a creative, fun exercise.
3. A list (see page 3) of recreational activities/terms (both Spanish and English) will be shown on the overhead projector.
4. Allow students approximately 7 minutes to copy this list of vocabulary.
5. Speaking in the target language, show a variety of pictures (picture book) depicting the various activities listed on the vocabulary list to check for understanding. You may use a picture book dialogue similar to the following:

Teacher: "Aquí son algunos dibujos de las actividades. ¿Qué es la actividad de este dibujo?"  
 Students: "Nadar"  
 Teacher: "Sí - muy bien. ¿Qué es esta actividad?" Etc,....

#### Activity to Introduce C.R. Savage's photograph: (10 minutes)

1. Using a globe or poster map of the world and a large paper doll depiction of Charles R. Savage, introduce this featured artist in clear and simple Spanish.

Teacher: "Hoy vamos a hablar de un artista famoso. Este artista se llama Charles R. Savage. Él es inmigrante del país, Inglaterra. En 1855, Savage vino con su familia a los estados unidos por la religión mormona. Savage estudiaba la fotografía por cinco años. En 1860, Savage decidió ir a Utah. A él le gustó sacar fotos de la ciudad de Salt Lake, la vida pionera y de la gente contra las imágenes de la industria."

\_\_\_ = underlined words represent cognates/related words between English and Spanish that are helpful to students.

2. Present a transparency of Savage's Bathers to the students. Ask students to write in Spanish the three activities they see in the photograph. Model the dialogue with a volunteer student:

Teacher: "¿Qué ves en la foto, Jorge?"  
 Jorge: "Yo veo a gente quien le gusta tomar sol."  
 Teacher: "¿Qué más le gusta hacer esta gente?"  
 Jorge: "Pues, a la gente le gusta hacer un picnic también."  
 Teacher: "Excelente, Jorge. Muy bien."

3. Engage students in the above classroom dialogue of what they see in the photograph. Have students partner up with another classmate and briefly discuss their ideas.

#### Explain "El Proyecto Postal": (5 minutes)

1. Students are prepared for a creative, integrative project called, "El Proyecto Postal". Essentially, students will:

- a. Select a part of Savage's Bathers photograph
- b. Reproduce this part of Bathers as a picture on their postcard
- c. Write a short message on the back of their postcard/postal as if they as one of the people in this photograph

2. Show students an example of finished "Proyecto Postal".
    - a. Present the reproduction of the photo on an extra-large postcard
    - b. Instruct the students for the written portion of the postal (can be on the board or over head):
- Querido amigo,
- Estoy en el lago salado para mis vacaciones del verano. Es muy divertido. A mí me gusta nadar. A mi hermana le gusta tomar sol. A mis padres les gusta hacer un picnic. A mi hermano no le gustan las personas.

¡Hasta luego!

Rosana

#### Creation Zone: (15 minutes)

1. Distribute "Postal" materials baskets (4x6 cards, pens, crayons, rulers, erasers)
2. Allow students 10 - 12 minutes to work in their creation zone.
3. Teacher will monitor students to ensure understanding and focus on the task at hand and answer any questions.

#### Clean-up and Share: (5 minutes)

1. Assigned students gather the materials, put them into the respective baskets and check the basket into the teacher.
2. 5-6 Selected/volunteered students will share their "Postales" with the class.
3. Each student submits his/her postal to the teacher as he/she departs the class.
4. Teacher displays each "postal" on the classroom bulletin around Savage's Bathers poster.

#### El vocabulario para las actividades recreativas:

La postal = postcard  
El lago salado = Salt Lake  
El dibujo = picture  
El país = country  
La vida pionera = Pioneer life  
La gente = people  
Sacar fotos=to take pictures  
Tomar el sol = to sunbathe  
Nadar = to swim

Hacer un picnic = to have a picnic  
Jugar con amigos = to play with friends  
Echar una siesta = to take a nap  
Bañarse = to bathe  
Hacerse flotar = to float  
Ir en bote = to go/travel in boat  
Relejar = to relax  
Charlar con amigos = to visit with friends

#### Note to teachers:

This lesson is adaptable to any second year language course (i.e. French, German). Because of the basic verb and vocabulary in this lesson, it is suggested as a lesson for the beginning of the school year to review the usage and language dynamics of expressing favorite recreational activities. In addition, Art, English and History classes may adapt the focus of this lesson and postcard activity to fit their respective curriculums.

# **Seeing and Reading Photographs - Lesson Plan**

## **An Interactive History Discussion**

---

Written by Cheryl A. Sneddon, Ph.D., Alabama Historical Commission, 334-230-2683

Grade: Elementary and Secondary

Objectives:

1. Students will learn how to “read” a historic photograph.
2. Students will study history and writing through slowing the process of looking and increasing perceptual skills while avoiding jumping to conclusions.

*Note: This unit is best done with a 3-5-member team of students.*

3. Students will share their response to historic photographs by noting in writing and through interactive discussions of the “W” questions, who, what, when, where, why. Make sure to emphasize the “why” and “so what” questions.
4. Students will produce a written record of a historical photograph.

Materials:

One copy of a current photograph, such as *Bathers, Great Salt Lake* by Savage or one that is comfortable to look at with a stopwatch, work sheet, pencils, eraser, and a grid sheet (for first exercise).

Several copies of historical photographs, stopwatch, worksheet, pencils, eraser, and a grid sheet (for second exercise).

Preparation:

1. List vocabulary needed to understand the material:  
prejudices, limitations, judgment, photographer, and extended perception.
2. List evaluation strategies:
  - a. Written assignments (no adaptations would be needed for gifted or special needs students. If writing were an issue for any of the students, the teacher could assign a recorder to the team to write down the information as the students collect it.)
  - b. Being able to place photographs in historical context.
  - c. Create a photography exhibit. Create an exhibit of photographs collected by the class. Label writing and creation/thematic interpretation are the most effective ways to relay meanings to visitors at the exhibit.

Points to Ponder:

1. Ironically, we are a visually illiterate society. We are bombarded with images and we look without seeing. Why?  
It takes time.
2. A photographer can share an experience of beauty or truth through photographs, an audience can share its response to these same qualities.
3. A photographer can assume responsibility for his/her images, the viewer can assume responsibility for his/her response.

Activity:

1. Choose a photograph, such as *Bathers, Great Salt Lake* you can enjoyably view for a long time.

2. Look at it for at least 10 minutes without moving, concentrate.
  3. Move away from it and recreate the images and experience in detailed steps in your mind.
  4. Continue on with your day, recalling the flavor of the experience.
- Note:** *The trick is accepting whatever the experience is for itself. Listen for the whisper. The moment of truth may be tiny. Defer “judgement;” it is more important to trace what the image does to you and how it affects you.*
5. Using the worksheet, expand upon each of the following points in as much detail as you deem necessary for the students
  6. Again view the photograph/art. Read it from left to right, top to bottom. Each time you go over it attempt to pick up new details. Break the photo into smaller components, by grids, or by looking at the background, the foreground, groups of objects, buildings or people, individual items, portions of the human body, and so on.
  7. Write down all of the photograph’s contents.
  8. Discuss answers to the “W” questions: Who, what, when, where, why. Emphasize the “why” and “so what” questions, placing them in (historical) context.
  9. Evaluate the evidence.
  10. Draw your conclusions and acknowledge your prejudices and limitations.

### Reading a Photograph Worksheet

This method of studying historic photographs is designed to SLOW the process of looking to increase perceptual skills and prevent jumping to conclusions.

#### Activity:

1. Concentrate on the photo for two minutes, and then cover it up.
2. Without referring back to the photo, list everything you remember, even things that seem unimportant.
3. Divide the photo into nine sections, as if the grid below were laid over it. Examine each section individually by covering all the other sections with sheets of paper.

1	2	3
4	5	6
7	8	9

4. Correct any mistakes in the first list and in this space, list any additions:

**Interpreting Photographs Worksheet**

1.What is happening in the photo/art?

2.What would you like to know that the photo doesn't tell you?

3.What happened before the photo was taken?

4.What is outside the photo?

5.Why do you think the photo was taken?

*Special thanks to Gary B. Peterson, PhotoGeoGraphics, and Wreatha Witte*



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## Pilings, South Shore - John W. Telford

Written by Rebecca L. Hull



John Telford (1944- ), American  
*Pilings, South Shore*, 1975  
Silverprint, Purchased with Funds from the Friends of the Art  
Museum  
Museum # 1979.186.006

### John W. Telford

Born in 1944 in Sandy, Utah, John Telford is a talented Salt Lake City photographer as well as an associate professor at Brigham Young University. In early days, he experienced some formal training in photography at BYU but has always been essentially self-taught, even though he is now the holder of an M.F.A. from the University of Utah. Telford worked for the U of U (supervisor of photography, Educational Media Center) long before he picked up his advanced degree, and for a number of years, he was director of the Edison Street Gallery in Salt Lake City for Borge Anderson and Associates. Telford also taught for the U of U's Division of Continuing Education as an associate instructor of the Department of Art, and was on the U of U/Snowbird Summer Arts Institute faculty for several years. Other teaching assignments include Westminster College, the Salt Lake Art Center, Hill Air Force Base, and the Kimball Art Center, and his photographs have appeared in Fortune, Stern, Communication Art, and People magazines (the latter fortunate enough to employ John as "regional photographer").

The great Salt Lake Portfolio, which culminated six years work on the Great Salt Lake, was published in 1979 and has been exhibited in numerous galleries across the country. *Pilings, South Shore* is from this Great Salt Lake Portfolio.

Telford has a unique ability to capture the light and shapes of the landscape in order to convey his profound respect and admiration for nature. His first works were done in black and white with a concentration on the silver medium, emphasizing the lines and shadows of the land. However, he felt that black and white did not adequately express the true, vivid beauty of the land. Telford has said: "To photograph this unique world in black and white is like listening to Beethoven with ear plugs." In more recent works, he has concentrated on the colors of the landscape in order to bring the photograph to life for the viewer. Thus, he is able to create the feeling of being immersed in the surroundings of the pictures and, in essence, transport the viewer to the location of the photograph to appreciate its true beauty.

# John Telford Lesson Plan Ideas

---

Written by Douglas R. Allen

Goal:

To incorporate the Elements and Principles of Art into class discussions and projects

Grades: K-12

Description:

The three tall vertical shapes have been captured in a way to provide interest in the photo. They are joined by the shorter various shapes. The placement of these high in the photo provide depth and the repetition of the tall shapes against the smaller shapes create perspective. In the lower portion of the photo water and minerals create movement and interest. The photo is darker at the bottom and gets lighter as it moves upward reflecting light in the water as it recedes into the distance.

Subjects (Utah State Visual Arts Standard 4) Contextualizing

- \*Visual Arts
- \*Literary Arts
- \*History
- \*Environmental Art
- \*Science

Objectives: (Utah State Visual Arts Standard 2) Perceiving

To provide students with insight of the Great Salt Lake, its location, as a resource for artistic work and viewing it's changing environment.

Motivation: (Utah State Visual Arts Standard 3) Expressing

Students can investigate the history of the lake and analyze the existence of the pylons left standing. Students can look at the mineral deposits and investigate their source. Students can look to the artistic merit of the photo and discuss art elements displayed.

Ideas for Projects: (Utah State Visual Arts Standard 1) Making

From looking at the photograph, various projects can be done using one or more of the art elements.

**LINE:** perspective of various shapes within the composition; objects lower in the picture plane are closer while objects higher are farther away.

**SHAPE:** overlapping of images creating distance, understanding foreground, middleground, and background, manmade shapes vs. natural shapes and the composition of those elements.

**TEXTURE:** variety of surface qualities in organic and geometric shapes.

**VALUE:** reflection of the light, shadow and value.

**MOVEMENT:** repeated shapes in the objects and flow of minerals in the water provide the feeling of motion.



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## The Wasatch Mountains- Gilbert Munger

Written by Rebecca L. Hull



Gilbert Munger (1837-1903), American  
Wasatch Mountains with Salt Lake City and the Great Salt Lake in the Foreground, 1877  
Oil on canvas, Gift of Mr. Kenneth Nebenzahl  
Museum # 1977.022

### Gilbert Munger

Gilbert Munger (1837-1903) was born on April 14, 1837 in Madison, Connecticut. He showed an interest and talent in art early in life. His family allowed him to follow this inclination by sending him at age 13 to Washington DC where he became an apprentice engraver, living at the home of William H. Dougal, who was a senior engraver for the Smithsonian. He

worked at this trade for about ten years, producing many plates for various US government reports. Starting in 1866 Munger maintained a studio in New York City and then also in St. Paul and Duluth, Minnesota, where his brothers had settled. He had paintings in the National Academy of Design exhibition of 1866.

In the summer of 1869 Munger traveled to Utah to become a guest artist with Clarence King's Geological Survey of the 40th Parallel. For the survey he "made and finished studies of what I saw, painting the geological formations with careful detail so that a geologist could tell the species of rock." During this period from 1869 to 1873, Munger's western landscapes have a realistic, vigorous, detailed topographical approach and only incidentally contain people or animals. Later, his paintings were used to teach geology to students at Yale University. About 1886 Munger moved to Paris and painted country scenes from north and south of the city along the Seine River. His style changed from realistic scenes of dramatic landscapes to, as he later described it, "soft, mellow, and reposeful scenes." The new style was strongly influenced by the Barbizon school, following Corot. His Barbizon paintings enjoyed considerable success in the French and UK art markets where he was recognized with medals, a Red Cross in Russia, a Knight of the Order in Germany, and a King Leopold Gold Medal in Belgium.

Munger returned to the US in an attempt to establish himself among the elite in New York City, but his European fame did not translate to America and he never managed to re-establish himself as a painter of note. Only recently have art viewers around the world come to appreciate and admire his talent of capturing unique occurrences in nature such as sunsets, reflections on ponds, and amazing rock formations.

# Gilbert Munger Lesson Plan Ideas

---

Written by Douglas R. Allen

Goal:

To incorporate Elements and Principles of Art into class discussions and projects

Grades: K-12

Description: The painting contains subdued colors that express the mood of the setting. The reflection in the water and the color in the sky create the beauty that Mother Nature provides. The birds soaring give movement and the addition of life in the painting. There is a warm glaze in the painting, which gets darker as it moves toward the edges creating an oval vignette around the image. The image created portrays the impression of a serene place and captures a moment in time.

Subjects: (Utah State Visual Arts Standard 4) Contextualizing

- \*Visual Arts
- \*Literary Arts
- \*History
- \*Science

Objective: (Utah State Visual Arts Standard 2) Perceiving

To provide students with a historic representation of a slice of time and place where they can appreciate the value of the lake. Students may see the beauty of nature and the mood created by the setting.

Motivation: (Utah State Visual Arts Standard 3) Expressing

Students can view a realistic image of Salt Lake City and the lake as it was over 100 years ago. Students could study the environment and changes that have occurred.

Ideas for Projects: (Utah State Visual Arts Standard 1) Making

From looking at the painting various projects can be done using one or more art elements:

**LINE:** The directional lines created by the water, mountains and shoreline.

**SPACE:** the organization of the parts within the painting; the composition of foreground, middle-ground, and background.

**COLOR:** learning color theory, mixing, glazing, creating a mood, warm colors vs. cool colors.

**VALUE:** shades of colors (monochromatic) and the affects of light on the image and the reflection in the water.



# Great Salt Lake

Utah Museum of Fine Arts

Evening for Educators

September 25, 2002, 5:30 p.m. - 8:30 p.m.

## The Spiral Jetty- Gianfranco Gorgoni

Written by Rebecca L. Hull



### Gianfranco Gorgoni

Born in Italy, Gorgoni seeks to capture the small concerns of everyday life and the joys and sorrows of ordinary people. As a reporter, Gorgoni has been to many parts of the world where current events have unfolded before his eyes. He spent a night in a cell in Iran where he observed police brutality, witnessed the surprise visit by President Sadat of Egypt to the State of Israel, took the last photograph of the Argentinean warship Belgrano before the English sank it a few days later, and became acquainted with Fidel Castro in his attempt to document the real life of Cubans through photography.

Gianfranco Gorgoni (1941- ), Italian  
Robert Smithson's Spiral Jetty, 1970  
Gelatin silver print, Gift of John Weber Gallery  
Museum # 1996.022.001  
Art © Estate of Robert Smithson/Licensed by VAGA, New York, NY

Smithson. Smithson made all the plans, hired the crews and supervised its completion and Gianfranco was there every step of the way. Gorgoni's photograph entitled *Robert Smithson's Spiral Jetty* is one of the most famous of this amazing earthwork.

The monumental earthwork Spiral Jetty (1970) is located at Rozel Point on the western side of Promontory Point on the Great Salt Lake in Utah. Using black basalt rocks and earth from the site, Smithson created a coil 1500 feet long and 15 feet wide that stretches out counterclockwise into the translucent red water.

Spiral Jetty was acquired by Dia Center for the Arts as a gift from the estate of the artist in 1999. Although it has been submerged for most of its existence, in 2002 it re-emerged due to Utah's four year drought. Realizing, after its completion, that he had built it at a time when the level of the lake was unnaturally low, Smithson considered adding further material to ensure that his artwork would be visible more often. As yet this has not been done.

# Gianfranco Gorgoni Lesson Plan Ideas

---

Written by Douglas R. Allen

Goal: To incorporate the Elements and Principles of Art into class discussions and projects

Grades: K-12

Description:

The Spiral Jetty is 1500 feet long, approximately 15 feet wide and is comprised of rock and earth that displays a design of a decreasing circle. The spiral floats in the water and changes in value as the clouds pass overhead. It is an accent to the water and land displays contrast in its existence to the earth and water surrounding it.

Subjects: (Utah State Visual Arts Standard 4) Conceptualizing

- \*Environmental Art
- \*Visual Arts
- \*Literary Arts
- \*Science

Objectives: (Utah State Visual Arts Standard 2) Perceiving

Provide students with artistic insight in the creation of Earth Art providing nature with accents that can enrich the environment. Invite students to examine the differences between aesthetic work and work created just for function.

Motivation: (Utah State Visual Arts Standard 3) Expressing

Students can investigate the source of design and the culture of those, which may have influenced that design.

Ideas for projects: (Utah State Visual Arts Standard 1) Making

From looking at the photographs various projects can be done using one or more of the art elements:

**LINE:** the formation of a circular design using the road as a line.

**SHAPE:** the circular design floating in a backdrop of water, positive and negative shapes.

**SPACE:** the area created by the circular design and the space around it.

**TEXTURE:** surface qualities of the rocks vs. the ripples in the water, impasto qualities of the rocks, and the texture of sand. (sand painting)

**VALUE:** changes in light to dark in the water and earth, the multi range of values going from white to black. (Achromatic)

**MOVEMENT:** the flow of line in a circular pattern.

**RHYTHM:** the repeat of an image creating a pattern

**HARMONY:** Composition: the break up of the parts in the picture plane creating harmony and an interesting composition.

# Guide to the Utah State Visual Arts Core

---

Written by Douglas R. Allen  
From: <http://www.uen.org>

## Explanation of Standards:

The Utah State Visual Arts core has four art standards Making, Perceiving, Expressing, and Contextualizing. These four divisions or standards organize the curriculum into manageable and related units and guide the student toward a deep and holistic comprehension of the Visual Arts. Each standard is broken into objectives.

## Courses presented in the Visual Arts Core Curriculum:

Art History and Criticism (VA 1210)  
Ceramics (VA 1220)  
Sculpture (VA 1230)  
Film Making (VA 1240)  
Commercial Art and Electronic Media (VA 1250)  
Foundation I (VA 1100)  
Foundation II (VA 1200)  
3-D Design (VA 1110)  
Printmaking (VA 1130)  
Drawing (VA 1140)  
Painting (VA 1150)  
Jewelry (VA 1160)  
Photography (VA 1170)

\*There are additional elective courses such as: AP Art History and AP Studio Art available in many schools.

## Description of Standards:

### 1. Utah State Visual Arts Standard 1: MAKING

A. Students will assemble and create works of art by experiencing a variety of art media and by learning the art elements and principles.

1). Objective A: Explore a variety of art media, techniques, and processes.

2). Objective B: Create expressive works of art that show the use of art elements and principles.

### 2. Utah State Visual Arts Standard 2: PERCEIVING

A. Students will find meaning by analyzing, critiquing, and evaluating works of art.

1). Objective A. Describe artwork according to the art elements and principles. Examine the function and interpret the work of art.

2). Objective B: Evaluate works of art based on art elements and expressive qualities.

3. Utah State Visual Arts Standard 3: EXPRESSING

A. Students will create meaning in art.

1). Objective A: Look at content, identify subject matter and theme.

2). Objective B: Curate works of art in terms of medium and content.

4. Utah State Visual Arts Standard 4: CONTEXTUALIZING

A. Students will find meaning in works of art through settings and other modes of learning.

1). Objective A: Align works of art according to history, geography, and personal experience. Use visual characteristics to look at historical, social, and cultural contexts. Evaluate impact of culture, personal experience, or other periods in history on the artwork being discussed.

2). Objective B: Synthesize art with other educational subjects and integrate the artwork with other subjects and across disciplines.

3). Objective C: Examine careers related to visual arts and discuss how visual arts can add quality to live and life long learning.

Elements of Art:

The elements of art are those concepts, which artists use to create a composition.

**LINE:** provides direction, and can be thin, fat, rough, smooth, curved, continuous or implied. It may be two-dimensional or three-dimensional. Line may also create liner perspective.

**SHAPE:** can be positive, negative, organic or inorganic, and vary in size. A shape can be two-dimensional or three-dimensional.

**SPACE:** is defined by the variety of shapes organized in the composition. It defines the area around, between and within things.

**FORM:** is three-dimensional and contains length, width, and depth. Spheres, cubes, and cylinders are examples of forms.

**COLOR:** contains three properties, hue - the name of the color, intensity or chroma - how bright or dull the color is, and value - how light or dark the color is.

**TEXTURE:** refers to the surface quality and how rough, smooth, hard or soft the look or feel of the object is.

**VALUE:** refers to how light or dark something is and includes the many shades in between.

### Principles of Art:

The principles of art are displayed through the use of the elements of art. Each principle may be applied to each art element and viewed in the completed composition.

**BALANCE:** Balance can be formal (symmetrical) or informal (asymmetrical). Balance employs the visual weight of the various parts of the composition.

**MOVEMENT:** Movement creates action, motion, and direction within the artwork.

**RHYTHM:** is the variety and repetition that is created though the shapes, colors, lights and darks that are present in the artwork.

**EMPHASIS:** is the area where the artist has decided to place the impact. It is called the center of interest or focal point.

**VARIETY:** expresses the different art elements (color, texture, value) to provide interest and excitement.

**PATTERN:** surface design that may involve a repeat image and utilizes art elements such as: line, value, and color.

**PROPORTION:** relates to the size of images with in the artwork so that one thing looks correct in relation to something else.

**HARMONY:** is created by using similar elements and arranging them in a satisfying way.

**UNITY:** is the organization of all parts into a pleasing composition.

# The Wave

---

## A Science Lesson

Written by Nancy Peterson, reprinted by permission of the Utah Museum of Natural History

Grade: Upper Elementary (3rd-6th) through high school

Objectives:

1. Students will explain why there are ancient benches along the Wasatch foothills and on some of the islands in the Great Salt Lake
2. Students will name the three main benches in the Salt Lake City area

Materials:

- \*sand
- \*paint roller pan
- \*water
- \*board or stiff plastic (slightly shorter than width of pan)
- \*photographs of the Salt Lake Valley or GSL island showing the wave cut terraces

Background:

At its maximum extent, Lake Bonneville, the Great Salt Lake's immediate precursor, was about 1,200 feet deep and spread over much of western Utah and portions of Nevada and Idaho, covering an area of about 20,000 square miles. Around 14,500 years ago, the lake breached the natural dam to the north at Red Rock Pass in Idaho, and the water level dropped 350 feet in less than a year. The new lake level, known as the Provo level, was maintained for another 500 years. By 12,000 years ago, the lake level had dropped over 1,000 feet due to the increasingly arid climate. These various lake levels left 0-cut terraces and associated beaches and deltas that can still be seen on the surrounding hillsides. The deltas supply much of the sand and gravel that is used by the construction industry in the Salt Lake Valley. An example is the large operation outside the mouth of Big Cottonwood Canyon.

The most noticeable terraces today are the Bonneville level (the top level), the Provo level (next one down), and the Stansbury level (which was created when Lake Bonneville was still rising and is much less obvious than the other two). This activity demonstrates how the terraces, or benches, were formed.

Preparation:

Sift the sand through a screen or strainer to get it as fine as possible

Activity:

1. Make a "beach" by moistening the sand and packing it into the paint roller pan so that it covers the sloping part to a depth of about one inch. It's not necessary to have much in the deep part.
2. Pour water into the deep part of the pan so that the surface of the water extends about half the length of the pan.

3. Holding the board across the pan and in the water at the deep end, gently move it back and forth to generate waves in the water. The waves should lap a few inches up the beach. Continue making waves for 2-3 minutes, or until the beach is sufficiently eroded to show a slight drop off at the edge of the wave zone.

4. Ask the students to explain why the shore is carved this way. (The water carried grains of sand into the deeper part - this process is both erosional and depositional. The wave action erodes the sand from the upper part of the beach and deposits it farther down, resulting in a flat terrace with a steeply sloping bank.)

5. Ask them where they have seen features like this (answers will vary). Ask them to look for examples of it as they travel around the valley.

6. Explain to the students how the changing levels of Lake Bonneville left benches or different elevations. Use photographs, topographic maps, or diagrams to enable students to locate the benches. The amount of detail will depend on the ages of the children.

Adaptions/Extensions:

1. Before doing the activity, put a hole in the bottom of the paint roller pan and block it with a cork or a piece of clay. After making the first bench, drain some of the water to indicate the lake level after the Bonneville flood, and repeat the terrace making. This demonstrates the Provo level bench.

2. Use a natural sand gathered locally (such as from a sand and gravel operation). Don't sift the sand before doing the activity. Now, as the students create the benches, they will be able to observe particle size sorting. The smallest particles will be transported farthest, and the largest will move the least.

3. Take the students to an area where the terraces can be clearly seen. This may be along the Wasatch Range or at a place such as Antelope Island in the Great Salt Lake. Have them sketch the view and identify the various benches.

# Sink or Float?

---

## A Science Lesson

Written by Patricia Anderson, reprinted by permission of the Utah Museum of Natural History

Grades: Upper Elementary through secondary

Objectives:

1. Students will explain the relationship between density and buoyancy
2. Students will explain the relationship between salinity and buoyancy

Materials:

- \*2 wide-mouth pint jars
- \*raw egg
- \*large serving spoon or salad tongs
- \*1/2 cup salt
- \*measuring cup
- \*water
- \*masking tape
- \*felt tip pen (not water soluble)
- \*Sink or Float Worksheet

Background:

**Density** is a measurement of the quantity (weight) of matter contained in a given volume of space. It is usually expressed as grams per cubic centimeter. The density of pure water is one gram per cubic centimeter. If salt is dissolved in the water, the volume of water does not change, but the density of the solution increased because the density of salt is much greater than that of water. If gas is dissolved in water, the density of the water may decrease because the density of the gas is less than that of the water. Therefore, the density of a given volume of water is a result of the total amount of dissolved salts and gases, and the temperature of the water.

**Buoyancy** is a function of density. Buoyancy is the ability for an object to be lifted up, or to float, because of the greater density of the water. The greater the density of the water in comparison to the density of the floating object, the higher the object will float. A hydrometer uses this principle to measure water densities. The density of the water in the Great Salt Lake is high because of the high concentrations of dissolved minerals. These minerals were dissolved from rocks and soil, and are carried into the lake by streams. Because the lake has no outlet, the dissolved minerals in the lake are concentrated as water evaporates from the lake. This gives the lake its famous “float like a cork” quality.

Activity:

1. Review with the students why some objects float and others sink. Ask them if they think they would float more easily in the Great Salt Lake or in a freshwater lake. Why?
2. Tell them they are going to conduct an experiment to determine the effect salt water has on buoyancy (the ability to float).
3. Hand out a “Sink or Float” worksheet to each student, and divide the class into small groups. Give each group a set of materials and tell them to follow the directions on the worksheet.

4. After the students have had time to complete the experiments, reconvene as a class and discuss the results.

Discussion Questions:

1. Why did the egg float in salt water but not in fresh water? (the salt water was denser, therefore the salt water had more buoyancy on the egg)

2. Which other objects floated in salt water, but not in fresh water? How does the shape of an object affect its ability to float?

## Sink or Float Worksheet

Name \_\_\_\_\_

- A.
1. With the masking tape and a felt tip pen, label one jar “fresh” water, and the other jar “Great Salt Lake” water.
  2. Measure 1-1/2 cups of water into each jar. Measure 1/2 cup of salt and put it into the jar labeled “Great Salt Lake.” Stir to completely dissolve all the salt.
  3. Use the tongs or the spoon to lower the egg carefully into the fresh water. What happens to the egg?

---

---

---

4. Use the spoon or tongs to remove the egg. Now, carefully lower it into the Great Salt Lake water. What happens to the egg?

---

---

---

5. What does this experiment show?

---

---

---

- B. Experiment with some small objects to find some that sink in fresh water, but float in the Great Salt Lake water. List the objects and tell what happened when you put them in fresh and salt water.

# Notes

# Notes

# Notes