



Lesson Title: Earthworks: The Combination of Art and Nature

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Grade Level: All Middle School and Elementary School Sciences

Type of Lesson: STEM, Art

Objectives: 1) Learn about the Earthworks art movement, 2) Use observation skills to find art in nature, 3) Create an Earthworks art piece that describes a scientific concept or theory, and 4) Understand that scientists need to communicate with non-scientists and science can be communicated through art.

Background Information: I like to use this lesson at the end of the year as a little bit of review for students. The students then have a full year's of science to draw from as inspiration for their art piece. Also, it gets students outside when they are squirmy at the end of the semester.

References:

Alba the Rabbit

<http://www.ekac.org/gfpbunny.html#gfpbunnyanchor>

Earthworks Movement

http://joshuasiegal.org/mfa/earthworks_report.pdf

http://en.wikipedia.org/wiki/Land_art

Earthworks pieces

<http://westvancouver.ca/Level2.aspx?id=33664>

http://www.rwc.uc.edu/artcomm/web/w2005_2006/maria_Goldsworthy/TEST/index.html

<http://boingboing.net/2008/01/30/spiral-jetty-monumen.html>

http://flatrock.org.nz/topics/intellect_and_entertain/pink_water_white_salt_black_rock.htm

<http://aloneone.wordpress.com/2008/09/24/andy-goldsworthy/>

<http://zero1blog.com/?p=598>

http://jonathans-examined-life.blogspot.com/2009_05_01_archive.html

<http://www.cloudyreason.com/blog-posts/we-love-land-art.html>

<http://www.micheldavo.com/land-art-01/land-art-01-04.html>

Lesson Vocabulary: Earthworks (Land art, Earth art), ephemeral, erosion, decomposition

Materials Required:

Slide show or pictures of example artwork

Digital camera with the capability to download and print the pictures

A 3x5 note card for each group

Preparation: 1) Create opening presentation about Earthworks, 2) Make sure camera is in working order (enough memory, battery charged), and 3) Find an outdoor location with enough variability in landscape that the students can spread out and find different environments in which to create their works of art.

Safety Information: Be aware of the weather and warn the students to bring appropriate clothing.

Engagement: Show students the picture of Alba, the fluorescent rabbit.



Art and science have been crossing paths for centuries. In this case an artist created a living art piece that sparked a conversation between artists, scientists, philosophers, and the general public about the implications of genetic engineering. We can teach about science through art, we can talk about science through art and we can create art through science. Can you think of any examples where art and science have been combined? Let students brainstorm for a few minutes. They can also think about literature, poetry, or movies and plays that have incorporated science into them.

Exploration: Today, we will talk about a very specific art form called Earthworks. Earthworks (Land art, Earth art) is an art movement which began in the late 1960's where the landscape and the artwork is intertwined. The artist uses natural materials such as stones, twigs, feathers, water, leaves, trees, bedrock, and the land to create a piece of artwork.



Some artists also incorporate manmade materials such as concrete, metal, and asphalt into the art piece. The art can range in size from incredibly large, for which the artist uses bulldozers and dynamite to create, or very small.



In 1970, the "Spiral Jetty" was created in the Great Salt Lake by Robert Smithson.

The artist used black basalt rocks and earth from the surrounding area to create a 1,500 feet long coil. The line of earth is 15 feet wide. The look of the jetty changes with the rise and fall of the surface water, which sometimes covers the art piece.

For Earthworks, the sculpture is not set outside but the landscape is the base of the sculpture. Often change over time is incorporated into the art piece. The art piece may change as erosion (the process by which the surface of the earth is worn away by the action of water, glaciers, winds, waves, etc.) or decomposition (the physical breakdown of organic matter or the chemical break down of organic matter by bacteria, fungi, etc.) occurs. This means most Earthworks are ephemeral (lasting for only a short time, transitory, short-lived).



By Andy Goldworthy, These are only captured in photography.

A number of famous Earthworks use shadows and reflections as part of their art.



The students' assignment is three fold.

- 1) In groups of two or individually, they need to create an Earthworks piece of art that they will share with the class. These will be created outside.
- 2) The art piece should be inspired by a scientific idea, theory, or fact they have learned in school. (This can be expanded to include human and nature interaction or environmental themes.)
- 3) The art piece should also have a title.

Once outside, the students should practice finding art in nature. You can choose one or both of the exercises. Give the students a defined area in which to range and a meeting place for after the exercise. A whistle is handy to bring the students back together.

- 1) **A New View:** Have the students look at the natural world from a different angle. Examples- Upside-down on their backs, from a lofty height. Have them share with a friend or the group patterns, colors, etc. that they have never noticed before.
- 2) **Lilliputians' Point of View:** Have the students look very closely at the plants, rocks, etc that they would normally walk past very quickly. This may involve getting down on their hands and knees. Have them share with a friend or the group patterns, colors, textures, etc. that they have never noticed before.

At this point the groups should spread out and start brainstorming and building their project. This can take anywhere from 10-40 minutes depending on the age of the class and the class' love of art.

Explanation: When the art pieces are complete, each group will describe their art piece including their scientific theme and their title. The teacher should take a digital picture of the piece and the artist(s).

Inside (possibly the next day), the pictures can be printed out from the digital camera and displayed. The students can fill out a notecard with the scientific theme, title, and artist's names and it can be posted next to the art piece.

Evaluation: Ask the students why is it important for scientists to explain scientific ideas to non-scientists. (Answer: Many things that scientists discover, like how to keep our water clean or how to save energy, affect every single human being, and if scientists only talk to other scientists or don't know how to tell others about their ideas, we will not know how to keep our water clean or save energy.)

Can they think of examples of when scientists interact with the public? (Answer: Climate change, weather, earthquakes, tsunamis, volcanoes, inventors such as those that make the energy efficient cars and their iPhones, to name a few).

Do the students think they could teach someone who had never learned about their "scientific theme" about science through their art piece? (Hopefully, because the take home message is "science can be communicated through art". Scientists can use many forms of communication to teach about science including art, literature, poetry, and the theater or movies.)

Wrap-up: If there is time, it is also interesting to visit the art pieces a week after the lesson is completed and see how the art pieces have faired. It drives home the ephemeral quality of the artwork.