

GRADE 7

GSI
Geo Scene Investigation!

POST-VISIT LESSON

The Story in Art

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Geo Scene Investigation!

POST-VISIT OVERVIEW

The following post-visit activity is designed to synthesize and expand the knowledge students have gained in their Forever Earth experience. Students will demonstrate, with a visual creation, their understanding of at least five major components of the land and land forms that are part of the Lake Mead National Recreation Area.

THEME

The landscape reveals its story in the features and formations you see today.

KEY QUESTIONS

What geologic forces and processes created the landscape in Lake Mead National Recreation Area? What forces and processes are still at work today?

GOAL

Students will demonstrate understanding of the geologic forces and processes that created the landscape in Lake Mead National Recreation Area and the forces and processes that continue impact and shape today's landscape.

OBJECTIVE

Through a visual creation, students will demonstrate their understanding of at least five major components of the land and land forms that are part of the Lake Mead National Recreation Area.

NEVADA STATE STANDARDS CORRELATION

- E.8.C.1.** Student knows sedimentary rocks and fossils provide evidence for changing environments and the constancy of geologic processes.
- E.8.C.2.** Student knows rocks at Earth's surface weather, forming sediments that are buried, then compacted, heated and often recrystallized into new rock.
- E.8.C.5.** Student knows how geologic processes account for state and regional topography.

CLARK COUNTY SCHOOL DISTRICT OBJECTIVES (GRADE 7)

Students will:

- distinguish between sedimentary, igneous, and metamorphic rocks.

- describe how water can exert forces (physical weathering) on landforms.
- describe how landforms are the result of a combination of constructive and destructive processes.
- model erosion and deposition.
- describe how water, wind, (glaciers,) and gravity contribute to erosion.

SNAP CONSERVATION EDUCATION AND INTERPRETATION THEME CORRELATIONS

The on-site grade 7 activities support the following theme statement developed by Clark County-based educators:

- Sub theme 2. We share the intriguing stories of Southern Nevada’s diverse, interconnected natural world.

This sub theme is derived from the guiding theme statement: Increasing human activity on highly sensitive and easily damaged lands has profoundly altered the natural environment of Southern Nevada, affecting native biota including threatened and endangered species and requiring active management of native and non-native species.

PREREQUISITE EXPERIENCES

- Pre-visit classroom lessons
- Forever Earth field trip

VOCABULARY

- | | | |
|--------------------------|------------------|--------------|
| • constructive processes | • lava flow | • tilting |
| • cross-bedding | • mass wasting | • wash |
| • destructive processes | • metamorphic | • weathering |
| • erosion | • relative aging | |
| • igneous | • sedimentary | |

POST-VISIT LESSON: The Story in Art

Part 1 ▶ Introduction and Review

PREVIEW/REVIEW:

Students respond to the following in their journal: *List five geological features or processes that you were able to observe while on the Forever Earth field trip. To the best of your ability, describe in words what each of those features looked like. Include color, texture, shape, size, etc. in your description.*

The teacher facilitates a round-robin student discussion about geological process, land forms, rock types, and Lake Mead geology that they have been studying. General questions, pre-printed on strips, are drawn at random. Additional follow-up questions regarding photographed sites are asked as appropriate. Sample questions:

- How can you distinguish metamorphic, igneous, sedimentary rocks based on appearance?
- How do metamorphic rocks form?
- How do igneous rocks form?
- How do sedimentary rocks form?
- Where in the Lake Mead NRA might you find each type of rock?
- What is an example of chemical weathering that you saw at Lake Mead NRA, and how do you know it is chemical weathering?
- What is an example of physical weathering that you saw at Lake Mead NRA, and how do you know it is physical weathering?
- How do wave-cut terraces form?
- Describe an example of “tilting” that you saw at Lake Mead NRA.
- What geologic features do you recall from the mapping activity were actually observed at Lake Mead NRA?
- Other questions as appropriate based on your classroom experiences on the Forever Earth Field trip.

Students use their student notebooks, pre-visit materials, and any photos taken during the field trip to answer and discuss the above. Encourage use of vocabulary developed during the pre-trip and field trip experiences.

Existing photos of Lake Mead NRA geology that may also be used to facilitate discussion are available at the following sites:

TIME 30 minutes

MATERIALS

student journals
journal questions written on the board

computer and LCD projector
Completed pre-visit projects, student notebooks, and projected photos (of geology) taken during the field trip (or existing photos of Lake Mead geology), questions printed on strips of paper

A virtual geology field trip:
<http://geology.wr.usgs.gov/docs/usgsnps/lmnra/index.html>

Lake Mead photos on the NPS Website:
www.nps.gov/lame/photos.html

Part 2 ▶ Concept Development

1. Students review their journal responses (from Part 1) and choose at least five features that they observed and learned about during their Forever Earth field trip. Students may wish to refer back to the projected and printed photos from their trip.

2. Students are each given one “pie piece” (see **Student Worksheet: Pie Piece Template**). The template sheet contains two pie pieces, so the sheet will have to be cut in half. Students will cut out the shape AFTER they do their art work on it.

3. Have students illustrate the five (or more) features they selected. Each feature should be named, and the illustrations should be representative of the actual feature. See **Teacher Reference: Sample Illustration**. Note that the sample is in black and white, but that students should do their artwork using color.

Students should really think about the features that they choose before they begin to illustrate them because they will need to explain and justify their visual interpretations.

Part 3 ▶ Concept Development

Students share their finished work with at least three other students, explaining each component of their pie piece and why they chose to illustrate it the way they did. Students initial the backs of the pieces they review.

Part 4 ▶ Presentation of Findings and Closure

Students cut out and assemble their pieces to form circles, using tape. Eight pie pieces joined in a circle will produce a 40 cm artwork that will remind the class of what they learned during the Forever Earth field trip. The teacher posts the circles in the classroom or in the hall way for others to see.

TIME 30-60 minutes

MATERIALS

Student Worksheet: Pie Piece Template (cut in half)

Teacher Reference: Sample Illustration

art supplies

TIME 15 minutes

MATERIALS

TIME 10-15 minutes

MATERIALS

tape and scissors

EXTENSIONS

Require students to include up to 10 landforms and processes. Rather than a pie piece, students could sketch a panoramic view of Lake Mead showing as many landforms and geological processes as possible. Require the students to logically place the items (for example, the lava flows can be seen on top of the mountains, wave cut terraces are seen at and just above water level, etc.).

RESOURCES

Any and all of the resources (Internet sites and print outs, books, photos, maps, photos taken at the lake) collected for the pre-visit and on-site lessons should be used in this culminating lesson.

ADAPTATIONS FOR DIVERSE LEARNERS

- Consult with Forever Earth project manager prior to field trip to discuss specific needs of the class or individuals; decide which aspects of the program content or delivery to appropriately alter for culturally/linguistically, behaviorally, and cognitively diverse learners and for the gifted and talented.
- Assign preferential seating.
- Allow students to work on the project in pairs or groups.
- Provide samples of finished products as models.
- Pre-teach critical vocabulary.
- Establish and teach rules that communicate expectations.

ASSESSMENT

It is suggested that the project not be graded on artistic ability. Rather, assess based upon completion (five geologic features included, appropriate representation of each item, finished pie piece shared with other students).