

Observing and Making Rocks

By Tara Carpenter Estrada

Grade Levels: K-6 (see adaptations in lesson for upper and lower grades)

Duration: 45-60 minutes

Materials (K-3):

- Paper for sketching
- Colored pencils, crayons, or oil pastels for drawing
- A collection of smooth river rocks for students to observe
- [Slides](#) and a way to project

Materials (4-6):

- Paper for sketching
- Colored pencils, crayons, or oil pastels for drawing
- A collection of smooth river rocks for students to observe
- Two square pieces of cloth per student, each about 4" to 6":
 - White or light plain fabric
 - Scrap fabric in any color or pattern
- Fiber Fill
- Scissors suitable for fabric
- Needles for hand-stitching (larger eyes are easier for students to thread)
- Sewing thread
- Watercolor paints
- Paint brushes
- Water cups
- Paper towels
- [Slides](#) and a way to project

Core standards:

Visual Art Standards (adaptable for each grade)

2.V.CR.1: Brainstorm multiple approaches to an art or design problem, and make art or design with various materials and tools to explore personal interests, questions, and curiosity.

5.V.C.2: Experiment with and develop skills in multiple art-making techniques and approaches through practice.

Science Standards

2.1.2: Construct an explanation about changes in Earth's surface that happen quickly or slowly. Emphasize the contrast between fast and slow changes. Examples of fast changes could include volcanic eruptions, earthquakes, or landslides. Examples of slow changes could include the erosion of mountains or the shaping of canyons.

5.1.3: Ask questions to plan and carry out investigations that provide evidence for the effects of weathering and the rate of erosion on the geosphere. Emphasize weathering and erosion by water, ice, wind, gravity, or vegetation.

5.1.4: Develop a model to describe interactions between Earth's systems including the geosphere, biosphere, hydrosphere, and/or atmosphere. Emphasize interactions between only two systems at a time. Examples could include the influence of a rainstorm in a desert, waves on a shoreline, or mountains on clouds.

Learning Goals:

- Students will closely observe a rock, looking for effects of erosion as well as colors and textures (all grades).
- Students will practice simple hand sewing techniques (grades 4-6).
- Students will create a replica of their rock with fabric (grades 4-6).

Lesson:

Steps 1-4 are designed for all grades. Steps 5-12 are appropriate for grades 4-6.

Art discussion

1. Start by looking at a large image of Janet Windsor's *Crumbling*.

Questions:

What does this look like?

What do you think it is made of?

How is this quilt different from what you would expect to see in a quilt?

2. Tell the students to look at the artwork while you read Janet Windsor's artist statement.
"As the edges of the cliffs tumble into the ocean, the sea tosses them about and returns them to us as beautiful pebbles."

What is erosion?

3. Ask the students to picture themselves as a rough rock (hold up one to illustrate) falling off a cliff into the ocean, getting banged about on the rocks below, getting washed over and over again with the water, then pulled along in strong currents, finally returning to a stream. This process is called erosion.
 - Show students the rough rock and a smooth river stone together.
 - Tell students that these rocks tell stories about what they're made of, where they are from, and what has happened to them over time. *This could be a good time to teach the difference between weathering (when weather breaks down a rock while leaving it in place) and erosion (when rocks are carried away and worn down by wind and/or water).
 - Tell students that they will get to closely observe their own eroded rock.

Drawing and Observation

4. Give each student a smooth stone to closely observe. On a piece of paper, have them sketch the shape of their rock, then fill it in with the colors and textures they observe. They could also write a list of words that describe their rock (smooth, shiny, red, etc.)

Creating a Sewn Rock (for this part of the lesson, you can refer to these [slides](#))

5. Explain to students that they will be creating a sewn rock, just like the rocks on the artwork that they saw. They will each be given a piece of plain fabric. On the fabric, they should use their watercolors to paint the colors and textures that they have observed.
6. Have the students start by tracing the shape of their rock (this should be much larger than the actual rock because it will get smaller when sewn).
7. Then, students use their watercolors to paint in the colors and textures. The water-colored fabric will need time to dry. Have students set this aside and give them another piece of scrap fabric to practice sewing with. This fabric can be pre-cut into rock shapes, or students can do this themselves.
8. Have students sew a straight stitch all around the edge of the rock shape. They should sew at least $\frac{1}{4}$ inch from the edge to avoid fraying. *Note: depending on age and ability, students may need support threading their needles and sewing in a line. This process can be simplified by pre-threading the needles for the students. Students could also practice sewing a straight stitch on a piece of paper to get the hang of it.
9. After having sewn all the way around the shape, students can gently pull on the thread to cinch the shape a little closed. *Tip: students can hold the knot between their finger and thumb while they pull to avoid having the stitch pull through the fabric.
10. Have the students insert some stuffing to their form. With some stuffing in place, they continue to pull on the thread to close off their form. They may need to alternate between pulling the thread and stuffing the fill further in.
11. When the form is fully closed, have students make a couple of stitches across the opening to further bring the seam together. When finished, tie off the thread with a knot and cut.
12. Students can then repeat this whole process with their water-colored fabric to create a finished rock that resembles the one they have been observing.

Extensions/Modifications:

Other types of rocks: Students could be challenged to create rocks that are not smooth. By using crumpled paper, wire, or other types of 3-D materials inside the rock, students could create rocks that look less eroded.

Collaborative artwork: All of the students' rocks could be hot glued onto a larger work that pays homage to Janet Windsor's artwork.

Alternate attachment: Rocks could also be formed using a hot glue gun. With adult support, this could be a helpful adaptation for students who struggle with fine motor skills.