Real Fake Rocks

Submitted by: Dr. Barb Mieras

Grade Level: 4-8

Subject(s): Science/Geology

Duration: 3-4 days

Description: This activity can be place under the category of GeoArt. GeoArt is based on the premise that by looking with both artistic and scientific eyes, people develop deeper and more personal geologic understandings. GeoArt programs use artistic approaches to promotecritical thinking about geology and geologic processes.

Goal: Creating a rock has an almost magical motivational effect on people. And it's a great activity for illustrating that geology and art are linked by the importance of observation and interpretation — and by the role personal experience plays in each. Participants quickly become engaged in trying to make their rock look real, and the work of creating an eye-fooling rock leads almost seamlessly to an interest in understanding the geologic significance of rock attributes such as color, pattern, texture and form. The rock-building process sharpens participant's powers of observation and nudges them to compare their observations against a range of interpretations.

As participants begin their projects, their choices of shapes, color, and other rock features reflect their own experience with rocks in the real world. As they progress, they begin to understand on an experiential level the significance of differences in the rock characteristics such as crystals or grains, bedding, angularity, sorting and so on. Even the youngest participants begin to recognize some of the characteristics that distinguish igneous, sedimentary, and metamorphic rocks as they try to replicate them in their own work.

In addition, creating a rock produces "lithologic ownership" in almost all participants of any age. Once you've made a rock, it becomes your rock, and you recognize it when you see it out there in the real world. That's exciting! This personal attachment generates self-motivated learning, the kind that builds personally owned knowledge. And that self-constructed knowledge in the sort that becomes a lasting part of a person's framework for learning — a part of the structure within which an individual assesses new experiences and new information.

Edited by Glenda Robinson

Materials

- ✓ sheets of newspaper (one or two single-page sheets per rock)*
- ✓ newspaper strips about ¾ of an inch wide and half a news-sheet long
- ✓ white tissue paper (one or two sheets per rock)

* (Bigger rocks take too long to dry for most class projects but are certainly feasible; in fact, if you want to make really big rocks, reinforce them internally with hangers, wood slats, or chicken wire; you can also build in display pockets and shelves reinforced with foam-core, thick cardboard, thin wood or plastic.)

- masking tape (about 3/4 of an inch wide)
- regular multi-purpose white glue diluted with water (exact proportions not critical; 1 part glue to 8 parts water is sticky enough to do the job, but little ones will find 1 part glue to 3 or 4 parts water easier to work with)
- stirring sticks to mix the glue
- pans for glue mixture
- acrylic paint in "rock colors" (charcoal gray, reddish-brown, cream or white, pinkish, etc.)
- plastic cups for mixing paint colors or for diluting paint with water
- pieces of sponge for painting with; brushes optional
- flecked spray paint ("granite" paint) in dark and light varieties (from hardware, art/craft stores)
- clear matte acrylic spray or water-resistant surface protectant (optional)
- trays or newspaper or plastic for protection of work surface
- smocks or paint shirts for the little folks

Procedure

1. Sit down or lie down. Close your eyes. Picture a rock — your very own, very cool, very geologic rock. Look at it from all sides (bottom, too). Find out what color it is and how big it is. Look at its patterns. See if it's smooth or lumpy, rounded or sharp. Is that the kind of rock you're going to make, or are you going to make it a surprise?
2. Squish of a sheet or two of newspaper to make the basic shape of you rock (ball, lump, disc, etc.) Rocks that have ridges, lumps, or hollows will look most "real" in the end. The shape doesn't have to be exact yet; you'll modify it by adding newspaper strips and tissue paper. (Fig. 1)
3. Apply just a few pieces of masking tape to hold the shape together (don't cover the whole rock).
4. Pull a newspaper strip through the glue/water mixture to wet both sides. Run it lightly between your fingers to remove excess liquid (that's important so the rock will dry quickly).
5. Wrap the damp strip around the taped newspaper "rock" and smooth down the edges.
6. Keep repeating steps 3 and 4, one newspaper strip at a time, until the entire rock is covered. The rock will be stronger if you criss-cross the strips as you go. (Fig. 2)
7. Let the rock dry. This will take all day and probably overnight. Turning the rock over at least once will help it dry more quickly. (Once the rock is completely dry, you can

strengthen it by adding another layer of water-and-glue-dipped newspaper strips, but then you'll need to let it dry all over again. If you don't have time for that, go directly to step 8.)

8. Wrap a sheet of tissue paper around the dry rock; cut or tear off any big "extra" pieces of tissue. (If you're in a bind for time, you can apply the tissue wet, but it's harder to handle the tissue, and the rock will have a less "solid" feel when it dries). (Fig. 3)
9. Dip a piece of sponge in glue-water mixture. Squeeze it out until it's just damp, then gently dab the tissue paper until it flattens and sticks to the rock. (Fig. 4) The tissue will crease and make little wrinkles and ridges; that's good! ... it will look like rock texture later on. Once you have the rock covered, you can add small pieces of tissue to fill in places you missed or to cover spots you don't like. If you get the tissue too wet it will tear or roll. If that happens, peel the torn part off and/or add another little piece of tissue on top until you're satisfied with the way it looks.
10. Let the rock dry again; it will probably take all day or overnight.
11. Choose one "background" color to paint your rock. Choosing between dark gray, reddish-brown, and cream can lead to just about any final appearance you want. You can dilute the paint with a little water, but don't make it too thin to cover well. Gently dab the paint on with a piece of sponge. Too much rubbing or brushing will damage the rock surface, and the less wet your rock ends up, the faster it will dry.
12. Let the rock dry again, probably all day; some will take overnight.
13. Final decoration options are endless. You can go directly to the granite/sandstone spray paint for a "fine-grained" look, or you can dab other colors onto you background. You can make "crystals" or "grains" with sharp color boundaries. Get a "gneiss" look by overlapping colors and rubbing them together at their edges. Make "layers" by lightly brushing a contrasting color over the background with a nearly dry sponge. "Lichen" can be added with a small paint brush. If you need inspiration, look at some rocks! Once you're done with all your painting, you can (if you want) add a very light spray of granite and/or sandstone paint on top for additional texturing. (Note: For almost all "looks", you need VERY little fleck paint; it's easy to get too much. Hold the can at least a couple of feet away from the rock and use a sweeping motion while spraying. Experiment on the bottom of the rock to see how to get the effect you want, and do the spraying for younger kids — they can tell you where to paint & when to stop.)
14. Let the rock dry. The spray paint dries quickly, but let it sit all day to give the finish maximum durability.
15. You can add a coat of clear matte acrylic spray or water-resistant protectant the next day if you want to. "It makes the rock look glossy." Test it on the bottom first to see if you like the way it looks.
16. Voila! You've got your very own Real Fake Rock.

Fig. 1

Fig. 2

Fig. 3

Fig. 4