

K-12 IYS Activity



Summary

Soils come in many colors that add beauty to the natural world around us, and this colorful array of soils can even be used to create paints and beautiful paintings.

Learning Objective

To discover the beauty in the variety of colored soils found in the world

Materials (per student, group etc.)

- Different colored soil samples (air dried)
- Hammer or mallet
- Mortar and pestle
- Paper or paper plates
- Paper cups (4 oz.)
- Knee-high nylon stockings
- Pencils
- Black ink pens
- Paint brushes (different kinds and sizes)
- Artist acrylic (clear gloss medium) or Elmer's glue
- Sponges and rags
- Watercolor paper
- Masking tape

Paint with Soil!

Ages of Audience

Any

Recommended group size?

Less than 20

Where could you offer this?

Local school, Library, Club

What type of room do you need?

Desks, tables, or easels

Type of Lesson

Hands-on

Time Needed

1. Scientist prep time + clean up time: time to prepare or order the soil pigments
2. Participant/class time: 1-2 hours

Methods/Procedures

FOR THE SOILS

1. Collect soil samples in a variety of colors. Soils can be found that are brown, black, red, orange, yellow, grey, even blue or green. Air dry on aluminum foil or paper plates.
2. Place dried soil on a piece of paper or paper plate and crush with a hammer or mallet.
3. Place some of the crushed soil into a mortar. Use the pestle to further crush the soil into a fine powder.
4. Repeat to crush all of the different colored soils.
5. Sieve the soils. Place the powdered soil in a paper cup. Wrap a knee-high stocking over the top two or three times. Turn the cup upside down over a piece of paper or paper plate and gently shake out finely powdered soil.
6. Store the different soils in paper cups—notice the colors and textures.

FOR THE PAINTING

1. Lightly sketch a drawing on watercolor paper with a pencil. Then trace the lines with ink for permanent lines.
2. Use masking tape to carefully tape the edges of the paper to the table or easel. This will allow the artwork to dry flat.
3. Pour a small amount of artist acrylic or Elmer's glue in small paper cups. Add a small amount of finely powdered soil to the acrylic. You may also want to add a few drops of water to the soil mix.
4. Experiment with the depth of color by adding more or less soil and create new colors by mixing different soils.
5. Use different sizes and kinds of paint brushes, sponges, or rags to apply the soil paint to your "canvas." Experiment and have fun.
6. When your artwork is dry, you may want to apply another layer of soil paint.
7. You can also use a black ink pen to make finishing touches on your artwork.

Discussion Questions

- What causes this variety of colors in soils?
ANSWER: *Soils with high amounts of organic matter are darker, even black. Soils with high amounts of lime are white. Red or orange soils have lots of iron. Soils with a green tinge have higher amounts of copper. Yellow soils usually come from sandstone.*
- How do soil scientists talk about soil colors?
ANSWER: *The Munsell Soil Color book contains soil color charts used by scientists across the world. The color information is based on a soil classification system used to describe soils. Soil samples are compared with the colors in the charts and given a specific color name.*

continued...

Celebrating the



2015

International
Year of Soils

soils.org/IYS

Paint with Soil!

References

Adapted from a Natural Resources Conservation Service educational activity, *Painting with Soil*.

Additional Resources

1. A soil color matching game is available at the Smithsonian's National Museum of Natural History Forces of Change website:
http://forces.si.edu/soils/02_02_03.html
2. Jan Lang, an NRCS technician, has painted a series of canvases portraying the Lewis and Clark expedition. See these images at
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054282
3. A soil painting tutorial video is available on YouTube:
<https://www.youtube.com/watch?v=vffYSbnlnLU>
4. The Utah Agriculture in the Classroom program sells soil painting kits with five prepared colored soils for \$20:
<https://utah.agclassroom.org/cart/Details.cfm?ProdID=458&category=0>