

Making a Coil Pot



STANDARD COURSE OF STUDY CORRELATIONS:

Science, Grade 6, Goal 3: The learner will build an understanding of the geological cycles, forces, processes, and agents which shape the lithosphere.

3.05 Analyze soil properties that can be observed and measured to predict soil quality including: Color, Infiltration, Structure, Consistency, Texture, Particle Size, Soil Moisture.

3.06 Evaluate ways in which human activities have affected Earth's pedosphere and the measures taken to control the impact: Vegetative Cover, Agriculture, Land Use.

INTRODUCTION TO LESSON: Students will create a circle map to organize what they know about pottery. They will then do a hands-on investigation of soil samples to learn about soil characteristics. Finally, they will make a small coil pot out of clay.

MATERIALS

- ✂ Sample of finished pottery
- ✂ Chart paper
- ✂ Markers
- ✂ Sand, silt and clay samples
- ✂ Hand lenses, one per group of four
- ✂ Newspaper for work surfaces
- ✂ Bucket and small containers to hold water
- ✂ Paper towels
- ✂ Workable clay
- ✂ Small sponges
- ✂ Viewing Guides, one per student

PREPARATION

- ✂ Obtain samples of workable clay (from the ground, a commercial supplier or a local potter).
- ✂ Find a local potter, pottery shop or pottery school that is willing to fire the finished pots the students make.
- ✂ Become familiar with the techniques for making a coil pot so that you can demonstrate for students (see <http://artswork.asu.edu/arts/students/navajo/lesson4.htm> or <http://www.jh-pottery.com/tutorial/coil.htm>).
- ✂ Collect samples of sand, silt and clay for soil exploration activity. In addition, you might ask students to bring soil samples from home.
- ✂ Cover work surfaces with newspaper.
- ✂ Fill buckets of water for pre-washing hands and provide access to a sink.
- ✂ Fill small containers of water for students to use in soil experiments and pottery activity.

BACKGROUND FOR TEACHER: The pottery heritage in North Carolina is very rich due to the availability of clay. Few places on Earth have more clay or more types of clay than North Carolina. Clay veins run through the ground in many parts of the state. It was formed in the mountains by the weathering of rock formations. Clay is washed to the coastal plain region, where it is precipitated out of water.

Helpful Vocabulary:

Clay—A fine-grained, firm, earthy material that is plastic when wet and hardens when heated, consisting primarily of hydrated silicates of aluminum. Clay comprises a family of minerals known as sheet silicates. Clay particles are 1/50th the size of a grain of sand and less than 1/13,000th of an inch.

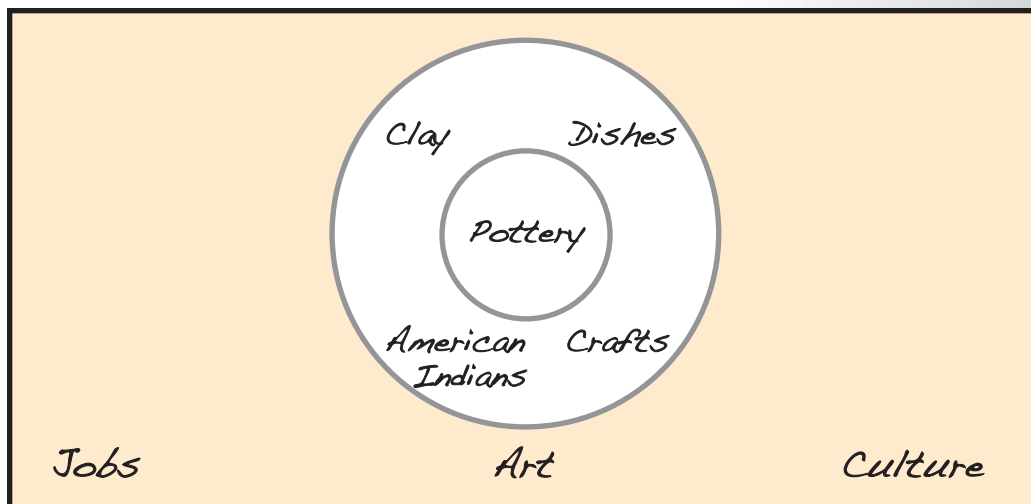
Stoneware—Natural clay or blend of clays that is fired above 2100 degrees F. It differs from porcelain principally in color, being gray, tan or reddish, and having a larger “grain.”

Earthenware—Ceramic ware made of slightly porous, opaque clay that is fired at low heat.

engage >

- Display a piece of pottery and give students time to examine it.
- Divide class into groups of four and hand out chart paper and markers for making a circle map. Show them a sample map and then ask them to draw one of their own. In a small circle in the middle, have them write the title “Pottery.”
- Allow five to 10 minutes for students to brainstorm the topic of pottery. Ask them to write their thoughts about pottery (raw materials, uses, history, etc.) in an outer circle. Next they should draw a frame around both circles and write answers to the question “Why is pottery important to North Carolina?” in the rectangle.
- Have students share their thoughts about pottery. Make a class circle map that combines all their ideas.

Circle Map



explore >

- Have students remain in their groups of four. Hand out soil samples (each group should have a sample of sand, silt and clay), water containers, paper towels and hand lenses.
- Encourage students to carefully examine the samples by handling them and inspecting them with hand lenses. Have them write down the characteristics they notice (e.g., color, texture, particle size).
- Once they have had time to explore thoroughly, instruct them to add small amounts of water to each sample so that it is moist but not wet. They should roll each sample in the palm of the hand and between the thumb and index finger. Their objective is to find out which moistened samples can be rolled into a "snake." Have them note which samples crumble when bent and which ones don't. Ask them how they can identify the type of soil they are working with based on the characteristics they observed in the experiment. (*Sand will not roll into a snake. Silt rolls into a snake but falls apart when bent. Clay rolls easily into a snake and does not fall apart when bent.*) Ask them what they noticed about soil particles using their hand lenses.

Optional: If students brought soil samples from home, ask them to examine them using the techniques they learned and decide whether the soil most resembles sand, silt or clay.

- Have students clean their hands and work areas. They should remove as much soil from their hands as possible in a bucket of water before lathering up at the sink.

explain > Show the video and have students answer Viewing Guide questions. Discuss the basic principles of pottery making.

elaborate > Demonstrate the technique for making a coil pot. Hand out clay, giving each student a piece about the size of a tennis ball. Have water available for wetting hands, as needed. Have students roll clay between hands to make slender ropes. These are to be wrapped in the shape of a vessel, beginning with the building of a base. To make larger pots, they may join together additional coils. Instruct students to smooth out the inner and outer surface of the vessel with their fingers or sponges. Allow pots to dry for several days. Have them fired at a local kiln, if possible.

evaluate > To gauge comprehension, have students discuss their experiences exploring soil and making pottery.

**BEYOND THE CLASSROOM**

Visit a potter to view pottery-making techniques.

Additional Resources:

Turners and Burners: The Folk Potters of North Carolina.

Zug, Charles G., III. 1986.

Chapel Hill, N.C.: UNC Press.

The Potter's Eye: Art and Tradition in North Carolina Pottery. Hewitt, Mark and Nancy Sweezy. 2005. Chapel Hill, N.C.: UNC Press.

The Mint Museum Pottery Book List • <http://www.mintmuseum.org/potterybooks.html>

Description of Catawba Valley Pottery • <http://www.drexelantiques.com/catawbavalleypottery.html>

The History of Jugtown Pottery • <http://www.jugtownware.com/history.htm> • http://www.benowenpottery.com/index.php?option=com_content&task=view&id=30&Itemid=41

Soil Sleuths Teacher Guide: K-6 • www.geaugaswcd.com/pdfs/Pre_Post_WEB/ssprepost.pdf

