

Playdough Core Sampling

North Dakota Lignite Geology, Mining and Reclamation

Description

Go back in time - way, way, way back! In this activity, students will learn how sedimentary layers of rock were deposited millions of years ago, leading to coal formation. After creating a model of sedimentary rock layers with playdough in Part 1 of the activity, students will fast forward to the present. In the present day, they'll work as a core sampler to learn just where that coal from the past is hidden underground. [View the online activity here.](#)

There are two versions of this activity. Version A is designed for elementary students. Version B is designed for middle and high school students and includes calculations on the value of coal.

Grade Levels

Version A: 2nd - 5th grades

Version B: 6th - 12th grades

Subjects

Science & Math

Supplies

The list below is for a class of 26 students, broken into pairs.

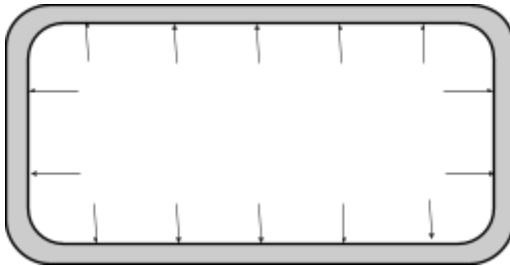
Supplies	Quantity	Notes
Playdough, Color 1	7 containers	4 oz containers (black if possible)
Playdough, Color 2	7 containers	4 oz containers
Playdough, Color 3	7 containers	4 oz containers
Playdough, Color 4	7 containers	4 oz containers
Playdough, Color 5	7 containers	4 oz containers
Foil mini-loaf pan	13 pans	6" x 3.5" x 2"
Clear drinking straws	50 straws	If clear straws aren't available in stores, check with local restaurants.
Toothpicks	13 toothpicks	
Masking tape	1 roll	Used to label the foil pans in Part 1
Cling wrap	1 box	Used to cover foil pans if the activity is broken over multiple days.
Coloring utensils	5 per group	Use colors to match the playdough colors
Scissors	13 pairs	1 pair per group

Activity Prep: Part 1

- Make 1 copy of the student handout per group. Version A is for elementary students. Version B is for high school students.
- Break students into groups. Two students per group is preferred if possible.
- Preview the activity at learn.lignite.com/trainings/playdough-core-sampling.
- If completing the activity as a class, set up a computer and projector.
- If students are completing the activity on individual devices, post the link to the activity for easy access (Google Classroom, class webpage, etc).
- Split the playdough from each container in half.
- Set out the following supplies for Part 1 of the activity:
 - Foil pan (1 per group)
 - 5 colors of playdough (half container of each color per group)
 - 1 strip masking tape

Activity Prep: Part 2

- Make 1 copy of the student handout per group. Version A is for elementary students. Version B is for high school students.
- With a permanent marker, mark off the sample grid for each foil pan on the pan rim. To match the handout, each foil pan will need 6 columns and 3 rows with a mark at each of the arrows in the illustration.



- Each group will need a different foil pan than the one they created.
- Set out the following supplies for Part 2 of the activity:
 - Foil pans with playdough layers
 - Clear straws
 - Coloring utensils
 - Scissors
 - Toothpicks
 - Printed handout

Other Information

- Allergy Alert - this activity may not be suitable for students with wheat allergies.
- If needed, Part 1 and Part 2 can be completed in separate class periods. Cover the foil pans with cling wrap between class periods.
- As shown in the course video, core samples are easiest to remove from the playdough layers if the student presses a finger onto the bottom of the pan below the straw and gently twists while pulling up.
- If the suggested size of foil pan can't be found, a smaller size will work better than a larger pan.