



Edible Soil



Purpose: Students will create an tasty treat that resembles the different layers of soil.

Background: Soil conservation is a valuable part of Florida’s agricultural industry. When scientists study soil, they look at a soil profile. This profile aligns vertically and consists of different layers – recognized as soil horizons. Soil horizons provide valuable information by presenting evidence for a variety of geological, biological, and weather-related activities that occurred throughout the earth’s history and how the formation of a specific soil was created for a particular region.

Florida Soil Facts:

- Florida’s state soil is Myakka Fine Sand. It is only found in the state of Florida covering more than one-and-a-half million acres. Myakka comes from the Native American word meaning “Big Waters”.
- The Panhandle has significant amounts of clay. Most soils in North and Central Florida are very sandy. South Florida consists primarily of limestone bedrock and clay. The Everglades is unique with very fertile soil.
- Sandy soils tend to drain quickly while clay does not drain as well.

Materials: 1 clear plastic 9 oz cup per student, spoons (measuring spoons: 2 Tbsp, serving spoons: for step 5 of the activity, eating spoons), 3 (5.9 oz) Packages of Instant Chocolate Pudding, large package of chocolate Oreos, package of butterscotch chips, package of chocolate chips, Options : gummy worms, organic layer option green coconut (using green food coloring), edible leaves (lettuce, mint, stevia, spinach, etc.), candy pumpkins, and/or seeds

Preparation Before the Lesson:

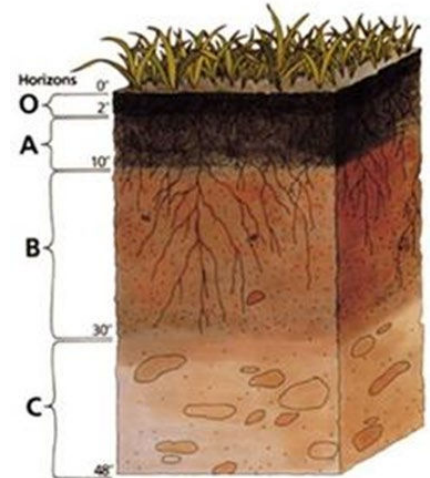
1. Mix the butterscotch chips and chocolate chips in a bowl together. Place a tablespoon with the bowl.
2. Prepare 3 packages of chocolate pudding according to the directions. Transfer pudding into a gallon sized Ziplock bag. Take out the air and seal the bag. Cut a quarter of an inch off the bottom corner of the bag.
3. Crush cookies in a food processor. The consistency should be small and uniform. Dump crushed cookies into a bowl. Place a tablespoon with the bowl.
4. Display all other edible items in bowls/plates with spoons (if needed). Set out plastic cups and eating spoons.

Activity: Prepare an assembly line for students to build their soil layers in a cup.

1. Take one cup.
2. Add a tablespoon of chips to the bottom of the cup. (Bedrock Layer)
3. Squeeze out about ½ cup of pudding from the bag. (Subsoil Layer)
4. Add 2 tablespoons of crushed cookies. Option 1: add a gummy worm. (Topsoil Layer)
5. Option 2: Decorate with a variety of edible organic material: green coconut, edible leaves, candy pumpkins, and/or seeds. (Organic or Humus)
6. Take a spoon and enjoy!

Soil Profile:

| Horizon | Layer | Description | Edible Treat Material |
|---------|------------------|--|--|
| O | Organic or Humus | Contains living and decomposing plants, animals, and microorganisms. This layer is thin and dark in color. | Green Coconut, Edible Leaves, Candy Pumpkins, and/or Seeds |
| A | Topsoil | Nutrient rich dark layer allows air & water to drain through providing a habitat for some animals, like earthworms, ants, moles, and rabbits. Many plants grow in this horizon. | Crushed Oreo Cookies (Option: add a gummy worm to this layer) |
| B | Subsoil | Lighter in color than topsoil and humus. This rich layer has minerals that have trickled from the horizons above it. | Chocolate Pudding |
| C | Bedrock | This can be made up of sedimentary, igneous, and metamorphic rock that is solid and tightly bound. Examples of bedrock may include limestone, granite, sandstone, and quartzite. Plant roots do not grow here. | Chocolate Chips and Butterscotch Chips |



Resources:

- State Soil - Florida Department of State (myflorida.com)
 - <https://dos.myflorida.com/florida-facts/florida-state-symbols/state-soil/>
- Soil as food, and a cake – CDFA's Planting Seeds Blog
 - <http://plantingseedsblog.cdfa.ca.gov/wordpress/?p=7930>
- Eco Kids (pima.gov)
 - <http://www.cleanair.pima.gov/more/FourLayersSoil.html>
- The Dirt on Central Florida Soils - UF/IFAS Extension Hernando County (ufl.edu)
 - <https://blogs.ifas.ufl.edu/hernandoco/2019/02/18/the-dirt-on-central-florida-soils/>
- Working in Your Florida Soil - Gardening Solutions - University of Florida, Institute of Food and Agricultural Sciences (ufl.edu)
 - <https://gardeningsolutions.ifas.ufl.edu/care/planting/florida-soil.html>