Recommended Book
“Dirt: The Scoop on Soil” by Natalie M. Rosinsky

Book Summary: Without soil, there would be no plants and without plants or soil, there would be no food for us to eat. This book discusses what soil is made of, the creatures that help to make soil healthy and how we all depend on healthy soil for healthy food.

Lesson Objectives
Children will:
1. Discuss the special role that soil plays in the growth of healthy plants.
2. Perform an experiment to learn about the different particles that make up soil.
3. Discover how the food we eat and water we drink started with healthy soil.
4. Practice food preparation skills and discover how the food we eat all started with soil.

Lesson Format
The day before teaching the lesson, have students help take 2-3 different 1-2 cup samples of soil in the school yard. Choose three different locations, such as a wet spot, a rocky spot and a sandy spot. Remove any plant material and pour each sample into a different jar labeled according to where it was taken. Fill the rest of the way with water, fasten the lid and shake well. Allow to settle for 24 hours.

Lesson Format
1. Read the book aloud to children.
2. Use the following questions to guide a discussion:
   a. What is soil?
   b. What is needed to make soil healthy?
   c. Why do we need healthy soil to survive?
3. As you are reading the book, you will discuss the different particles of soil and refer to the jars of soil. Ask the students if they recognize these layers in the jars of soil? Note that the heaviest/largest particles are on the bottom and the lightest/smallest particles are on the top.
4. Refer to the soil jar experiments that were prepared previously and compare each one to the picture on page 6 in the book. What differences, if any do the students observe in the 3 samples? Ask the class to try to determine which sample looks like the healthiest soil based on what you have read.
5. Ask students if they can think of any living creatures that may be found in soil and why they are important. Discuss how living creatures such as insects and worms help to break down the decaying plant and animal matter by eating it and returning it to the soil as waste or castings, in the case of worms, which is rich in nutrition for the soil.
Lesson 13 · The Scoop on Soil

Materials
• 3 quart jars with lids
• Small trowel or shovel
• Water
• Permanent marker or stickers to label the jars

Food Demo Materials
• Supplies for Edible Soil Cup
• Small zipper sandwich bags
• Plastic spoons
• Clear cups
• Edible Soil Ingredient Cards—Found in the Materials Appendix

Prep-Work
• Put 1 graham cracker square in a zipper baggy for each student.
• Make copies of the Edible Soil Ingredient Cards, found in the Materials Index.

Estimated Time:
* Completing pre-work: 45 minutes
* Completing lesson: 75 minutes
* Completing reinforcement activity: 30 minutes

Edible Soil Cups
Makes 20 sample-size portions

Ingredients (For 20 portions)
2 cups Raisins
2 cups Granola or dry cereal
20 Graham crackers
1 ½ cups Sunflower butter or peanut butter
2 cups Vanilla yogurt
1 cup Honey
1 cup Dried, sweetened coconut (optional)
2 cups Sunflower seeds or pumpkin seeds (optional)

Directions
1. Put out ingredients in the order of the list above and match to the cards provided in the Materials Appendix in an assembly line fashion.
2. Discuss each ingredient using the cues on the cards to discuss how each ingredient started with soil and how the “ingredients” in soil are being represented by the ingredients in the recipe.
3. Place a plastic spoon in each ingredient.
4. Have students line up to assemble their soil cups and have them take 1-2 spoonfuls of each item.
5. Have the students crush the graham cracker in the bag and pour it into the mixture.
6. Once the cups have been assembled and the graham cracker crumbs have been added, ask them to look at the layers that have formed in the cups and compare them to the jars.
7. Finally, have students stir the mixture as the soil would be mixed up in nature and enjoy.
READ FOR HEALTH

Dirt: The Scoop on Soil
We learned that healthy food starts with healthy soil. We observed the layers of soil and discussed what makes healthy soil and learned how healthy foods that we eat need healthy soil to grow. We prepared and tasted a healthy snack called Edible Soil Cups.

Did You Know?
All living things depend on soil to survive. Soil is the building block of life on Earth. Without soil, we would not have food or drink, clothes to wear, wood or bricks to build our houses or rubber for the tires on our cars. How can this be true? Look at the list below to see how things we take for granted every day started with healthy soil:

- Milk started with cows, which eat grass that is grown in healthy soil
- Chicken meat and eggs started with birds that ate corn that was grown in healthy soil
- Grains, such as wheat, rye or barley are grown in healthy, fertile soil before being cut and harvested
- Coffee, tea, and fruit juice all started with beans, roots, leaves or fruits grown in healthy soil
- Condiments, such as ketchup, began as tomatoes that were grown in healthy soil
- Finally the water we drink begins as rain or condensation, is filtered through the soil to remove debris and pollutants and the pumped back out for drinking

How to Get Started?
You don’t have to be a skilled farmer to grow healthy fruits and vegetables at home. Children are more likely to try new foods that they have grown, so why not grow some at home?

How to Grow Healthy Plants:
- Healthy soil
- Space to grow
- Sunlight
- Water
- Tender loving care

You don’t have to spend money on a container to grow healthy fruits and vegetables. You can recycle items you use in your home everyday such as milk containers, coffee cans, buckets and even cardboard boxes. For container gardens, it is best to use a store-bought potting mix. Select seeds, such as lettuce or spinach, which can be grown in containers. Plant according to the directions on the seed packet and watch them grow!

Take Action!
How many tips can your family check off this week?

☐ Visit www.go.umd.edu/containergardening and click on container gardening for helpful tips and videos.

☐ Choose a vegetable to grow and plant a small container garden.

☐ Shop with your child at the grocery store or local farmers market to select healthy fruits and vegetables for your meals this week.

☐ At mealtime, talk about how food began with healthy ingredients.

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