



Rocks to Radish: Understanding the Food System

Lesson Adapted by Service Member Kirsten Gerbatsch, Michigan

Theme:

Food Systems

Nature & Plant Life

Grade Level: 3-12

Subject Area: Food Systems, Social Studies

Summary:

Students will make the connection between their food sources and geology. They will make the connection between the origins of food in nature and understand the important actors and stages involved from seed to fork. Students will develop a concept of what a “food system” is.

Preparation:

Prep Time: 15 minutes

- Ready all materials for the activity

Teaching Time: 30-45 minutes

Materials:

- A large bag or box to contain:
 - A small rock
 - Bag of crushed rock
 - Bag of organic matter (brown leaves)
 - Bag of soil
 - Picture of the sun
 - Picture of water
 - Small watering can or picture
 - Packet of seeds
 - Trowel to represent the planter
 - Radishes
 - Small hand rake to represent farmer/tending plants
 - Garden glove to represent harvester
 - Dollar bill image
 - 2 small trucks to represent the transportation of food products
 - Measuring cup and spatula/large spoon to represent chefs
 - Fork to represent consumer

- Important Note: This lesson is adaptable to a variety of fruits and vegetables, even foods such as cheese and bread. You can tailor the specific crop used in this lesson depending on what is in season in your area or what plant/food product you are learning about.

Activity Procedure:

1. First tell the students you have a riddle for them: How do we get radishes from rocks? Ask them if anyone believes we can grow radishes from rocks.
2. Explain that you have a bag full of clues to answer the riddle.
3. Start with the rock in your hand. You could lay out the contents of the cloth bag or have each student reach inside without looking to pull out a clue. How do the clues relate to the riddle? Have each students contribute one connection at a time, lining up the “stages” of how rocks become radishes.
4. Eventually the line-up should connect as follows:
 - a. The basis for all soil is rock (small rock)
 - b. Rocks weather to become sand, clay, gravel (bag of crushed rock)
 - c. Sand, clay, gravel mix with organic matter (brown leaves)
 - d. To become soil (bag of soil)
 - e. Soil is a habitat for many plants. We need healthy, rich soil to grow plants for food.
 - f. Farmers (trowel) grow food starting with seeds (Seed packet)
 - g. They tend the seeds, making sure that the seeds get the essential things they need to live (water from rain and sun)
 - h. When it doesn't rain and there is drought, the farmer has to water the plants (watering can)
 - i. When weeds grow around the plants, the farmer has to weed the area (small hand rake)
 - j. As the seeds develop, they grow into full plans (radish)
 - k. The radishes are harvested (garden glove) by the farm worker
 - l. The radishes are transported to a store (truck)
 - m. Someone buys the radishes (dollar bill) and brings them home to prepare (another truck)
 - n. That person prepares the radishes with the help of a friend (two cooking utensils: measuring cup, cooking spoon, etc)
 - o. Finally, the radishes are eaten (fork)
5. Our food system has a lot of people involved and a lot of stages!
6. Nature plays a very important role in growing food. Identify.
7. You can say we are made of rocks! We are what we eat! Rocks are made of minerals. When rocks break down, the minerals go into the soil. The seeds and plants absorb these minerals. When we eat these plants, we consume the healthy minerals from the soil.

Wrap Up:

1. If you have time, a good reinforcement is to go through the food system backwards (from fork to rock).
2. Another great wrap up is to have the students create a line themselves in the proper order of steps without using any words and with no direction from the teacher. Allow 3-4 minutes for students to re-create the chain and review as a class.

Extension Activities:

- a. Taste radishes together as a class. Try different varieties and compare them.
- b. Make a simple recipe using radishes with your students.
- c. Grow radishes in containers or in a school garden. Radishes are ready to harvest just 30 days from seeding – they grow fast!
- d. As a post assessment tool, have students put the objects in order from rock to fork without speaking.

This lesson was adapted from the lesson plan “Rocks to Cheese” originally published in *Project Seasons* by Shelburne Farms in Shelburne, VT.