

Walla Walla School Garden Lesson

Title: 5th Grade Soil & Microorganisms

Standards addressed: EALR 4

- 4-5 ES2D *Soils are formed by weathering and erosion, decay of plant [matter](#), transport by rain through streams and rivers, and deposition of [sediments](#) in valleys, riverbeds, and lakes.*

Unit connections: Science Microworlds Unit, 2nd grade science unit (soils with test tubes)

Description: The students will compare soil sample and classify any microorganisms they discover.

Objective:

- The students will use microscopes to compare different soil samples from around the community.
- The students will use a soil food web to classify any microorganisms they find.

Time Required: Pre-garden time: 20 min/Garden time: 1 hour

Materials:

- soil samples from around the community, labeled. These can be brought in by students. One sample should be from the school garden.
- microscopes – solar fiberglass ones from Edison?
- slides or containers to hold the soil while under the microscope
- copies of Soil Food Web (1 per student)
- paper or a science journal to record information

Preparation: Copy the food web diagram. Collect soil samples and/or coordinate with the teacher ahead of time to have students bring soil from home. Ask the teacher if he or she would like the students to record this information in their science notebooks or on a piece of paper. Out at the garden, you can either set up “stations” with soil samples and have groups of students rotate to each one, or prepare multiple samples of each soil and have students stay with one microscope and change out soil samples.

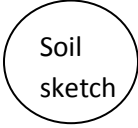
Class Discussion:

- 1) Ask the students to talk to someone around them about **everything they know about soil**. After a few minutes, ask students to raise their hands if they can tell you something their classmate said.
- 2) After a few facts about soil have been presented, ask the **students what they think soil is made of**. Guide them to say, decay of **plant matter and sediments**.
- 3) Ask them **how soil is formed**. Guide them to say **weathering and erosion**.
- 4) Tell the students that they will discover layers of soil and work with different kinds of soil today.

Walla Walla School Garden Lesson

Action:

- 1) Have the students create a chart like the one below on a piece of paper or in their science journal. The chart should have the same number of spaces as there are soil samples. This example is for 6 soil samples:

Soil A 	Soil B
Soil C	Soil D
Soil E	Soil F

- 2) When the students finish, have them take a solar microscope (one per group of students, depending on how many you have), their science journal or piece of paper, and a pencil. If they brought soil from home, have them bring that as well.
- 3) When they get outside have the student groups gather around the microscopes and observe the soil samples. Pass out the soil food webs so they can classify any organisms they might see.
- 4) In each space, students should draw the soil, note any interesting features, and try to identify and record any microorganisms.

Wrap Up: After the students have observed all soil samples, they can turn their paper over and compare the different soils by writing about how they are the same or different.