

Focus on: Soil for Plant Growth

This lesson is meant to support the unit on Plants on Earth. It should be done after students have an awareness of sand, clay, and humus.

Clarifying Objectives:

3.L.2.2 Explain how environmental conditions determine how well plants survive and grow.

3.L.2.4 Explain how the basic properties (texture and capacity to hold water) and components (sand, clay and humus) of soil determine the ability of soil to support growth and survival of many plants.

Key Vocabulary:

Definitions can be found at <http://learnersdictionary.com>

- Survive/ Survival
- Environment /Environmental
- Conditions
- Properties
- Texture
- Capacity to Hold Water
- Components
- Sand
- Clay
- Humus
- Soil

Focus Question(s):

Which soil type is best for supporting plant growth: sand, clay or humus?

Materials:

- School Garden
- Cups to Collect Soil
- Sand
- Clay
- Humus
- Seeds (fast germinating would be best)
- Science Notebooks

Activities:

- Students will conduct a growing experiment.
- This can be done as a class or with small groups of students.
- Visit the garden to collect a cup(s) of soil.
- Prepare cups of sand, clay, and humus soil.
- Have students plant 2-3 seeds in each cup of soil.
- Review the needs of seeds/plants with students.
- Have students water the cups of soil after the seeds are planted.
- Place the cups in a window sill so they will be sure to have sunlight.
- Have students sketch and write about the experiment in their science notebooks along with writing their prediction and reasoning for which soil will be best at supporting plant growth.
- Every few days, have students observe their plants and measure them as they grow. Record their findings in their science notebooks.
- Have students create a graph to compare the data showing the growth of the plants in each soil type.

Guiding Questions:

- What do plants need in order to grow?
- If we give them all the same amount of water, will they all grow the same?
- If we give them all the same amount of sunlight will they all grow the same?
- Which soil type do you think will be best for growing seeds/plants?
- Why do you think that?
- Since we watered them all the same and gave them the same exposure to sunlight, what else could be the reason for the differences in the growth of the plants?
- What could the difference be in the soils?
- Which soil type is closest to the garden soil?