

# 3<sup>rd</sup> Grade Earth and Life Science and Organic Garden Unit

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## Standards Addressed in this Unit:

S3L1	Students will investigate the habitats of different organisms and the dependence of organisms on their habitat.
S3L1.a	Differentiate between habitats of Georgia (mountains, marsh/swamp, coast, Piedmont, Atlantic Ocean) and the organisms that live there.
S3L1.b	Identify features of green plants that allow them to live and thrive in different regions of Georgia.
S3E1.c	Use observation to compare the similarities and differences of texture, particle size, and color in top soils (such as clay, loam or potting soil, and sand).
S3E1.d	Determine how water and wind can change rocks and soil over time using observation and research..
S3CS1	Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.
S3CS1.a	Keep records of investigations and observations and do not alter the records later.
S3CS1.b	Offer reasons for findings and consider reasons suggested by others.
S3CS1.c	Take responsibility for understanding the importance of being safety conscious.
S3CS2	Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations.
S3CS3	Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities utilizing safe laboratory procedures.
S3CS4	Students will use ideas of system, model, change, and scale in exploring scientific and technological matters.
S3CS4.a	Observe and describe how parts influence one another in things with many parts.
S3CS4.b	Use geometric figures, number sequences, graphs, diagrams, sketches, number lines, maps, and stories to represent corresponding features of objects, events, and processes in the real world.
S3CS4.c	Identify ways in which the representations do not match their original counterparts.
S3CS5	Students will communicate scientific ideas and activities clearly.

My time on Sapelo and the UGA Marine Institute really helped me to understand how data collection happens and is recorded and how it is used in long-term research. This lesson is to help students understand the importance of the research process.

**BIG IDEA:** How does soil help our organic plants grow?

**Materials:** 3 paint trays, 3 clear, plastic water bottles, sand, clay, loam, green bean seeds, soil samples from GA regions.

**First part of unit:**

Students will be given three types of soil (clay, loam, and sand). They will make observations about the different types and write and sketch their observations in their Science notebooks. We will look at the different types under a microscope. We will put each type of soil in different clear, water bottles and place in an elevated paint tray. We will poke holes in the water bottle lid so that water can go out of it.

We will pour the same amount of water in each bottle and video our observations and see, which type, retains the most water and which allows water to flow fast through it.

We will then put an organic green bean seed in each soil type. Students will make a hypothesis about which soil type they think will allow the seed to sprout. We will make a bar graph for our hypothesis. We will put the bottles near a sun source.

Students will draw and color the water bottles and label the soil types.

Students will observe the soil types and bean growth over two weeks. Each day they will write their observations in their science notebooks. After two weeks, we will look back at their hypothesis and see if their original hypothesis matched the result. Students will be encouraged to explain why their hypothesis was or wasn't correct.

**Second part of unit:**

We will then look at different types of soil that have been collected in the different habitat regions of GA. Students will then compare the types of GA soil with the make-up of loam, clay, and sand. They will choose a type of soil to use to grow the same green bean seed type as in the first part of the unit. We will make a bar graph to show our hypothesis for whether or not their soil from the GA habitat will grow the green bean seed. Students will draw and color their bottles and water and collect data over two weeks. After two weeks, we will come back together and see which soil type grew the organic green bean seed.

**Third part of the unit:**

We will look at different plants that are grown in specific regions of GA. We will research how their plant adaptations allow them to grow in that region and with that soil type. If possible, we may try to grow a plant from the GA marsh in soil from the GA mountain area and see what happens.

Even though the big idea was for students to learn what soil is and also how it helps organic plants to grow, students will be given a chance to do research on GA soil types, GA plants, and plant adaptations.