



Nurturing Seeds Experiment

Part 1

NGSS Addressed

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.



Materials

Bean seeds, paper towels, receptacle (like a microwave meal dish), different types of liquid to “water “the seed



Challenging Question

How do environment and resources make a difference in seed germination?

(K-5) Access Prior Knowledge

Say: We have spent some lessons talking about sprouting seeds and even planting our own seeds. We have talked about and looked at pictures of sprouting seeds. While seeing things in pictures is good, good science students practice experimenting and observing to get more information about what they are learning



Explore

Kindergarten through Fifth Grade Explore

Explain: The students will design and conduct their own experiments based on some general background information they have about seed germination.

Ask: What do we know about seeds? Talk to your shoulder partner (or table group) about seeds. What do seeds need to *germinate* or sprout?

- Have students share their thoughts about what seeds need to germinate.

Explain: Today we will start an experiment to see if seeds will germinate (or sprout) even when soil and, in some cases, even water are not present.

Say: Everyone here agrees that seeds need water to sprout or germinate. We are going to see if seeds really need water and soil to germinate.

- We will break up into groups and each group will determine how they will “water” their seed. My seed will be the control seed, getting water. If you are having trouble deciding what liquid to use, take a look at the liquids I have in the classroom. You may use them.
- (K-1) Teachers may want to lead a class discussion and have the class choose the four or five liquids that will be used. (2nd – 5th grade) Collaborative groups can come to an agreement on the liquid.

Explain: All seeds will be placed on a paper towel. The seed will be watered so that the paper towel is damp but not overly wet. Groups can decide on a location for the seed. Once the location of the seed has been chosen (and approved by the teacher), the location *may not* be changed.

- Student groups need to monitor the groups to make sure the paper towel is moist. If no, the seed needs to be “watered” with the chose liquid.

Kindergarten through Fifth Grade Revision and Reflection

All students draw the seed set up (location) and liquid choices made by their group, labeling all pictures.

