What is a seed?

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Extensions

Measure the rate of growth from classroom to classroom and record the data.

Limiting the amount of sunlight to one set of plants and compare the results.

Provide fertilizer to one or more plants and compare.

Graph the rate of growth between each student’s plants

**ENGAGE**

Divide the class into groups. Give each group a bag to sort into seeds and non-seeds.

Discuss which might grow. Ask the children how seeds change into plants.

Ask the children if they have ever eaten beans before. Did they know they were seeds? Ask them what other kinds of seeds they have eaten.

Put 4 soaked lima beans and 2 kidney or pinto beans on a paper towel in front of each group of students. Have student observe and compare the presoaked lima beans to the dry beans. Ask the students what they think the inside of these seeds might look like. Do they think every kind of seed looks different on the inside or are they alike in some ways?

**EXPLORE**

Ask each student to choose a lima bean to examine with a hand lens. Direct them to carefully peel the outer covering off the soaked seeds, split them open, and use their hand lenses to look closely as they separate each seed into two halves. Have students discuss with a partner the possible parts of the seeds.

**EXPLAIN**

Ask the students what they notice. Tell them there are four parts in a seed. Can they find them? Create a chart with columns labeled seed coat, leaves, root, and seed leaf. Lead students in a discussion of the possible functions they came up with for the seed parts. Acceptable answers and write them on the chart. If students do not come to the correct functions on their own, lead them to understand that the seed coat protects the seed, the leaves and root are the baby plant that will grow into a full-grown plant, and the seed leaf is the food that the plant uses until it grows leaves above ground to make its own food.

**Planting activity**

The students will be planting Collards, Kale or Swiss Chard. Do these seeds have the same parts as the beans? How can something so small grow to be so tall? The students will be given a peat pellet, a cup of water, a mini greenhouse to share, and a few seeds to plant in their pellet. The pellet will soak in water while we do the seed dissecting. As we go through the experiment the pellet will expand. When the pellet is finished expanding we will take it out of the cup, place it on the table, put the seeds inside and place the pellet in the mini greenhouse.

**Care for your plants**

Allow the cover for the greenhouse to stay on until 70% of your plants have germinated. You do not need to water the plants while the cover is on. Once you have reached the 70% threshold remove the plastic cover and place it under the greenhouse tray. After you remove the cover only water your plants when the top of the peat pellet is a light brown color. When the plants are young you will probably only need to water once a week, but as they get older the need to water will increase.

**Thinning**

Your little seedlings will start to grow. You may get one or two seedlings growing in the same pot. Once one of the seedlings has four leaves, please remove the rest of the plants. You will want to use scissors to just cut the plants you don’t want.

**Objective**

To have the students understand the different parts of a seed and what functions those parts have.

**Time**

40min

**Group size**

Whole class

**Materials**

Seeds, soaked bean seeds, peat pellets, mini greenhouse, plastic cups, hand lenses

**Number of chaperones**

0

**Standards**

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