

Seed Science

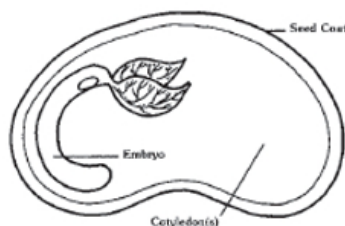
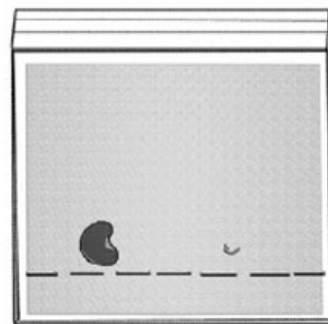
- Objective:** To use the scientific method to determine the effect on plant growth of removing the cotyledons from seeds.
- Time:** 30 minutes.
- Observation:** 1 week.
- Materials:** Sealable plastic bags, stapler, pinto beans, paper towels, Seed Science Experiment Page (Appendix).

Soak a bag of pinto beans in water overnight to prepare for this activity.

Have the students recall the differences between monocot and dicot plants. Review that monocot seeds are made up of a single whole while the dicot seed is made up of pieces. Hold up a dry bean seed and ask gardeners to identify if it is a monocot or dicot. Show them a seed that has been soaking and show them the different parts to reveal that it is a seed from a dicot plant.

Give each gardener a bean. Have each gardener peel off the seed coat. Each student should take the seed and gently pull it apart to reveal the two halves called cotyledons. Have them look inside the seed for the baby plant, called the embryo.

Tell them that cotyledons are the seed's "lunch box." They feed the seed until it can grow its leaves and make its own food. Tell them that they will conduct an experiment to see how well seeds grow without their food supply.



Fold a paper towel to fit inside a plastic bag. Punch a row of staples across and 1 inch from the bottom of the bag. Have the gardeners place one whole seed in the bag. Beside the seed, place an embryo plant that has been removed from the food-storing cotyledons. Wet the paper towel to moisten the seeds. Observe the growth. Have the students complete the Seed Science Experiment Page.