Seed Dissection

What you will need:

1. Seeds from your kit
2. Dish filled with water to soak seeds
3. Seed Activity Page
4. Seed PDF Print out for demonstration

Time: 24hrs

- Soak the seeds in room temp water for 24hrs.

Knowledge Nook

- dicot: a class of plants that contains 2 cotyledons
- monocot: a class of plants that contains only 1 cotyledon
- seed: what a flower produces which provides capability of reproducing another plant

Did you know

- A coconut is the largest plant seed.
- The smallest seeds can be the size of a speck of dust.
- Seeds can sense gravity and will always grow up.

Activity Steps:

1. Pass out one copy of the "Seed Dissection" activity sheet to each child.
2. Use the Seeds print out to show the parts of a seed. Have them label the diagram on their activity sheet and write the functions of the seed coat, food supply, and embryo.
3. After soaking the seed for 24 hours, drain the seeds and pass out a bean and corn seed to each child. Follow the instructions below to dissect each seed. Have the children place each dissected seed part in the labeled box at the bottom of the activity sheet.

<u>Bean Seed</u>

Carefully have the children remove the bean seed coat, which, before the soaking, protected the seed food source (cotyledons) and the embryo, which will become the new plant. Next, have the students gently split the bean seed—the two halves are the two cotyledons. This is where the bean seed stores the food that is used for growth until it gets its first true leaves and begins to make its own food. The children should be able to see a little lump near the edge of one cotyledon. Don't touch it yet! Carefully study this lump (a hand lens may be useful). This is the embryo—the new plant! If children look closely, they should see the delicate, translucent leaves. Finally, instruct them to separate the embryo from the cotyledon, place it on a flat surface, and look to see not only the leaves, but also the embryonic roots.

<u>Corn Seed</u>

For contrast, ask the students to try to open the corn seed

1. Use your finger tip to pull off the tip portion of the seed. This is called the endosperm.
2. Next, peel off the clear coat covering the seed. This is called the perrycap.
3. Next have them press their fingernail into the tip portions of the seed end-(endosperm), the cotyledon and the new embryo can be removed.
4. Children should now have two seed coats, two food sources, and two seed embryos in the corresponding boxes of their activity sheets. Use glue or tape to attach them.
5. Summarize what the students have learned. Yes! We eat seeds: peas, beans, peanuts, sunflower seeds, walnuts, cashews, wheat used in bread, poppy seeds, sesame seeds, not to mention the oil that comes from seeds. Seeds truly are a miracle with the potential for life and the ability to sustain lives—like yours and mine. Review by asking these questions: What are seeds used for? Do we eat any seeds or are they used just to grow new plants? Which part of the seed is the outer covering that protects the inside? Which part of the seed is the largest, and what is its purpose? Which part of the seed will grow into the new plant?

All work pages for this unit: Resources: National Ag in the Classroom, BASF Science Club
Adapted from: National Ag in the Classroom, Modified for Farm Wisconsin Discovery Center