Bean Seed Germination Experiment

What happens to a seed when you plant it in the soil? When we plant seeds they first sprout or “germinate.” When planted in the soil, we’re unable see the first sprout push out of the seed coat or see the root system. In this activity, students will be able to observe germination and the plant’s roots.

Materials
- Clear zip lock sandwich bags
- Dry beans
- Paper towels
- Permanent marker
- Water

Procedure
1. Distribute a zip lock bag to each student and write his/her name in the top corner with a permanent marker.
2. Dampen a folded paper towel per student and have them place the folded towel in the bag.
3. Paper towels should be damp enough to provide moisture for the bean, but not dripping, this could cause mold.
4. Have students place a dry bean on top of the damp paper towel and seal the bag. There does not need to be any air in bag.
5. Put each bag some where around the room (see below for experiment ideas). The seed mostly needs warmth at this stage, not light – so prioritize for warmth. A window helps for viewing the seed as it germinates.
6. The seeds should begin to germinate in 3-5 days. Moisten the paper towels if they are drying out.
7. Have students observe the growth of the sprouts. You can have students record the growth on a “growth table” or sketch the growth on a piece of paper or journal. For example, the first sketch should be on Day 1, showing the bean in the bag. The second sketch could be the first sprout, etc.
8. After 2 or 3 weeks the beans will probably be ready to be transplanted into soil. You can experiment with “transplanting” the bean into a pot with soil in the classroom, or transplanting the bean outside into the garden.
9. Beans planted inside with sufficient light (south facing window) and room (medium size pot) can grow quite large. Continuing to measure their growth is fun.
10. Beans are a warm weather plant and should be grown in the summer here in Canada. Also, transplanting plants from indoors to outdoors should be done over a course of two to three weeks so as not to shock the plant, this process is referred to as “hardening off.”

Experiment Ideas: This activity can make for a good experiment on what seeds need to germinate. Try putting bags in different parts of the classroom.
- Cupboard with little light
- Near the heater
- Taped in a window
- Lots of water/not much water

Credit - Lesson adapted from “Garden in a Glove”:
http://www.mda.state.mn.us/sitecore/content/Global/MDADocs/kids/bookbundle/glove_garden.aspx?sc_lang=en