#09

Where Do Plants Come From?

Yes, but dormant

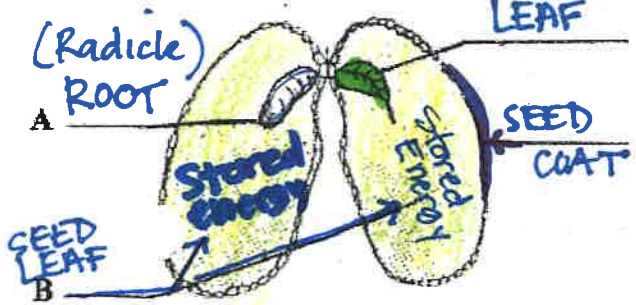
Plants come from seeds. But is a seed really alive? A seed certainly looks dead. It does not seem to move, to grow or do anything else. In fact, when tested for the processes we associate with life, the rate is so slow that it would be difficult to determine whether there was anything alive in the seed.

But, inside every seed is a **baby plant** or **embryo**. If a seed is not allowed to germinate (sprout) within some certain length of time, the embryo inside will die. Some seeds sprout within two weeks of maturing while others can still germinate after 2000 years. – Wow!

The seeds may look different, but they all share common features. All seeds have a seed coat, an embryo and stored energy for the young plant. If a seed finds a good place to live, it germinates. Seeds need **water**, **oxygen**, and **warm** temperature to **germinate**. (Do not need sun to sprout)

Germination begins when water enters the seed coat and the cells inside the seed begin to fill with water and expand. The embryo begins to grow using the stored energy in the seed leaves. The root first emerges from the seed and then the stem and leaves. As the plant grows it uses the energy in the seed leaves until it has true leaves and can begin to make its own food through the process of photosynthesis.

Label: A = root C = leaf
B = seed leaves D = seed coat



Will photosynthesize eventually

– outer protective covering

Seed Germination and Tropisms (Gravitropism & Phototropism)

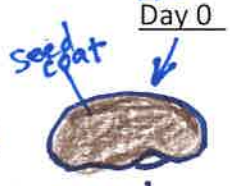
In this activity, your group will watch seeds germinate and hopefully observe tropisms (gravitropism and phototropism.)

Materials: plastic pipette, beaker of water, paper towels, 3 beans, a ziplock bag, a ruler, a Sharpie (you provide).

Directions:

1. Label your group's plastic bag with a Sharpie. Put a group member's name on the bag along with your class period.
2. Fold the paper towel in half and place it in the plastic bag.
3. Use the graduated cylinder to measure 30 mL of water. Place 30 mL of water into the plastic bag.
4. Place the 3 beans in the bag 4 cm above the bottom of the bag.
5. Zip the bag shut and raise your hand so that I know that your group is done.
6. Draw your observation of the bean for day zero below.
6. Read the CK 12 chapter on Tropisms. Complete the questions and do the online Practice to quiz yourself.

Fri
Day 0 (weekend) Mon Day # 3 11.20.17 Tue Day # 4 11.21.17



[11.17.17]
(Nothing happening Yet. Hopefully H_2O will get absorbed into bean.)