

Sprouting Activity

While we are stuck predominantly inside for the immediate future, why not bring the outdoors in by sprouting seeds? This activity can give your children something to look forward to – seeing that little green shoot finally sprouting! And it can be educational too, as they learn about germination.



Definitions and Explanation for Parents:

Germination is the stage of plant life when seeds begin to sprout. A seed will germinate only when the conditions are right, for example, when it is warm enough and there is enough water for the seed.

A seed consists of 3 main parts:

- 1) The Seed Coat: this is the outer layer of the seed that protects the plant embryo. In germination, the seed coat becomes soft, and it breaks open. The other two main parts of the seed are inside the seed coat.
- 2) The Plant Embryo: this is the baby plant. It has 3 main parts which will be discussed below.
- 3) The Cotyledon: this is the food for the plant embryo, and makes up most of the space inside the seed coat. In germination, when the seed coat breaks open and the plant embryo begins to grow, the embryo consumes the cotyledon to get energy.

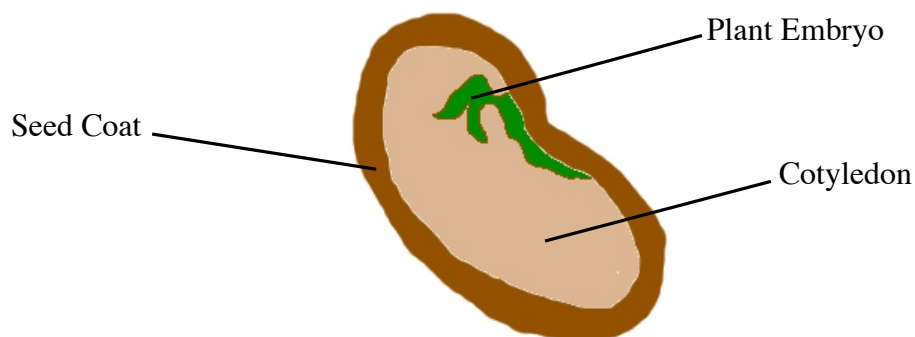


Fig. 1: Example of a kidney bean with labeled parts.

The plant embryo is made up of 3 main parts: the radicle (baby roots), the hypocotyl (the connection between the cotyledon and the radicle), and the epicotyl (what will become the stem and leaves). When the seed starts to sprout, you will see the radicle first, then the hypocotyl and finally the epicotyl.

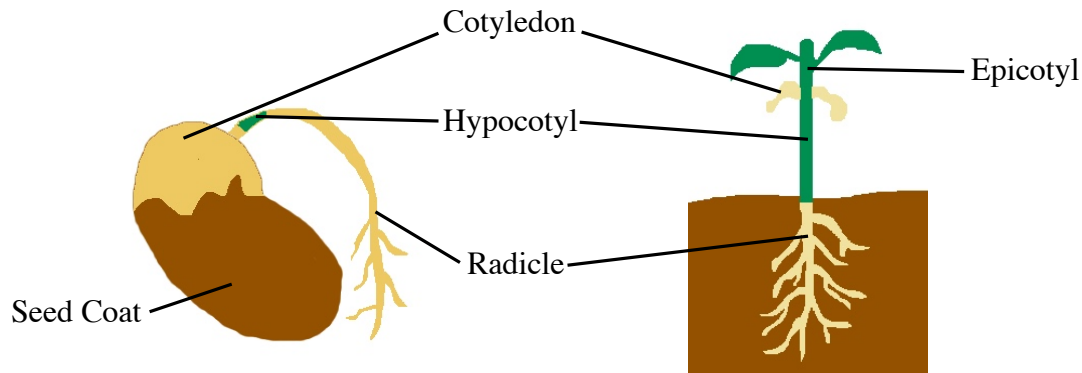


Fig. 2: Example of two stages of a sprouting kidney bean with labeled parts.



Activity:

For this sprouting activity, you can use dried beans. You could use packaged seeds, but these may be treated with fungicides to increase germination rates, so we suggest using dried beans bought from a grocery store. It is best to sprout your seeds in a clear container, as this allows you to see the roots and leaves emerging from the seed.

Materials:

- ☼ A clear container made from glass or plastic, such as a disposable cup or a jar
- ☼ Paper towel
- ☼ Three or four large beans/seeds: we suggest dried, un-cooked kidney beans
- ☼ Spray bottle with water

What to do:

1. Place a strip of paper towel all the way around the inside of the jar.
2. Scrunch up some more paper towel and put it inside the first strip, so that it fills up the jar.
3. Spray the paper towel until it is damp but not wet. If you can see standing water at the bottom

of the jar, it is too wet. Drain out any excess water.

4. Place the seeds between the paper towel and the jar so you can see them clearly.
5. Place your container in an area that is free from drafts and where the paper towel can stay damp. Because the plant first feeds from the cotyledon, the plant does not yet need sunlight. It should be moved to a sunny location only when you start to see leaves.

What you will see:

As the beans absorb water they will get bigger until a little root comes out. Then the bean will start to send up little leaves. When the leaves poke out above the paper towel, you can carefully take out the whole plant and plant it in some potting soil. Be very careful not to tear any part of the plant, as some parts, especially the root system, will be very delicate. Be sure to put your plant in a sunny location, so that its leaves can absorb the sun and produce energy, and keep watering as necessary. If you want to plant your plant outside, wait until the third week of June to give your plant a fighting chance in our cold climate.



Fig. 3: Pictures of two stages of our sprouting activity.

Happy Growing!

