

This activity will lead the young students through the parts of a plant and how seeds germinate. By cultivating their own seed and making daily observations, they will have a better understanding of how roots and shoots form.

Materials

- Plastic test tube or glass jar
- Paper towel or toilet paper
- Water
- Seeds (bean or pea works best)
- Observation sheets

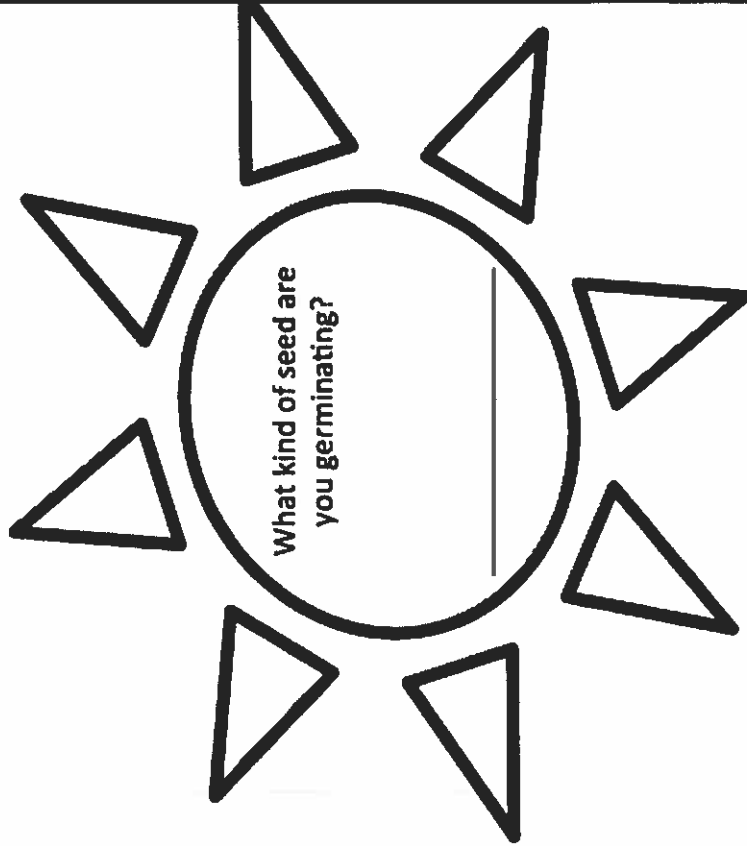
Action

1. Provide the students with all of the listed materials and work with them to create their mini-greenhouse.
2. Place moistened paper towel or toilet paper into the test tube or jar.
3. Strategically place a seed so that it is visible and not hidden in amongst the folds of the paper towel.
4. Place the test tube or jar in a well-lit room or sunny window.
5. Make observations every day about the growth of the roots and shoots (older students can write down their observations on the worksheet found on page 2).

Conclusion/Wrap up

It's amazing that the seed of a plant contains all of the information it needs in order to start growing. Seeds are stimulated by sunlight and moisture. As soon as the seed is wetted, hormones within it get to work. They send signals to the different cells found within the seed and that starts the germination process. The roots start to sprout, and will always grow away from the sun and towards gravity (negatively phototropic and positively geotropic). The shoots will grow towards the sun and away from gravity (positively phototropic and negatively geotropic). What happens to the roots and shoots if you lay the tube on its side? What happens if you flip it upside down? Have your students try several different experiments to see what happens. This kind of investigation can last for weeks, and once the roots and shoots are starting to press against the side of the tub or jar, transplant the plant to a small pot of soil and let the growing continue!

Roots and Shoots



OBSERVATIONS (DRAW YOUR SEED)	
DAY 1	DAY 2
DAY 3	DAY 4
DAY 5	DAY 6