The Plant Life Cycle

What You'll Need:

- Cotton balls
- Water
- Tape
- 1 Marker
- Plastic sandwich baggies that zip closed
- Basil, oregano, or other seeds for plants that essential oils are sourced from (you will want more than one type of seed).
  Note: *You can also use lima beans, as they are larger than most seeds and make it easier to see when the plant sprouts.*

What You'll Do:

1. For this activity you will be sprouting seeds. Sprouting in the first step in a seed growing into a plant. Take a moment to answer questions 1-4 on the "What You Discovered" worksheet before beginning the experiment.

2. To set up your experiment, use the marker to label one plastic bag with the type of seed you're putting inside. For example, if you are going to sprout a lima bean you would write lime bean on the outside of the bag.

3. Next, dip some cotton balls in water and place them at the bottom of the plastic bag you just labeled.
Note: *You want the cotton balls to be moist, but not dripping wet. You may need to squeeze some of the water out. Also, you only want enough cotton balls in the bag to cover the bottom of the bag. This number will vary depending on the size of the bag and the size of the cotton balls.*

4. Place the type of seed you wrote on the bag between the cotton balls and the plastic bag so you can see the seeds. For example, if you're using lima beans, place the lima beans in the bag you labeled "lima beans."

5. Let the air out of the bag and zip it closed.

6. Tape the bag to a window that gets at least partial sunlight throughout the day, though you may need more sunlight depending on the type of seed you're using.

7. Repeat steps 2 through 5 for each type of seed you are using.

8. Draw a picture on your worksheet of your seeds inside each bag before they start sprouting. Make sure to label each picture with the type of seed inside so you know which picture goes with which bag.

9. Check the seeds each day for a week and draw a picture of what they look like.

10. Make sure to fill out the "What You Discovered" worksheet as you work on your experiment.

What Does It Mean?

Plants experience various stages of development as they grow from a seed into an adult plant. Taking the time to sprout a seed makes it easy to observe the beginning stages of a plant's growth. If a seed sprouts, that means it got enough water and sunlight to begin growing. You probably noticed that some of your seeds did not sprout. This could be caused by a variety of factors, such as not enough sunlight, water, or time. Sometimes it's simply because the seed was bad.

Once a seed has sprouted, it can be planted in soil and allowed to grow into a full plant. A seed doesn't need soil until after it has sprouted. After a seed has sprouted, planting it in soil helps it grow into a healthy plant. The soil helps the seed get the nutrients it needs and allows it to grow a good root system, both important things a plant needs to grow strong.

What to Do Next:

• Repeat the experiment using different types of seed.

• Plant your sprouts in a pot or garden to try and grow the full plant.

• With the help and permission of your parents, post pictures of your sprouts on Facebook or Instagram and make sure to tag **@doterrascience** or use the hashtags **#doterrascience** and **#doterrascienceforkids.**

What You Discovered:

Fill out the questions below as you work on your plant life cycle experiment.

1. What type(s) of seeds are you using? _____

2. Which type of seed do you think will sprout first? _____

3. How many days do you think it will take for your first seed to sprout? _____

4. How many of your seeds do you think will sprout? _____

5. Draw a picture of your seeds inside the bag.

6. Draw a picture of your seeds each day for a week.
Note: *You can use the back of this piece of paper if you need more room to draw.*

Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**

7. How many of your seeds sprouted? _____

8. How many days did it take for your first seed to sprout? _____

9. Which type of seed sprouted first? _____

10. Which type of seed sprouted last? _____

11. How did your guess at the beginning of the experiment compare to what actually happened? *(This guess is called a* prediction *or* hypothesis*, and what happened is known as the* results*.)*

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