Plant Growth

Name: _____

Date: _____

How Do Plants Grow and Make Other Plants?

Explore: Growing Your Own Plant

Questions

What do plants need to grow?

Consider the following questions:

- Is there more than one factor that affects plant growth?
- Do you have plants that live in your house?
- What do you and/or the adults in your house have to do to keep these plants alive and help them to grow?
- Do you need to water them... provide light... provide soil...?

Hypothesis

Based on your prior knowledge, make an educated guess of the answer to the question above.

Skill Builder

How to make a hypothesis.

If you need to use this Skill Builder, access it from the online course.

Need a Hint?

For example, you could test to see if plants require light to grow. Your hypothesis would be something like this: *I think that plants need light to grow.*

Other possible hypothesises:

- I think that plants need heat to grow.
- I think that plants need water three times a week to grow.
- I think that plants need dirt to grow.

Resources

- two plastic cups (small or medium size)
- Paper towel
- Water
- Potting soil
- four lima beans (or any other bean that is easily accessible)

Procedure

1. **The day before the lesson:** You need to soak your four lima beans in water so that they open more easily when you plant them in soil during this activity. To soak the seeds, place paper towel in a plastic cup. Place lima beans on paper towel in cup. Fill the cup with water and let it sit overnight.

2. You will now plant your own seeds that you care for throughout this unit.

3. Fill each plastic cup three-quarters full of soil.

4. In one cup, push two lima beans that have soaked overnight into the top of the soil so that they are covered completely. Repeat with the second cup. Be sure that you push them the same depth in both cups.

5. Reread your hypothesis. What variable are you testing? This is your manipulated variable - the variable that is changed by you. **For example**, your hypothesis might state, "Plants grow best in direct sunlight". This is the variable you need to test. Therefore, everything else must stay the same. Both plants must have the same pot, the same soil, the same type of seed, and the same amount of water. Then, you would place one pot in direct sunlight and the other in a shaded area. You might also have a third pot in a closet.

6. Your seeds are now ready to start growing. Set up your two cups and label them Plant A and Plant B. The two plants will reflect your manipulated variable. For example, if you were using the direct sunlight example above, Plant A could be the one in direct sunlight and Plant B would be the one in a shaded area.

7. Record your predictions and observations each week on the **Observation chart**.

Observations

In the **Prediction** column, draw what you think your lima bean plant will look like each week. Then, take a picture and insert it, or draw what it actually looks like in the **Observation** column. Compare your weekly observation with the predictions that you made. You will repeat this process for each of the next five weeks.

Observation Chart

Week	Prediction		Observation	
	Plant A	Plant B	Plant A	Plant B
1				
	Insert Picture for Week 1	Insert Picture for Week 1	Insert Picture for Week 1	Insert Picture for Week 1
2				
	Insert Picture for Week 2	Insert Picture for Week 2	Insert Picture for Week 2	Insert Picture for Week 2
3				
	Insert Picture for Week 3	Insert Picture for Week 3	Insert Picture for Week 3	Insert Picture for Week 3

4				
	Insert Picture for Week 4	Insert Picture for Week 4	Insert Picture for Week 4	Insert Picture for Week 4
5				
	Insert Picture for Week 5	Insert Picture for Week 5	Insert Picture for Week 5	Insert Picture for Week 5
6				
	Insert Picture for Week 6	Insert Picture for Week 6	Insert Picture for Week 6	Insert Picture for Week 6

Conclusion

1 Was your hypothesis correct?

2 What observations did you make that support or do not support your hypothesis?

3 What conclusion can you make about what plants need to grow?

Challenge!

If you want to, you can set up more than one of these experiments. Do you want to test to see the results of a different variable? All you need is more cups and more lima beans! Be sure that you are always testing just one variable!