

# WHAT DO PLANTS NEED TO GROW?

Volume 25 | Gr. 9-12

Time: 3 Weeks

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## PS.01.01.

Determine the influence of environmental factors on plant growth.

### PS.01.01.c.

Analyze plant responses to varied light color, intensity and duration and recommend modifications to light for desired plant growth.



### Materials List:

- Grow a Fruit and Vegetable Garden Kit (SB53412)  
OR
- Grow a Decorative Garden Kit (SB53411)

### Objectives:

Students will...

- Research key factors and determine which environment is best for plants to grow

### Overview:

Students will create research plans to determine which soil type and environment would be most beneficial for plants to grow. Students will have 10 samples including a control group and then 4 other groups of their choosing (2 plants for each group). Students will decide based on their hypothesis if they will change the soil type of the environment in which the plants are kept. With the kits and journal in this lesson plan, students can complete this project in school or at home.





### Activity 1:

Students will determine their hypothesis, which will be written on their lesson plan worksheet.

Example: If sunlight is needed for plants to grow then the plants in direct sunlight will grow more quickly over our three-week period.

### Activity 2:

Students will fill out their table on their worksheet to fit their hypothesis for each day.

### Activity 3:

Students will need to determine where to place each of their control and 4 other group pots. (Example: Control – Direct Sunlight, Group 1 – Partial Sunlight, Group 2 – LED Light only, Group 3 – Light for only 3 hours, Group 4 – Total Darkness).

### Activity 4:

Students will cut apart the egg carton and plant their plants.

### Activity 5:

For 21 days, students will record the progress of their plant to determine its growth (measure plant growth in inches). Students must also water each plant the same amount of water (ex. 25 ml) each day.

### Activity 6:

After 21 days are complete students will complete the following questions on their worksheets:

1. Which of your groups grew the most during this experiment and why?
2. Which of your groups grew the least during this experiment and why?
3. Did the experiment prove or disprove your hypothesis. Why or why not?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

Complete the table below as you watch your plants grow.

	<b>Control Group (A)</b>	<b>Control Group (B)</b>	<b>Group 1 (A)</b>	<b>Group 1 (B)</b>	<b>Group 2 (A)</b>	<b>Group 2 (B)</b>	<b>Group 3 (A)</b>	<b>Group 3 (B)</b>	<b>Group 4 (A)</b>	<b>Group 4 (B)</b>
Day 1										
Day 2										
Day 3										
Day 4										
Day 5										
Day 6										
Day 7										
Day 8										
Day 9										
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