

Name: _____ Section: _____
Jacob's Experiment

Directions: Read the passage below and complete the questions to show your understanding of Jacob's experiment.

Jacob, a landscaper, wondered if a particular tree would grow better in the sun or in the shade. Without collecting information or doing much research, Jacob claimed that if he could limit the amount of sunlight the tree was exposed to, then the tree would grow taller. To test this idea, Jacob planted 10 trees in a shady area and 10 trees in an area with a significant amount of sunlight. Over the next several months, Jacob watered and fertilized each tree in the exact same way. He also took measurements of the tree's height and averaged them. The data he took is below.

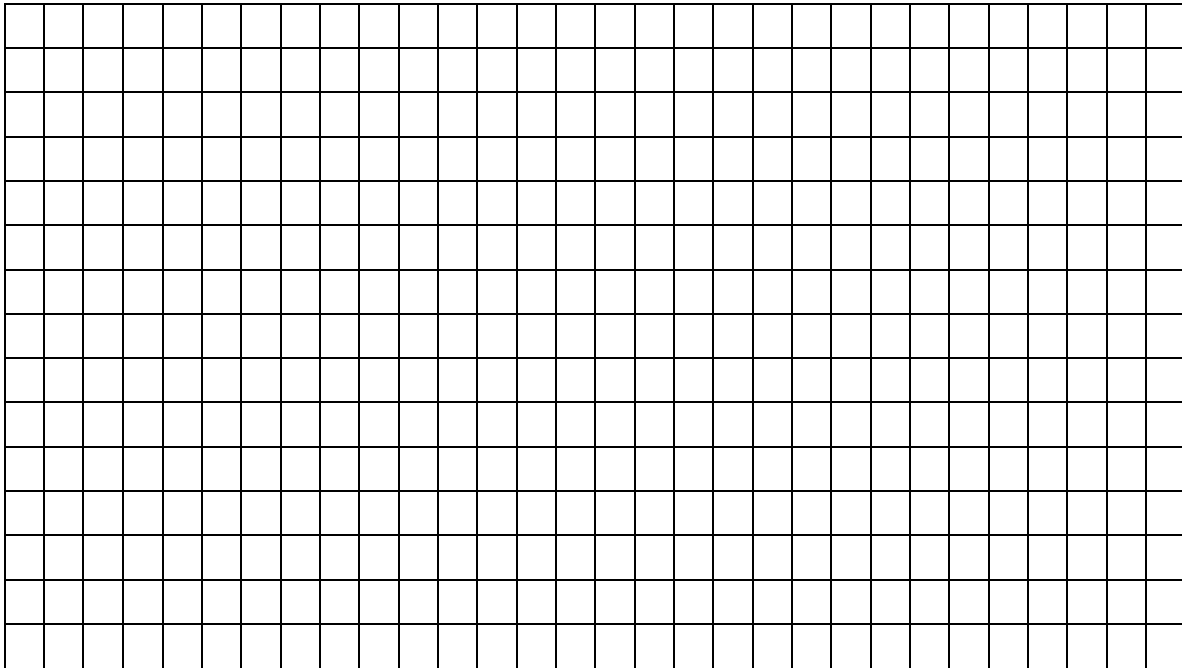
| Month | Average Tree Height in the Sun (meters) | Average Tree Height in Shade (meters) |
|-----------|---|---------------------------------------|
| April | 0.2 | 0.2 |
| May | 0.5 | 0.5 |
| June | 0.8 | 0.6 |
| July | 1.1 | 0.7 |
| August | 1.4 | 0.9 |
| September | 1.8 | 1.0 |

1. Underline Jacob's hypothesis in the story above.
2. What factor is the independent variable in the experiment?
Explain your reasoning.

3. What factor is the dependent variable in the experiment?
Explain your reasoning.

4. Identify **two** constants in the experiment.

5. Using the grid below, construct a double line graph using the data above. Graph both sets of data on the same graph. Make sure your graph has a title, labeled x & y axis, the appropriate number scale and a key.



6. According to the data as illustrated in the graph above, do you think the data/results support Jacob's hypothesis? Why or why not?
