

Algae Growth Planning Sheet

name _____

Research Question: What conditions will maximize the growth of algae? For conditions to test, choose from either:

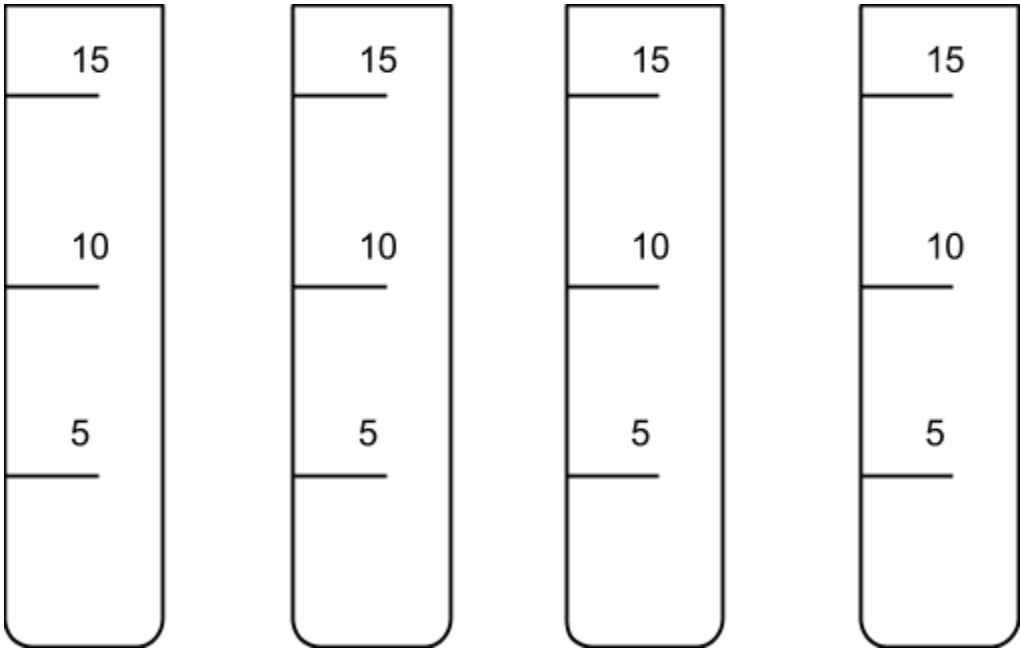
1. growth medium - type of nutrients in the water solution the algae grow in
2. temperature
3. amount of light per day

• Independent variable: _____

• Dependent variable: _____

In this study, you will prepare four different 15 mL test tubes with a culture of algae.

- How many variables should be different in each of the four test tubes? _____
 - What is the only variable that should be different in your study? _____
- List at least 5 variables that you should keep constant, or the same, between each of the four test tubes.
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- One test tube will be a **positive control**. This test tube will contain a culture of algae in 5 mL of a standard growth medium that is known to help algae grow.
 - What should you expect to see happen?
- A second test tube will be a **negative control**. This test will contain a culture of algae in 5 mL of deionized water (contains no dissolved minerals or nutrients).
 - What should you expect to see happen?
- The remaining two test tubes are your experimental groups. In these two test tubes, you will choose different levels of your independent variable. For example, if you are testing temperature you might want to test one test tube at room temperature (22°C) and a second test tube at 32°C. Use the diagram and table on the back of this paper to plan your different test groups.



Variable	Positive Control	Negative Control	Experimental 1	Experimental 2
Container				
Growth medium volume				
Type of growth medium				
Volume of algae starter culture				
Temperature				
Hours of light				

Hypothesis: I think that **experimental group 1 / experimental group 2** will grow the most algae because _____
