

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



### Lab: Algae Bloom

**Question:** How does increasing the amount of fertilizer in water affect algae population?

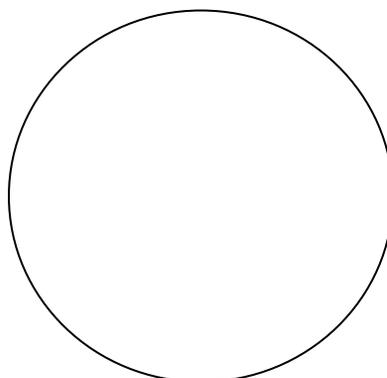
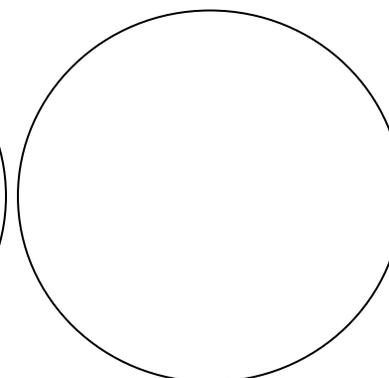
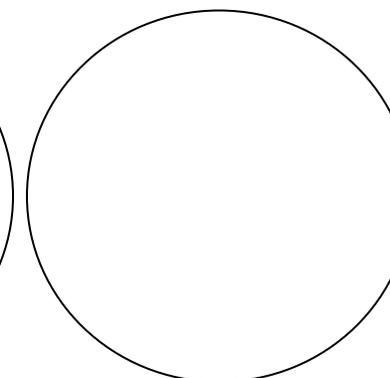
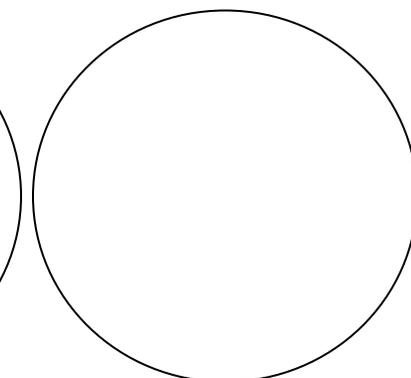
#### Materials:

- 4 250 mL beakers
- Miracle-gro or other similar type of fertilizer
- 4 grow lamps
- stream or pond water (as long it is from the same source)
- Digital scale or triple beam balance
- Weigh tray
- Masking tape or labels
- Marker
- Green colored pencils

#### Procedure:

1. Collect approximately 1 liter of stream or pond water. This will be your source of algae, so make sure that you only collect your water sample from one source.
2. Fill each beaker with about 250 mL of the collected water. Do your best to make sure that the amount of water in each beaker is equal.
3. Measure 5 grams of fertilizer and dissolve it in one of the beakers. Label that beaker "5 grams". Repeat this with two other beakers, measuring and labeling 10 grams and 15 grams of fertilizer for each. This will leave one beaker without any fertilizer. Label this beaker "control".
4. Place the beakers under the grow light, making sure they are all roughly the same distance from the light. Allow the algae in your beakers to grow at least a week.
5. After giving your algae culture some time to grow, make a sketch your cultures.

#### Observations

			
Control	5 g of fertilizer	10 g of fertilizer	15 g of fertilizer

**Analysis Questions**

1. Which variable in your data table is the independent variable? Which was the dependent variable? (what variable did you change for each set of trials and which variable responded to those changes?)

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2. What were the constants in this experiment? (what factors did you keep the same of every algae culture?)

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3. What is the ratio of nitrogen to phosphorus to potassium? (you can find this on the packaging)

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4. Which beaker had the largest algae populations? Which beaker had the least? How can you tell?

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**Conclusions:**

Based off your data, what can you claim about the relationship between the amount of dissolved fertilizer and algae populations? Use your observations as evidence and explain your reasoning.

Claim: \_\_\_\_\_

Evidence: \_\_\_\_\_

Reasoning: \_\_\_\_\_

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