

Name:

Date:

Class:

## Test and Redesign – Worksheet #4

**Instructions:** Your group will now test your prototype! Make sure to write down your observations and note any problems you notice with your prototype.

### Step 1: Set Up Testing Site

1. Using the measuring cup, measure out three cups of water and pour them into an aluminum or plastic tub. Add 2-3 oz of “algae” to the water. This will be where you will test your prototype. Write your measurements below.

Amount of “algae” added to water (in ounces) = \_\_\_\_\_

### Step 2: Test Prototype

1. Test your prototype and write down your group’s observations in the table provided below. Write down the successes of your prototype and any improvements you may want to make to your prototype in the Observation Log.
2. Weigh how much “algae” is collected by the prototype.

Amount of “algae” collected by prototype (in ounces) = \_\_\_\_\_

3. Fill out the table below.
4. Calculate the percentage of algae removed from the water.

**How to calculate percentage of algae collected using the formula:**

$$\text{Percentage \%} = (\text{Value} / \text{Total Value}) \times 100$$

Example: If you had a **total** of 3 ounces of algae before it was added to your water, and your prototype collects 2 ounces of algae. This would give you a fraction of  $\frac{2}{3}$ . The denominator is the total algae you started with, and the numerator is the number of algae collected. Now divide 2 by 3, **then** multiply this by 100. The percentage of algae removed would be 66.66 percent or 67%.

Amount of algae collected by prototype (after testing)	Total amount of algae added to water (before testing)	Collected Value divided by Total Value	Multiply by 100
			= _____ %

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**Observation Log**

<p><b>Successes of Prototype</b></p>	
<p><b>Improvements Needed</b></p>	

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**Step 3: Analyze Results**

5. Write down the successes of your prototype. Why are they successes?

6. What improvements can we make to our prototype to reach our goal of removing 75% of the harmful algae blooms from the water?

**Rubric**

Category	3	2	1	0
<b>Prototype</b>	The prototype removed at least 75% of the algae from the water.	The prototype removed at least 50% of the algae from the water.	The prototype removed at least 30% of the algae from the water.	Did not complete a prototype
<b>Observation Log</b>	Observations in complete sentences and include successes <b>and</b> improvements of the prototype.	Observations are incomplete sentences and one success <b>or</b> improvement but not both.	Observations are not in complete sentences and do not include successes or improvements.	Did not complete Observation Log

Total points earned: \_\_\_\_\_ / 6 = \_\_\_\_\_ %

Teacher Comments:

