

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

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

# INNOVATION FOR CONSERVATION: EXPLORING WATER-POWERED GENERATORS

## 1. INTRODUCTION & BACKGROUND

In your own terms, explain how water-powered generators work. Include a diagram. Use another sheet of paper if needed.

## 2. RESEARCH QUESTION

Consider what question you want to answer through this experiment. Brainstorm 2-4 questions below, and circle the question that you will attempt to answer through this process. You will revisit this question and compare it with your results in Section 8. Use another sheet of paper if needed.

### 3. HYPOTHESIS & PREDICTIONS

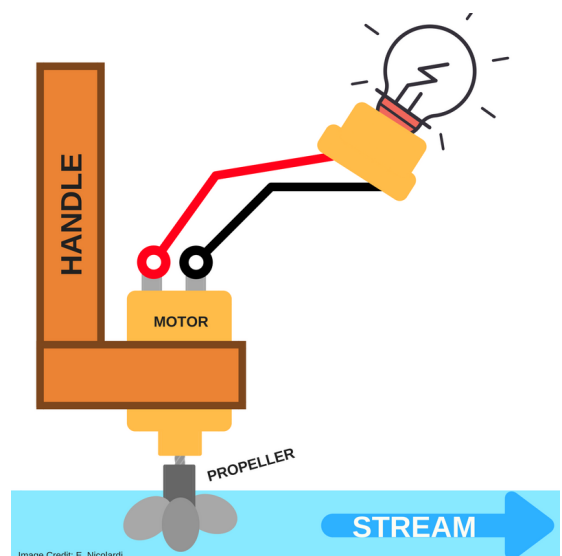
Will the light bulb be brightly lit, dimly lit, intermittently lit, or not lit at all? Does the type of light bulb (LED, incandescent, etc.) affect your predictions? Make sure to note the dependent and independent variables. Use another sheet of paper if needed.

### 4. MATERIALS

Use the following materials to design your water-powered generator.

- \* wood and tape (handle)
- \* simple electrical motor (3-6v)
- \* propeller
- \* light bulb holder and bulb
- \* glue, scissors, makers and other materials as needed

List any other materials used in your design:



## 5. PROCEDURE

You are designing your own procedure for this experiment. Write out the step-by-step procedure you will follow, and describe any methods used to control variables. Describe any methods used for collecting data. Use another sheet of paper if needed.

## 6. RESULTS

### ROUND 1: MULTIMETER

Record the reading on the multimeter:

Based on the observed reading from the multimeter, is there enough power being generated to keep the light bulb lit? What variables will affect the outcome you predict?

## ROUND 2: LIGHT BULB

What did you observe when the light bulb was attached the water-powered generator?

### 7. ANALYSIS

On a separate piece of graph paper, construct a graph to display your results.

### 8. CONCLUSION & DISCUSSION

Your conclusion is the answer to your Research Question in Section 2, along with reasoning that supports it. Explain your results. Use another sheet of paper if needed.

## 9. INNOVATION FOR CONSERVATION

You have just taken part in an experiment exploring the use of water as a source of power. How could your results be applied in your community to design efficient renewable energy systems that benefit people and the ecosystem?

## 10. SOURCES

Reference any works cited within this report. Include any formulas used.