



Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_  
Physics - Effect of Temperature on Solar Efficiency Lab Sheet

## Effect of Temperature on Solar Efficiency

### Setup:

To begin this investigation, your solar panel must be sealed inside your Ziploc bag and partially submerged in cold water for ~2-3 minutes. Take the panel out of the sealed bag and dry it off before arranging it under the light source.

Connect the multimeter to the positive and negative terminals of the solar panel.

### Procedure:

1. Measure the distance (m) from the light source to the solar panel: \_\_\_\_\_
2. Using the laser thermometer, record the temperature of the panel. Begin the timer and record the temperature, voltage, and current every minute for 15 minutes.

Time (minutes)	Voltage (V)	Current (A)	Power (W)	Temperature (C°)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

3. Using Excel, make three graphs: Voltage (V) vs. Temperature (C°), Current (mA) vs. Temperature (C°), and Power (W) vs. Temperature (C°). These should be attached on the second page of this document with axis labels, graph titles, and correct units.



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4. Complete the three graphs on Excel, save them as pdfs, and import them below.

## Graph Interpretation Questions

5. What is the relationship between current and temperature of the solar panel?
6. How does temperature affect voltage of the solar panel?
7. Is power increased or decreased with an increase in temperature of the panel, given consistent sunlight?