SOLAR SCIENCE STATION LAB

High School Student Page

1. RESEARCH QUESTION.

Which variable (angle, direction, hour or season) most impacts the voltage produced by the science station?

2. BACKGROUND KNOWLEDGE.

How does a solar panel work?	?	
Draw a sketch of a solar pane	el's main parts.	

3. HYPOTHESIS.

If (Independent Variable), then (Dependent Variable), because (Rationale).

e.g. If data is collected at different times of day, then the voltage will increase during the afternoon, because the sun's rays will strike at a more direct angle.

4. MATERIALS.

- Science stations
- Sunny location
- A protractor
- pen / pencil
- Timer/Stopwatch

5. PROCEDURE.

- a. Read through all of the instructions before you begin.
- b. **Gather** all materials.
- c. **Assign** the roles of timekeeper, a reader for each station, a writer, and everyone else are recorders.
- d. **Set** the angles of the Solar Science Stations to 0° , 22.5° , 45° , 67.5° , and 90° , or keep the angles the same an
 - e. **Find** a sunny place to set up your stations, keeping them covered from sunlight.
 - f. **Record** the Volts for each angle at 0 minutes.
 - g. **Uncover** the Science Station and begin timing.
 - h. **Read** the volt number every two minutes (or any other increment). **Remember** it and then say it out loud so that everyone can hear. Start with the reader for 0°, then 22.5°, and keep going.
 - i. **Record** the data for each angle. Be sure to get the right data in the right column.
 - j. **Continue** recording data until you have gotten to minute 12.

6. RESULTS.

6a. Data Table for comparing angles.

	ANGLE					DIRECTION				
Time (min)	O°	22.5°	45°	67.5°	90°	SW	SSW	S	SSE	SE
0										
2										
4										
6										
8										
10										
12										

- 6b. Graph your data below or on a separate piece of graph paper, including:
 - Key
 - Color
 - Label your axes
 - Include a title

7. CONCLUSION/DISCUSSION.

Write a paragraph to summarize your results. Include at least a sentence answer for each of the following:

- a. What is the question for this lab?
- b. What was the hypothesis?
- c. Was the hypothesis supported? Why or why not?
- d. What is you interpretation of the data? What did you see happening?
- e. What are some possible errors made and improvements that could be made to this lab?
- f. Further directions: What is something slightly different that could be tested next time?