SOLAR SCIENCE STATION LAB

Elementary Student Page

1. RESEARCH QUESTION.

Which angle will produce the highest voltage during a set time period?

2. BACKGROUND KNOWLEDGE.

How does a solar panel work?

Draw a sketch of a solar panel's main parts.

3. HYPOTHESIS.

If (Cause), then (Effect).

e.g. If the panel angle changes, then the voltage will stay the same.

4. MATERIALS.

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

	Volts produced at various angles				
Time (minutes)	0°	22.5°	45°	67.5°	90°
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.

Look at your graph. Which line had the highest voltage at the end?

Why do you think that this angle was the highest?

Was your hypothesis correct? How do you know?

What are some possible improvements we could make to the lab?

What is something slightly different that could be tested next time?