STEM Sims

¬Q^A Solar Cells

Lesson 1: Finding a Power Pattern with Solar Cells

Solar cells placed on a solar panel can generate power. It is your task to find the pattern for the power converted by a solar panel and to create an equation describing the pattern. Are you up for the challenge?

Doing the Science

- Start the Solar Cells Simulation by clicking on the "Sim" tab. 1.
- 2. Read the instructions provided.
- 3. Click on the "Power" button to find the amount of power in one solar cell. Record the results below in Table 1.
- Click on the "Solar Cells" bin to add a layer of six more solar cells to the solar panel. Record 4. the results.
- 5. Continue to add cells, recording the results, until all 61 solar cells are in the solar panel.
- 6. Reset the simulation and repeat steps 3 through 6 for Trial 2.
- 7. Starting from seven solar cells, find the "Difference of Watts" between the power supplied by the current number of solar cells and the power supplied by the previous number of cells. For example, the first Difference of Watts value would be the Amount of Power of seven solar cells minus the Amount of Power of one solar cell.

Number of Solar Cells	Amount of Power (Watts)	Difference in Watts
1		
7		
13		
19		
25		
31		
37		
43		
49		
55		
61		

Table 1.

Do You Understand?

- Was the "Difference of Watts" constant or changing? Please explain your response. 1.
- 2. How many watts of power does each solar cell supply?
- 3. Write an equation to determine the total amount of power given a number "n," which represents the number of layers. (Hint: Don't forget that you have one solar cell to begin with and that each layer contains six solar cells.)

Name