



# Solar Cells

## STEM Sims

### Lesson 3: Engineering a Solar Panel

Now that you've practiced using your equation and have come up with correct answers, the engineers at the solar power plant need your help! Are you ready for the quiz?

#### Doing the Science

1. Start the Solar Cells Simulation by clicking on the "Sim" tab.
2. Click on the yellow "Practice" button on top of the solar power.
3. Click on the "Quiz" button at the bottom right corner of the screen.
4. The total amount of power is given and you must find the number of solar cells, the number of layers, and the area of the panel. Use the equation that you created to help solve the problems. (Hint: The area of the one solar cell is  $75 \text{ cm}^2$ , so the total area of panel needed is the area of one solar cell  $\times$  the total number of solar cells.)
5. Input the answers into the text boxes and a "New Customer Number" will appear.
6. Record the customer energy needs, number of solar cells, number of layers, area of panels, and new customer number into Table 1 below.
7. Repeat steps 3-6 for more customer numbers.

**Table 1.**

Customer Energy Needs	Number of Solar Cells	Number of Layers	Area of Panels	New Customer Number

#### Do You Understand?

1. The area of the solar panel is  $3,675 \text{ cm}^2$ . Find the number of solar cells, the number of layers, and the total number of watts of power.
2. The area of the solar panel is  $3,225 \text{ cm}^2$ . Find the number of solar cells, the number of layers, and the total number of watts of power.