



Sun Banking

STEM Sims

Lesson 3: Cost Efficiency

Regular home energy bills can be pretty expensive; solar energy is not only cleaner, but also uses renewable resources. The startup cost of installing solar panels, however, is quite high. How can you be most efficient with your money?

Doing the Science

1. Start the Sun Banking Simulation by clicking on the “Sim” tab.
2. Make the following selections:
 - Season: Summer
 - Type of Panel: K1OTGM
 - Roof Direction: South
 - Annual kWh needs: 10,000
3. Click on the ADD PANELS button.
4. The K1OTGM panel you have selected is available to drag and drop. Drag as many panels as you can afford without going over \$10,000.
5. Record the number of panels in the first column.
6. Click on the BEGIN button, and wait for the simulation to complete.
7. Record the kWh produced daily.
8. Click on the RESTART button.
9. Repeat steps 2-7 to first account for the other budgets, and then change the panel type to M3DSOM and repeat again for all budgets.

Table 1.

| Budget | K1OTGM | | M3DSOM | |
|-----------|-------------|--------------|-------------|--------------|
| | # of Panels | kWh produced | # of Panels | kWh produced |
| \$10,000 | | | | |
| \$15,000 | | | | |
| \$20,000 | | | | |
| Unlimited | | | | |

Do You Understand?

1. When your monetary budget is unlimited, which panel type choice is better? Why?
2. Is the cost-efficiency decision the same whether your budget is \$10,000 or \$15,000? Why or why not?