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3D Solar

How does the shape of a solar panel affect the amount of energy produced? The purpose of this project was to determine how much energy is produced from 3 different 3D shaped solar panel in comparison to a 2D solar panel. I hypothesis that a pyramid shaped solar cell, with one edge of the pyramid facing Southeast and one facing Southwest, will produce the most power. I believe this because the pyramid will have maximum exposure to the sun as the sun rises in the East and sets in the West. The pyramid 3D shape will have the most surface area exposed to the sun throughout the day. For my procedure I used styrofoam 3D shapes and made three different design and had a flat panel as my control. Each design had 24 solar cells connected in a series. The energy produced was measured using a amperage meter with a built-in resistor and recorded. Testing was completed on three different days, with the majority of the day having full sun. The results were recorded and then entered into an Excel Spreadsheet for analysis. The pyramid produced the highest amount of power(watts) as an average from the three days of testing. My hypothesis was correct related to the pyramid producing the highest amount of energy and higher amounts than the flat control. This experiment could be used for future design of houses, commercial buildings, and possibly transportation.