Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_

The US Energy Information Administration says that almost 45% of all energy used in the average household is used to heat or cool the home. Many people spend a lot of money on heating in the winter and cooling in the summer, to keep the home at a constant temperature. Can sustainable design help save money?

This graph shows how the temperature changes over time inside two different homes. One is a regular home, while the second home has an aluminum roof. The aluminum roof is one strategy that could keep energy costs down in warmer climates, as it reflects light and keeps the roof (and home) from absorbing too much heat.

What differences do you see between the two homes in how the temperature changes over time?

If you wanted to keep each home at a constant temperature (such as 80 degrees), which home would require more energy (and therefore money) to keep cool?

Would an aluminum roof be a good way to reduce energy costs where it gets cold in winter? Why or why not?

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What differences do you see between the two homes in how the temperature changes over time?

**Regular home temperature fluctuates a lot more, while the aluminum roof keeps the other temperature relatively constant.**

If you wanted to keep each home at a constant temperature (such as 80 degrees), which home would require more energy (and therefore money) to keep cool?

**Regular home. More energy would be required to bring the temperature back to 80.**

Would an aluminum roof be a good way to reduce energy costs where it gets cold in winter? Why or why not?

**Probably not – it is effective in a place like Florida, where it reflects heat energy instead of absorbing it and making the house warmer (requiring more energy to cool down). In a place like Michigan, this would make the house colder in winter and require more heating.**