

WHICH IS MORE ENERGY EFFICIENT? APARTMENT OR HOUSE?

Aim

The aim of the experiment is to find whether a house or an apartment is more energy efficient and is able to hold more heat from the sun.

Hypothesis

If the type of building is a singular house, then the temperature of the house will increase because the heat concentration will not disperse or decrease.

Introduction

The issue of difference in energy efficiency and insulation between houses and apartments is important to the everyday lives of many people, the economy, and climate change. This is because when buildings do not heat up enough from the sun, people have to pay for extra heating or better insulation. It will also affect what building companies and the government decide to build and spend money on, as investing in non-energy efficiency buildings is bad for the economy and the environment.

This will help people in the real world understand more about what building type should be used to improve the economy and carbon emissions.

Conclusion

The results show that the temperature of the house increased more in the same amount of time than in the apartment. For example, the starting temperature for the house was 24 degrees Celsius, and after four minutes it was 26.4 degrees Celsius, however, the starting temperature for the apartment was 24 degrees Celsius, and after four minutes only rose up to 24.6 degrees Celsius. Therefore, there is a positive, consistent correlation between the house and the temperature rise. Our hypothesis was correct. This is because it stated that the house model would heat up faster and have better insulation than the apartment model and that is what the results graph shows. The difference in the average change of temperature between the house model and the apartment model is 0.9 degrees Celsius.

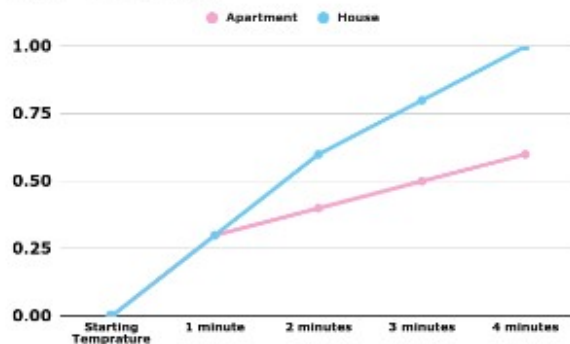
Errors and Limitations

One of the main errors that affected the results of the experiment, was that there weren't enough foam squares to use as walls for the apartment. To get around this problem, plastic squares were used to fill in the walls that weren't filled in by the foam.

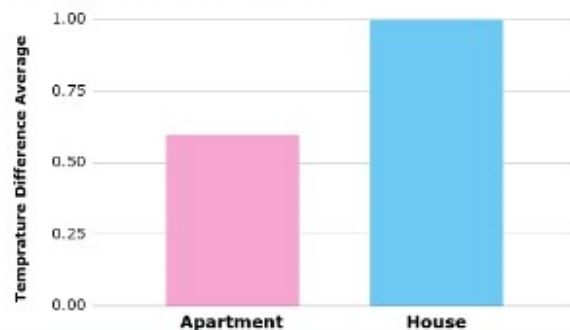
If this experiment was repeated, it could ensure that there is a sufficient amount of the same material, so the results will only be affected by one variable and are more accurate.

Another problem that made this experiment unrealistic is that houses and apartments in real life aren't made entirely of foam. However, in the Stellar House Kit, there weren't the right materials to make the apartment and house with the same materials as in real life.

Do Apartments or houses heat up more over 4 minutes?



Do Apartments or Houses heat up more over 4 Minutes?



Method

1. The apartment building model was built.
2. The light and retort stand was set up.
3. The cables were connected and the power supply was turned on.
4. The results were recorded.
5. Step 4 was repeated two more times.
6. Steps 1-5 were repeated with the house model instead of the apartment building model.