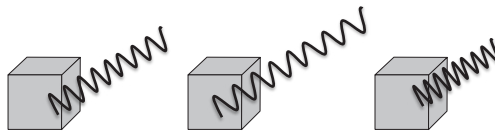


Checkout Questions

Lab 18. Radiation and Energy Transfer

What Color Should We Paint a Building to Reduce Cooling Costs?

1. Each of the objects below was left in sunlight for one hour. Each object reflects a different wavelength of light, as shown below, and absorbs the other wavelengths. At the end of the hour, which object would you expect to have the highest average temperature?



Explain your answer. Why do you think that object will have the highest average temperature at the end of the hour?

2. Shelby is choosing a solar panel to gather energy from the Sun for heating her home. There is one model available, but it comes in three colors. The first color reflects light with wavelengths between 350 and 400 nm, the second between 600 and 700 nm, and the third reflects no visible light. Which option is the best choice for Shelby if she wants her solar panel to absorb the most energy possible?

Explain your answer. Why did you recommend that option to Shelby?

3. In science, laws are more important than theories.

- a. I agree with this statement.
- b. I disagree with this statement.

Explain your answer, using an example from your investigation about radiant energy transfer.

4. Regardless of the question you want to answer, an experiment is always the best way to conduct a scientific investigation.

- a. I agree with this statement.
- b. I disagree with this statement.

Explain your answer, using an example from your investigation about radiant energy transfer.

5. Scientists often need to look for and understand the underlying cause of events in nature. Explain why it is important to be able to identify and understand cause-and-effect relationships in science, using an example from your investigation about radiant energy transfer.

6. Scientists often need to keep track of the flow of energy within systems. Using an example from your investigation about radiant energy transfer, explain why it is important to keep track of how energy moves into, out of, and within systems.