

Name: _____ Date: _____

Answer Key: Sizzling Science Thermal Expert Pre-K Quiz

Preschoolers analyze energy flow and thermal changes in 10 advanced scenarios through predictive thinking and material evaluation.

1. You have two toy cars. One was in the freezer and one was under a sunny window. Which car wants to 'steal' heat from your warm hand to feel balanced?

Answer: B) The car from the freezer

Heat naturally moves from warmer objects (your hand) to colder objects (the frozen car) until they reach the same temperature.

2. When you put a cold metal slide in the sun, it can eventually get hotter than your skin because it is better at catching sun energy.

Answer: A) True

Materials like metal absorb and conduct heat very efficiently, leading to rapid temperature increases in direct sunlight.

3. If we want to keep a penguin ice sculpture from melting, we should wrap it in a ___ blanket.

Answer: B) Thick wool

A thick wool blanket is an insulator; it slows down the heat from the air from reaching the cold ice.

4. Look at a steaming bowl of oatmeal. Where does the 'ghostly' steam go when the oatmeal gets cold?

Answer: B) It carries heat away into the air

Evaporation and convection carry thermal energy away from the food, cooling it down as the heat moves into the cooler room.

5. Imagine you are an engineer. To stop heat from leaving a house in winter, you should block the ___.

Answer: C) Gaps in windows

Sealing gaps prevents convection, which is the movement of warm air escaping to the cold outside.

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6. If you put a hot potato and a cold potato together in a box, they will eventually both become the same 'medium' temperature.

Answer: A) True

This demonstrates thermal equilibrium, where heat transfers from the hot object to the cold one until they are balanced.

7. If you stir a cup of hot cocoa with a plastic spoon and a silver spoon, which one will send a 'heat signal' to your fingers first?

Answer: B) The silver spoon

Metal is a better conductor than plastic, meaning heat travels through it much faster to reach your hand.

8. When we rub our hands together very fast, we are turning ___ into heat.

Answer: B) Movement

Friction (a form of work/energy) creates thermal energy, showing that energy can change forms.

9. A refrigerator is a magic machine that creates 'cold' out of nothing without using any power.

Answer: B) False

Moving heat from a cold place to a hot place requires work (electricity), as heat does not move that way on its own.

10. Why does a marble floor feel colder than a rug, even if they have been in the same room all night?

Answer: C) The marble pulls heat out of your feet faster

Even at the same temperature, materials that conduct heat well (like marble) pull energy away from our skin faster, making them feel colder.