Name: _____ **Date:** _____

The Thermal Detective: 2nd Grade Heat Flow Analysis Quiz

Examine 10 high-level scenarios to predict energy movement through friction, insulation, and solar absorption in real-world environments.

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1. Mila is rubbing two smooth stones together very quickly. After one minute, the stones feel warm. Why did this happen?

A. The stones are soaking up heat from the air.
B. Rubbing creates friction, which turns movement into heat.
C. Coldness is leaking out of the stones into Mila's hands.
D. Smooth stones are naturally hot inside.

2. If you put a thick wool sweater on a cold snowman, the sweater will generate its own heat to melt the snowman quickly.

A. True
B. False

3. Leo places a black piece of paper and a white piece of paper in the bright sun. The black paper feels much hotter because it _____ more sunlight.

A. reflects
B. creates
C. absorbs
D. ignores

4. An engineer is designing a lunchbox to keep soup hot. Which material would be the BEST choice for the inner lining to stop heat from escaping?

A. A thin sheet of copper metal
B. A layer of thick plastic foam
C. A damp paper towel
D. A solid silver foil

5. When you put a room-temperature metal spoon into a bowl of ice cream, the spoon gets cold because the heat moves _____ the spoon.

A. out of
B. into
C. around
D. inside

6. Heat energy can move through the empty vacuum of space even if there is no air or water to carry it.

A. True

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B. False

7. Imagine you have two cups of water. Cup A is 100 degrees and Cup B is 50 degrees. If you mix them together, what is the most likely final temperature?

A. 150 degrees
B. 25 degrees
C. 75 degrees
D. 0 degrees

8. In a bakery, the air near the ceiling is much warmer than the air near the floor. This is because warm air _____.

A. sinks
B. rises
C. disappears
D. freezes

9. Scientifically speaking, 'cold' is just the absence of heat energy; it is not a 'thing' that moves into objects.

A. True
B. False

10. Why does a piece of chocolate melt faster on a metal slide than on a wooden bench on a sunny day?

A. The wood is actually colder than the air.
B. Metal is a conductor that transfers heat to the chocolate quickly.
C. Wood is a better conductor than metal.
D. Chocolate only melts when it touches metal.