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Crash Course Physics #22: The Physics of Heat

Name: _____ Date: _____

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1. Temperature is the measure of the average _____ energy of each molecule in a substance.
2. The total kinetic energy of all the molecules in a system is called _____ energy.
3. The amount of thermal energy transferred into or out of a system is known as _____.
4. In equations, heat is represented by the capital letter _____.
5. The amount of heat required to raise the temperature of one gram of water by one degree Celsius is one _____.
6. The _____ of a substance is a measure of how well it stores heat.
7. The equation for heat transfer during a temperature change is: $Q = \text{mass} \times \text{specific heat} \times \Delta T$.
8. The amount of heat required to change a substance's phase is called _____ heat.
9. The heat needed to change a solid to a liquid is called the heat of _____.
10. The heat needed to change a liquid to a gas is called the heat of _____.
11. Heat transfer through direct contact between molecules is called _____.
12. The measure of a material's ability to conduct heat is called thermal _____.
13. Heat transfer by the movement of fluids or gases is called _____.
14. Heat transfer via electromagnetic waves is known as _____.
15. The equation that describes the amount of heat radiated over time is called the _____ equation.

Crash Course Physics #22: The Physics of Heat KEY

1. Temperature is the measure of the average **kinetic** energy of each molecule in a substance.
2. The total kinetic energy of all the molecules in a system is called **thermal** energy.
3. The amount of thermal energy transferred into or out of a system is known as **heat**.
4. In equations, heat is represented by the capital letter **Q**.
5. The amount of heat required to raise the temperature of one gram of water by one degree Celsius is one **calorie**.
6. The **specific heat** of a substance is a measure of how well it stores heat.
7. The equation for heat transfer during a temperature change is: $Q = \text{mass} \times \text{specific heat} \times \Delta T$.
8. The amount of heat required to change a substance's phase is called **latent** heat.
9. The heat needed to change a solid to a liquid is called the heat of **fusion**.
10. The heat needed to change a liquid to a gas is called the heat of **vaporization**.
11. Heat transfer through direct contact between molecules is called **conduction**.
12. The measure of a material's ability to conduct heat is called thermal **conductivity**.
13. Heat transfer by the movement of fluids or gases is called **convection**.
14. Heat transfer via electromagnetic waves is known as **radiation**.
15. The equation that describes the amount of heat radiated over time is called the **Stefan-Boltzmann** equation.

15 Questions

Answer Key Included

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