Name _____

How is Heat Transferred Between Objects?

Short Answer Key

1. Conduction is the transfer of heat through solids, where particles are closely packed. An example is placing a metal spoon in a hot cup of coffee; the heat from the coffee is conducted through the spoon, making the handle hot.
2. A real-life situation where convection is at work is boiling water in a pot. When the pot is heated, the water at the bottom becomes hot and rises, while cooler water moves in to replace it, creating a convection current.
3. Radiation differs from conduction and convection because it does not require a medium (matter) to transfer heat. An example of radiation in everyday life is feeling the warmth of the Sun on a sunny day, even in the vacuum of space.
4. One specific application where understanding heat transfer is crucial is in the operation of engines, such as those in cars. It's important because engines convert heat energy into mechanical work to power vehicles.
5. Heat transfer in engines is vital because it allows the conversion of heat energy into mechanical work to propel the vehicle. In a car engine, for example, fuel combustion produces heat, which expands gases and drives the engine's pistons, ultimately moving the car.