



Section 1: Key Vocabulary	
Key Word	Definition
Thermal Energy	Heat energy - this heat is generated by the movement of tiny particles within an object
Temperature	A measure of the warmth or coldness of an object or substance
Thermometer	Used to measure the temperature of an object
Conduction	The transfer of heat energy in solids
Convection	The transfer of heat energy in a liquid or a gas.
Radiation	The transfer of heat energy by electromagnetic waves without involving particles
Conductor	A good conductor will allow heat to travel through it
Insulator	A material that does not let heat pass through it. They usually have air trapped in them
Infrared	Infrared light is a type of light that feels warm but cannot be seen
Thermal Imaging	An image that shows heat being given off objects
Insulation	A layer of material around an object to stop heat escaping

Section 2: Quick Questions	
What happens to particles as they gain more thermal energy?	They vibrate more rapidly in solids and start moving more quickly in fluids
What is an equilibrium?	Equilibrium is when an object and its surroundings are the same temperature
What factors affect the amount of thermal energy need to increase the temperature?	The mass (amount) of the material, the material itself and how much you want to increase the temperature by
How does conduction lead to heat transfer?	Particles vibrate more rapidly, colliding with neighbouring particles, causing them to vibrate
How does convection lead to heat transfer?	Fluid particles move more rapidly, moving away from the heat source to colder areas
What is a convection current?	As fluids are heated, they expand, which causes them to rise - colder fluids move in to replace them and in turn become heated
How does radiation lead to heat transfer?	An electromagnetic wave transfers heat energy without transferring particles
How do insulators work?	Insulators reduce heat transfer by conduction and convection by vacuums or trapped air, and radiation by reflective surfaces

Section 3: Helpful Diagrams

CONVECTION

RADIATION

HEAT

CONDUCTION

Diagram of Conduction

↑Heat ↑Heat ↑Heat

Convection current

Hot, less dense water rises

Water cools, becomes more dense, sinks

Section 4: Video Links