Name: _____ Unit 8:4

Period: _____ 19

1. Conduction B	A. Heat transfer through electromagnetic waves.
2. Thermal Equilibrium D	B. Thermal (heat) transfer by the contact (touching) of two objects.
3. Radiation A	C. Transfers heat by moving currents in gases and liquids.
4. Wind F	D. When two objects are at the same temperature.
5. Convection C	E. The study of how heat moves.
6. Thermo-dynamics E	F. Caused by convection currents in the earth's atmosphere.

1. Insulator E	A. A region of space that contains no matter.
2. Conductor C	B. Allows convection, but is a very good insulator.
3. Vacuum A	C. Any material that easily allows heat to move through it.
4. Solid F	D. Allows convection; can be a good conductor of heat.
5. Liquid D	E. Any material that resists the movement of heat through it.
6. Gas B	F. No convection can occur in this.

What Kind of Thermal Transfer?
1. Conduction; 2. Convection; 3. Radiation

2 When hot air rises.	2 Causes wind.
1 When two objects are touching.	1 Between a stove and a pot. (touching)
3 When nothing is touching.	2 Within a pan of water.
1 When atoms collide.	3 More occurs with dark objects.
3 Transfers heat in all directions.	3 Through a hot car's closed windows at night.

Which of the following are at thermal equilibrium?

A. 25°C | 5°C

C. 5°C | 5°C

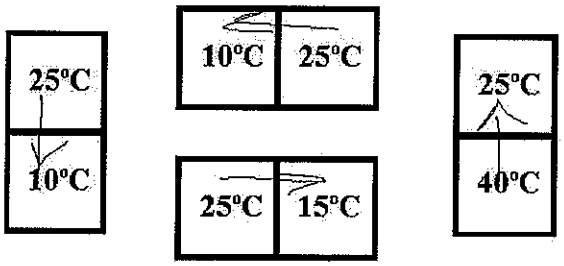
B. 25°C | 25°C

D. 5°C | 25°C

Thermal Insulator or Thermal Conductor?

C Metal	I Glass	I A coat
I Wood	C A penny	I Styrofoam
I Air	C Water	C Aluminum

Draw an arrow for each of the following pair of objects showing the direction of the thermal transfer.



Do the following heat Quickly or Slowly thru radiation?

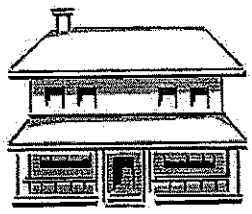
Q Dark liquids	Q Dull objects	S Aluminum
S Clear liquids	S White paper	S Styrofoam
S Shiny objects	Q Black paper	Q Dark car

Does heat rise? No Does hot air rise? Yes

Why or why not? Less dense

If there is a fireplace on the first floor, after a couple of house which floor of the house will be warmer? top floor

Why? hot air rise



Is this diagram correct or incorrect and why?

going from cold to hot

Heat transfer ←

25°K | 15°K

Which will stay warm longer: a cup of coffee or a cup of coffee being stirred?

Why? transfers hot molecules to cold sides → forced convection

If your student desk has been in the room for many hours, it is at thermal equilibrium with the room? yes

Which part of your desk is colder: the wood or the metal? Same

Why? but the metal feels colder because it is a better conductor.

Fast, Medium, or Slow Molecules?

M Liquids	F Gases (hot)	S Solids
M Water	S Cold objects	S Ice
F Hot objects	F Steam	F Helium