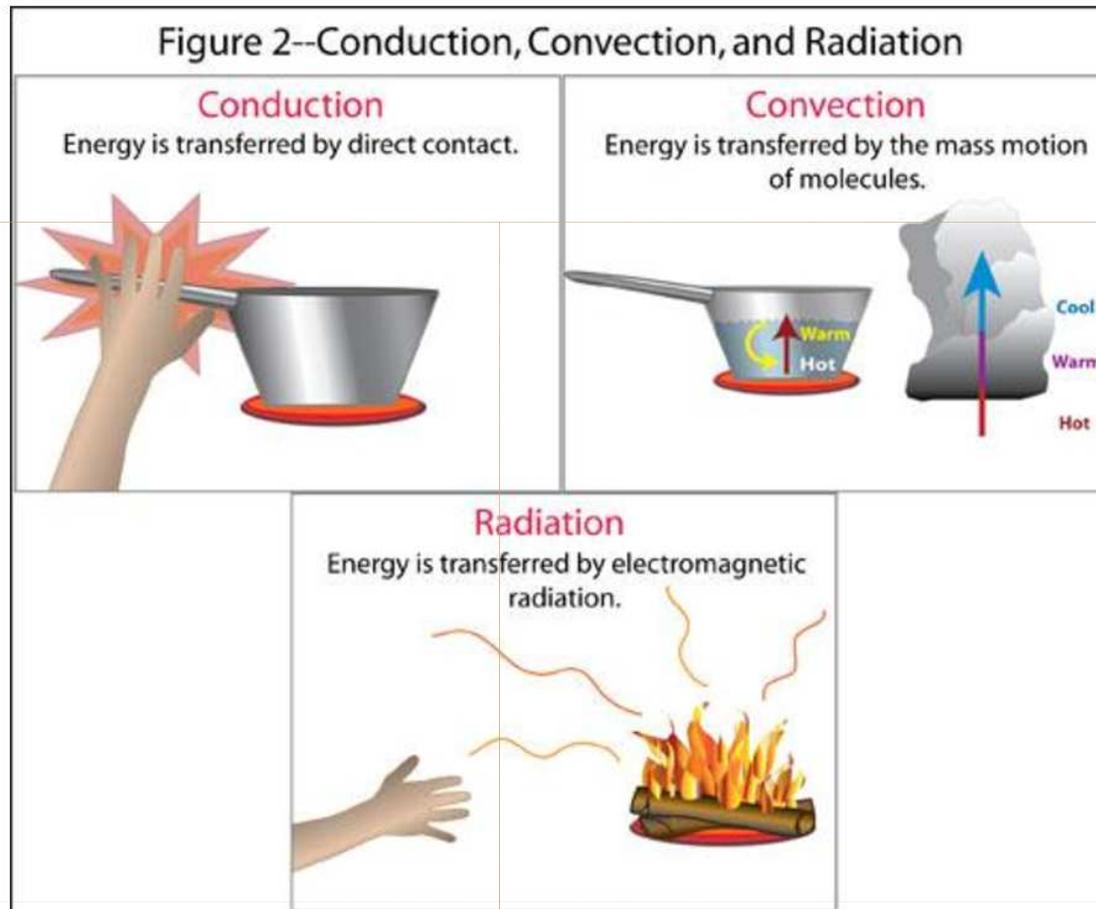


Heat Transfer

Conduction, Convection and Radiation



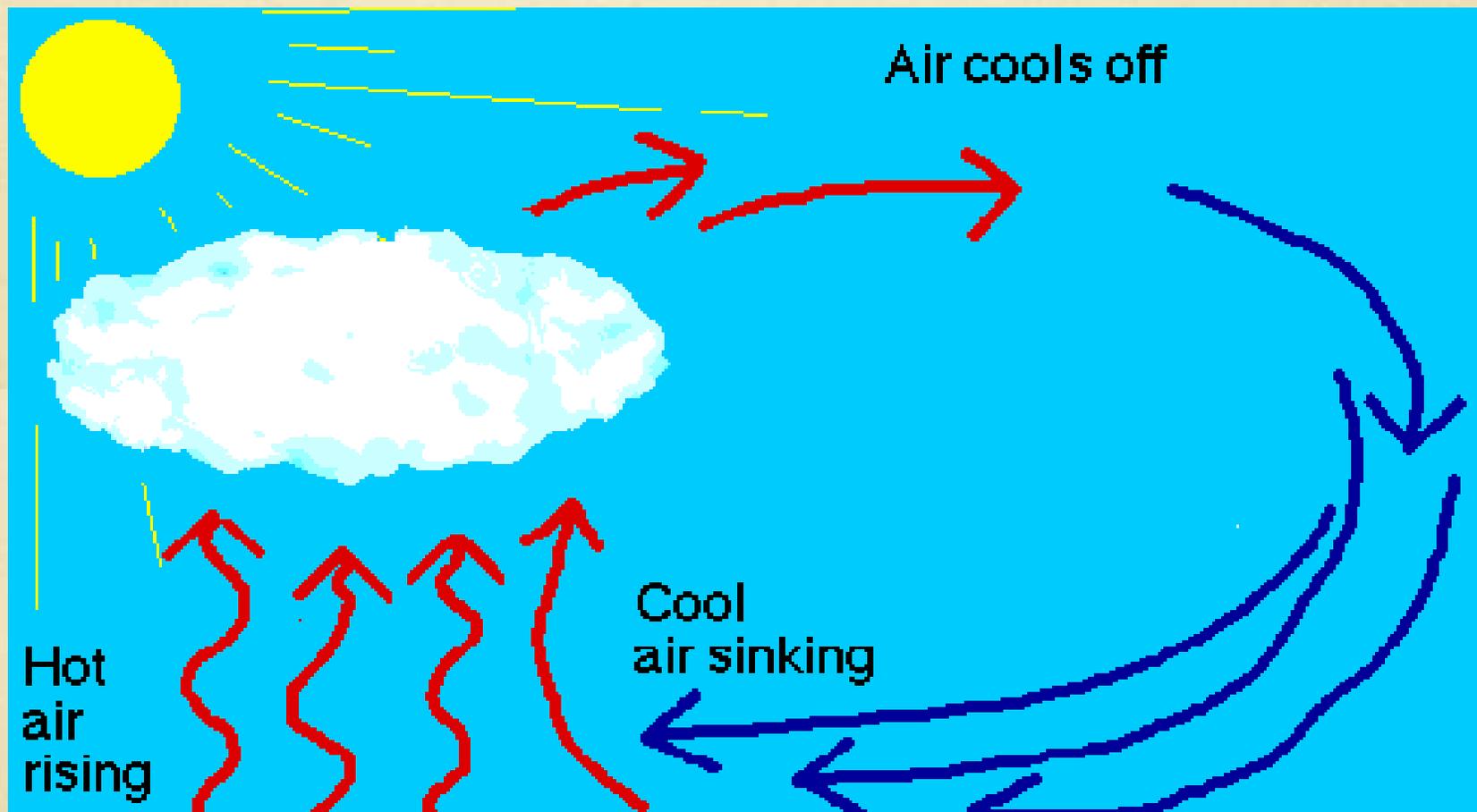
Convection, Conduction
and Radiation

Vocab Word: Convection

- Word Parts:
 - Pre: Con- with/together
 - Root: Vect- carry
 - Suffix: tion- action of

Teacher Definition

- The movement of liquid or air due to differences in density that are caused by temperature variations can result in the transfer of energy as heat



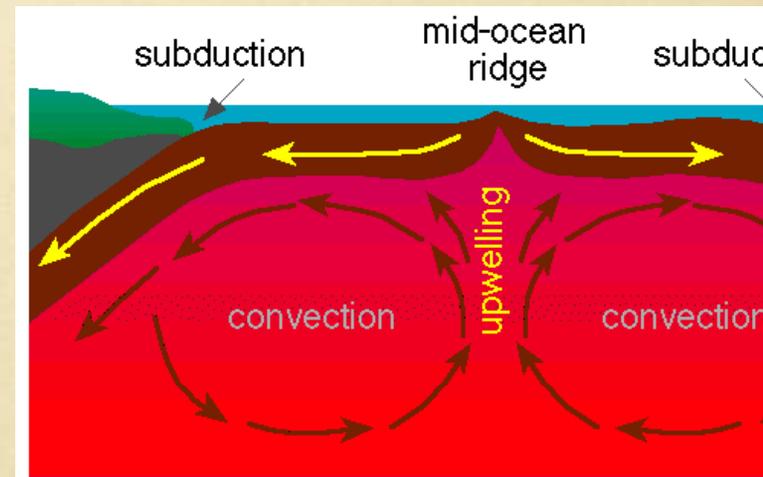
Convection

- Convection occurs when air or liquid is unevenly heated.
- Warm air and liquid is less dense than cool air and liquid and therefore rises.
- The warm air or liquid pushes the cool air or liquid aside and the cool air or liquid will sink.

Compare/Synonyms/Example

- What are examples of things that move as the result of differences in density?

- Mantle convection
- Boiling water
- Air balloons
- Lava lamp



Examples

- What types of energy transfer are not due to differences in density (convection)?
 - Electricity
 - Frying an egg
 - Solar panels
 - Wind energy



Visual

- In the visual box draw a picture that will help you remember how energy is transferred in convection. You may use one of the examples we came up with or a new example.
- Remember a key component to convection is hot less dense material rises and cooler more dense material sinks, include this in your visual.

In my own words

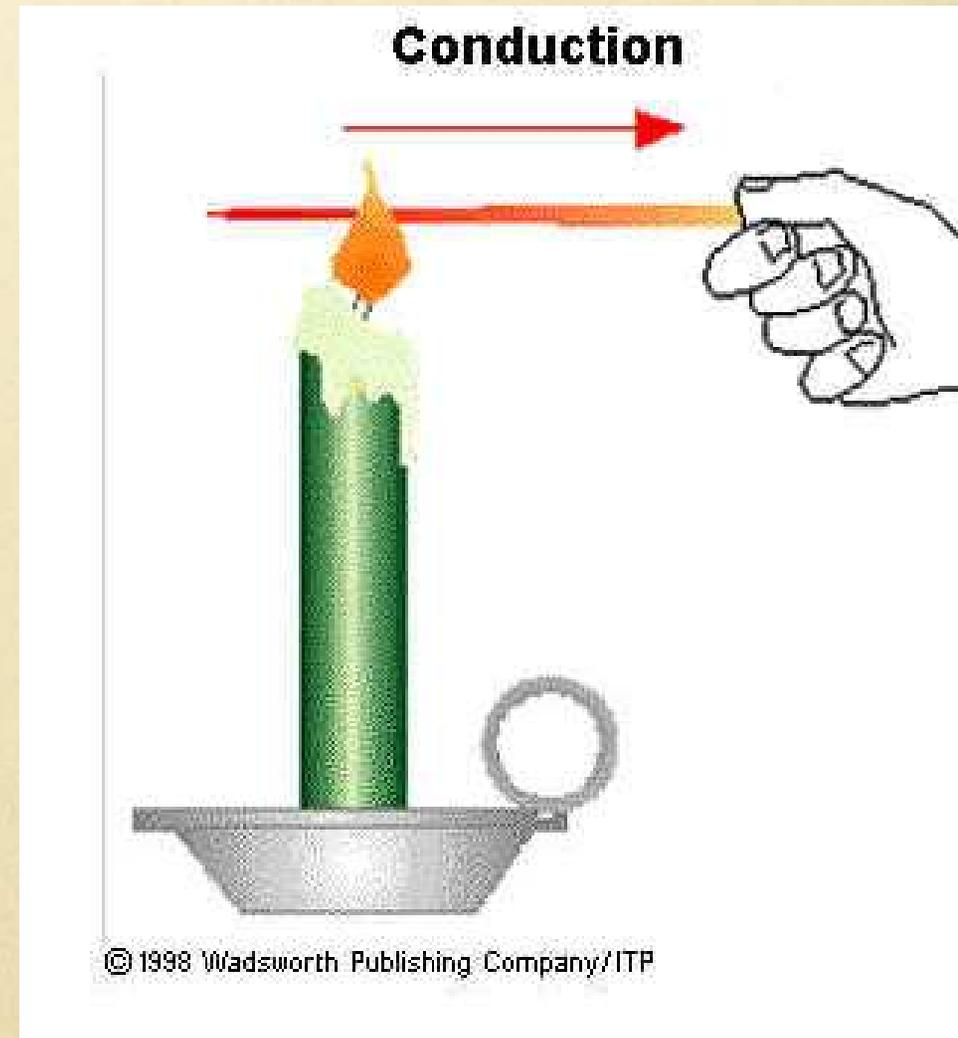
- Put the definition of the word into your own words.
- Describe the word how you would to a student in 6th grade. They won't know the same words you do, so simplify it.

Vocab Word: Conduction

- Word Parts:
 - Pre: Con- with/together
 - Root: Duct- lead
 - Suffix: tion- action of

Teacher Definition

The flow of energy as heat from a region of higher temperature to a region of lower temperature by the interaction of adjacent particles



Conduction

- Conduction occur when there is a transfer of energy (heat) between two substances that are in direct contact.
- When particles are heated they move faster
- Collision of particle cause a transfer of energy (heat)

Compare/Synonyms/Example

- What are examples of things that transfer energy (heat) from one region to another?
 - Cooking food
 - Hot handle on a pan
 - Setting a metal spoon in hot water



Examples

- What types of energy transfer are not as result of heat transfer from a region of higher temperature to a region of lower temperature?
 - Mantle Convection
 - Boiling water
 - Wind energy

Visual

- In the visual box draw a picture that will help you remember how energy is transferred in conduction. You may use one of the examples we came up with or a new example.
- Remember on the the key components to conduction is the physical contact between an object with high temperature and an object with cooler temperature. Include this in your visual

In my own words

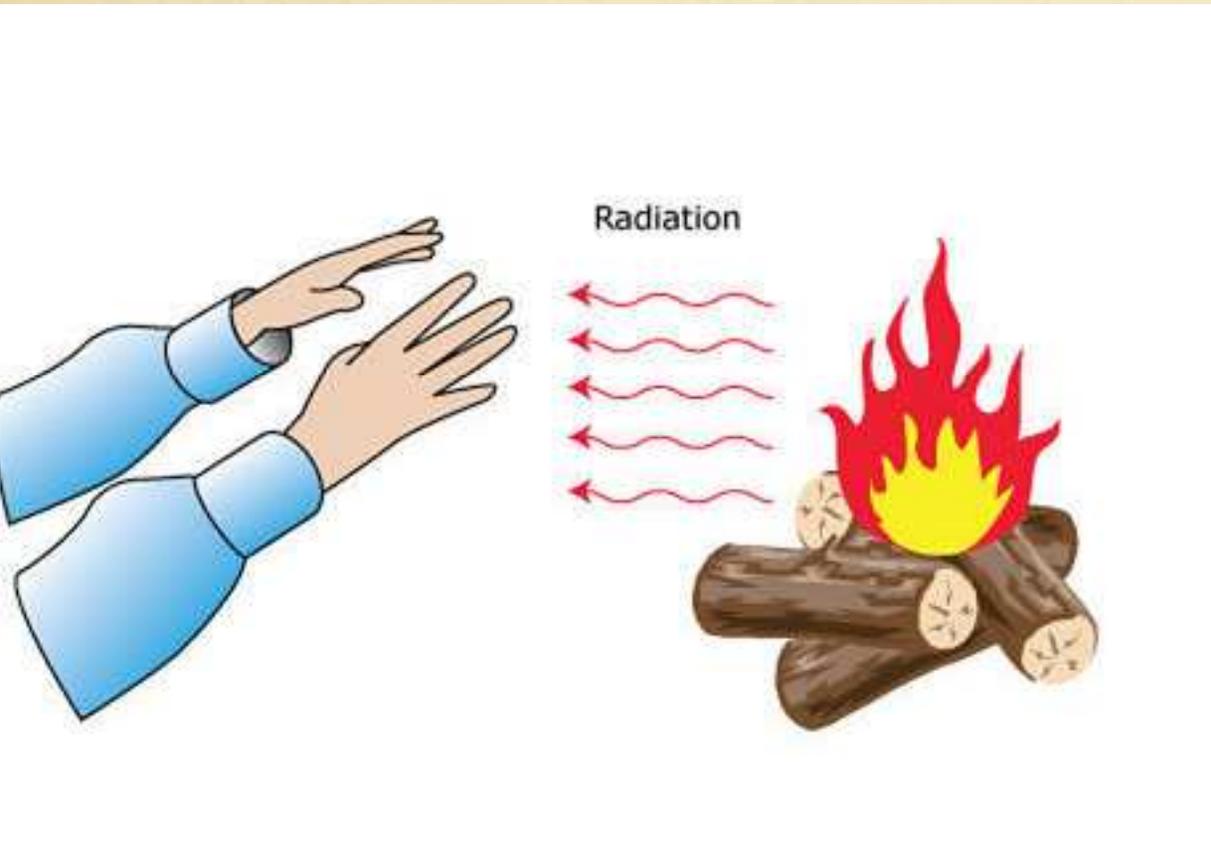
- Put the definition of the word into your own words.
- Describe the word how you would to a student in 6th grade. They won't know the same words you do, so simplify it.

Vocab Word: Radiation

- Word Parts:
 - Pre:
 - Root: Radi- ray
 - Suffix: tion- action of

Teacher Definition

The transfer of energy by means of photons that travels from its source in waves



Radiation

- Radiation is energy that travels in waves and are part of the electromagnetic spectrum.
- All objects above absolute zero (0 Kelvin) emit radiation.
- Hot objects emit more radiation than cooler objects.

Compare/Synonyms/Example

- What are examples of energy transfer that are due to photons traveling in the form of waves?



- Sun warms your face
- Solar Panels
- Warming hands by fire

Examples

- What types of energy transfer are not as result of photons traveling in the form of waves?
 - Mantle Convection
 - Hot handle of a pan
 - Wind energy

Visual

- In the visual box draw a picture that will help you remember how energy is transferred in radiation. You may use one of the examples we came up with or a new example.
- Remember one of the key components to radiation is energy traveling in the form of waves so include this in you visual

In my own words

- Put the definition of the word into your own words.
- Describe the word how you would to a student in 6th grade. They won't know the same words you do, so simplify it.

- Draw the following picture on the left side of your ISN. Label the three boxes as either Convection, Conduction, and Radiation.
- Write 3 sentences for each term explaining how the example you chose is that term and how energy is transferred in that example

