

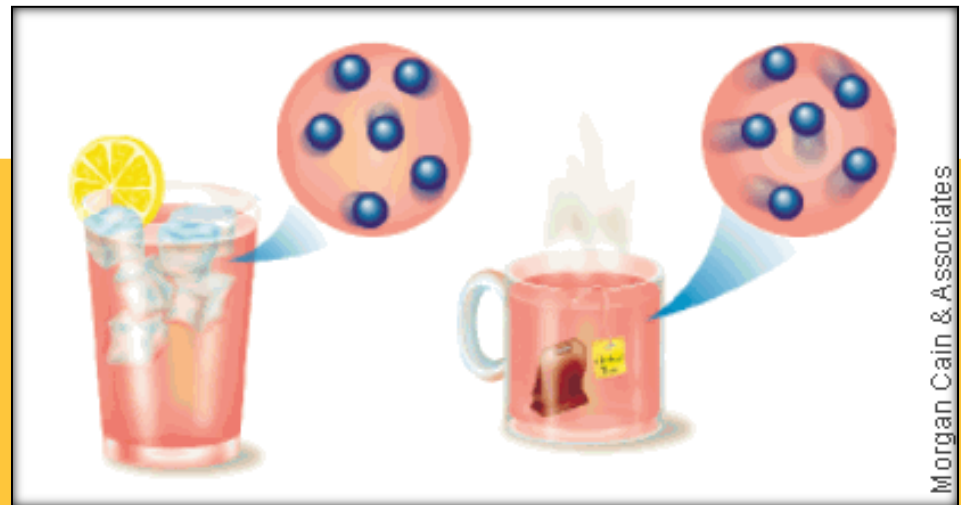
# **THERMAL ENERGY:**

CONVECTION, CONDUCTION, AND RADIATION

**Thermal Energy**: is the total energy of motion in the particles of a substance.

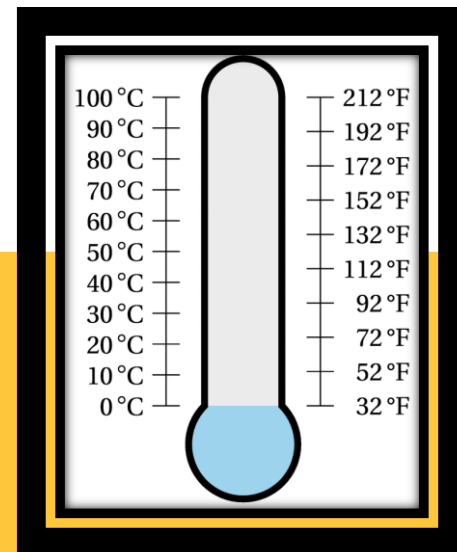
**Example:** A teapot full of hot tea has more thermal energy than a cup full of hot tea because there are more particles in the pot.

**Heat**: is the transfer of thermal energy from a hotter object to a cooler one.

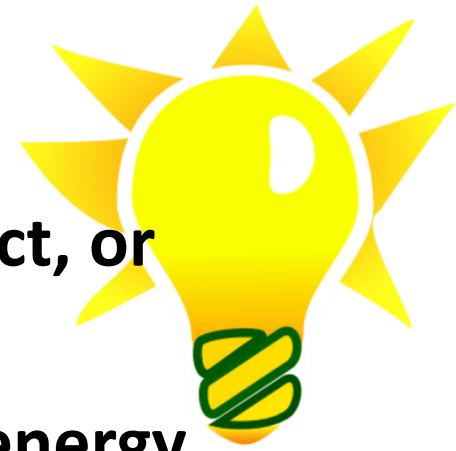




**Temperature**: is the average amount of energy of motion of each particle of a substance. (A measure of how hot or cold something is.)



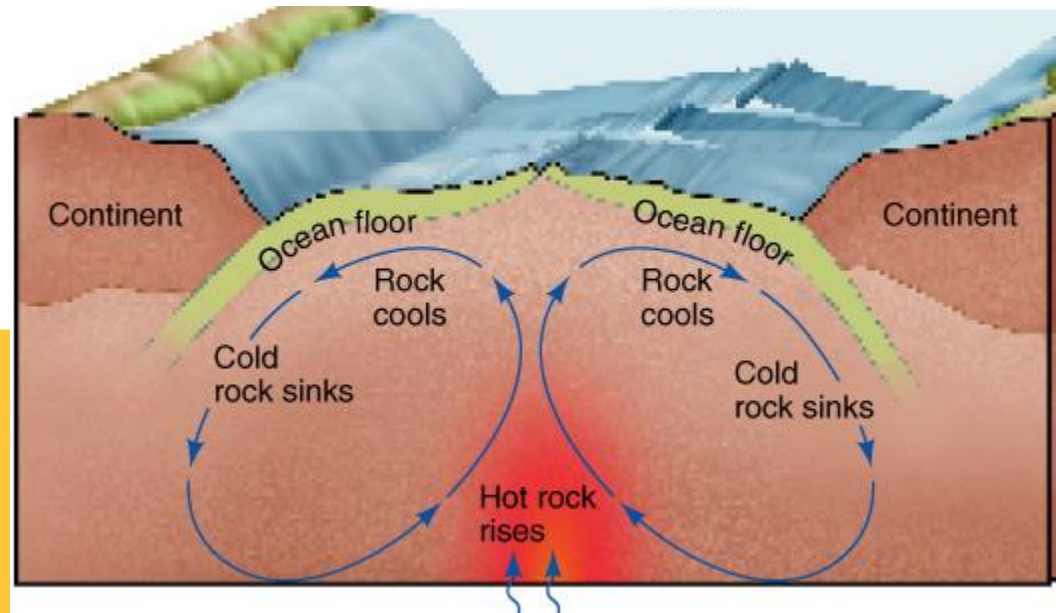
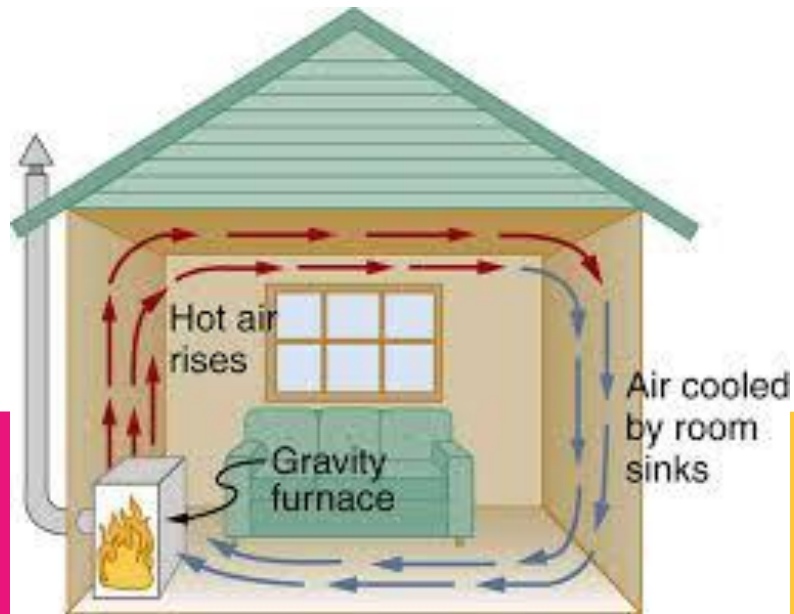
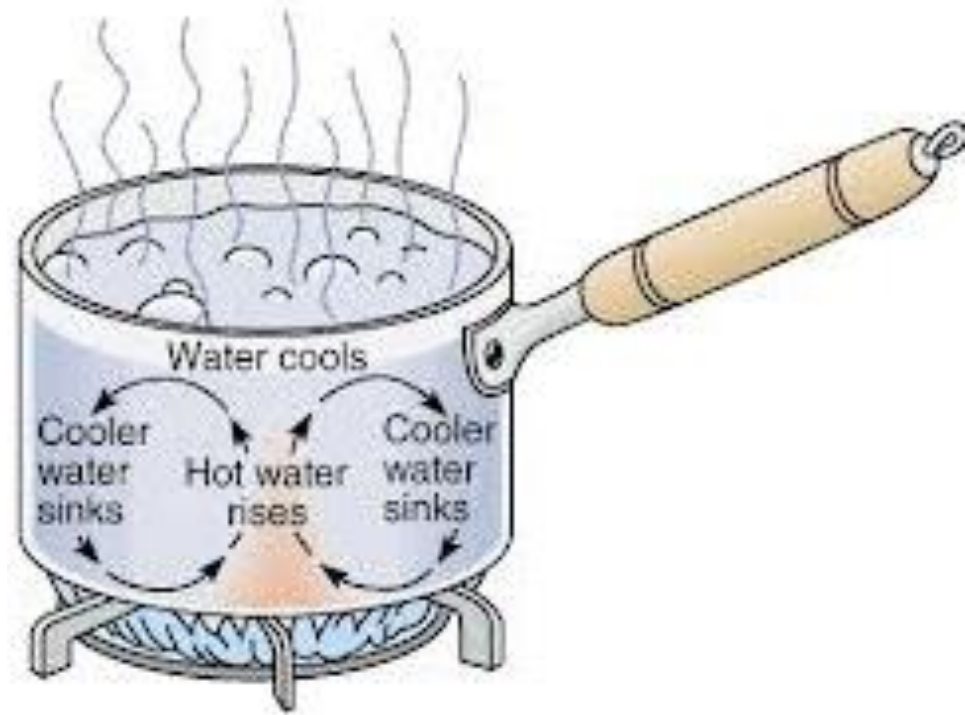
# **KEY IDEAS:**



- Energy can move from one place, object, or system to another.
- Substances heat or cool as a result of energy transfer.
- Energy transfers from warmer matter to cooler matter until both reach the same temperature.
- Heat transfers occur in three ways: by radiation, conduction, and convection.

# CONVECTION:

is the transfer of heat by the movement of a fluid.



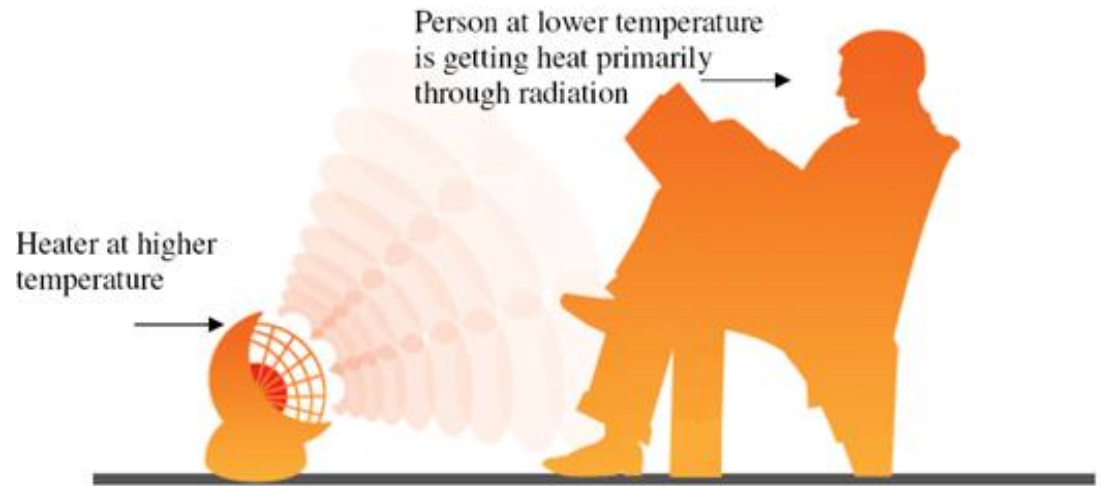
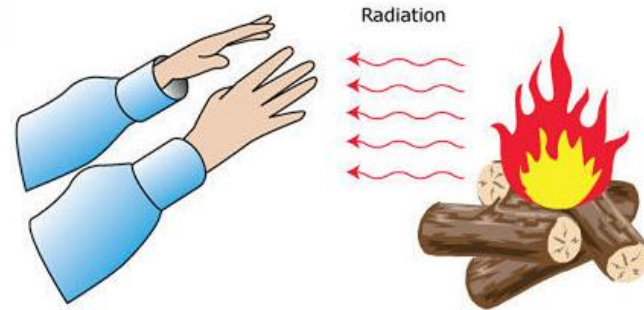
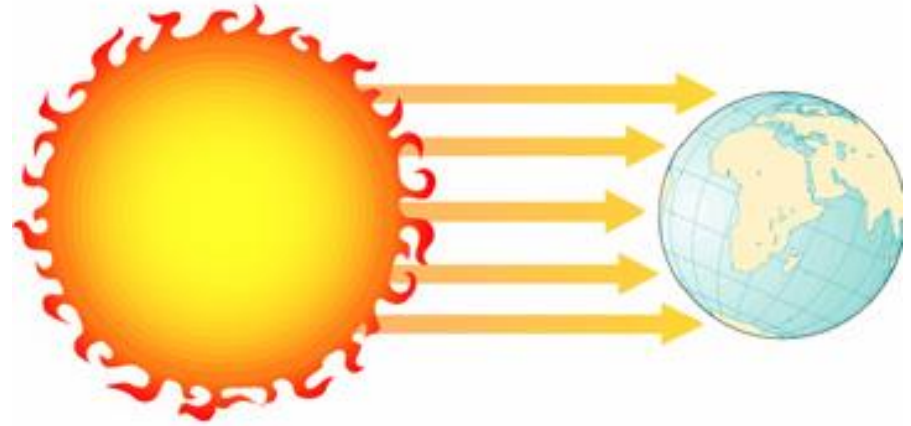
# CONDUCTION:

Is the direct transfer of heat from one substance to another substance that it is touching.

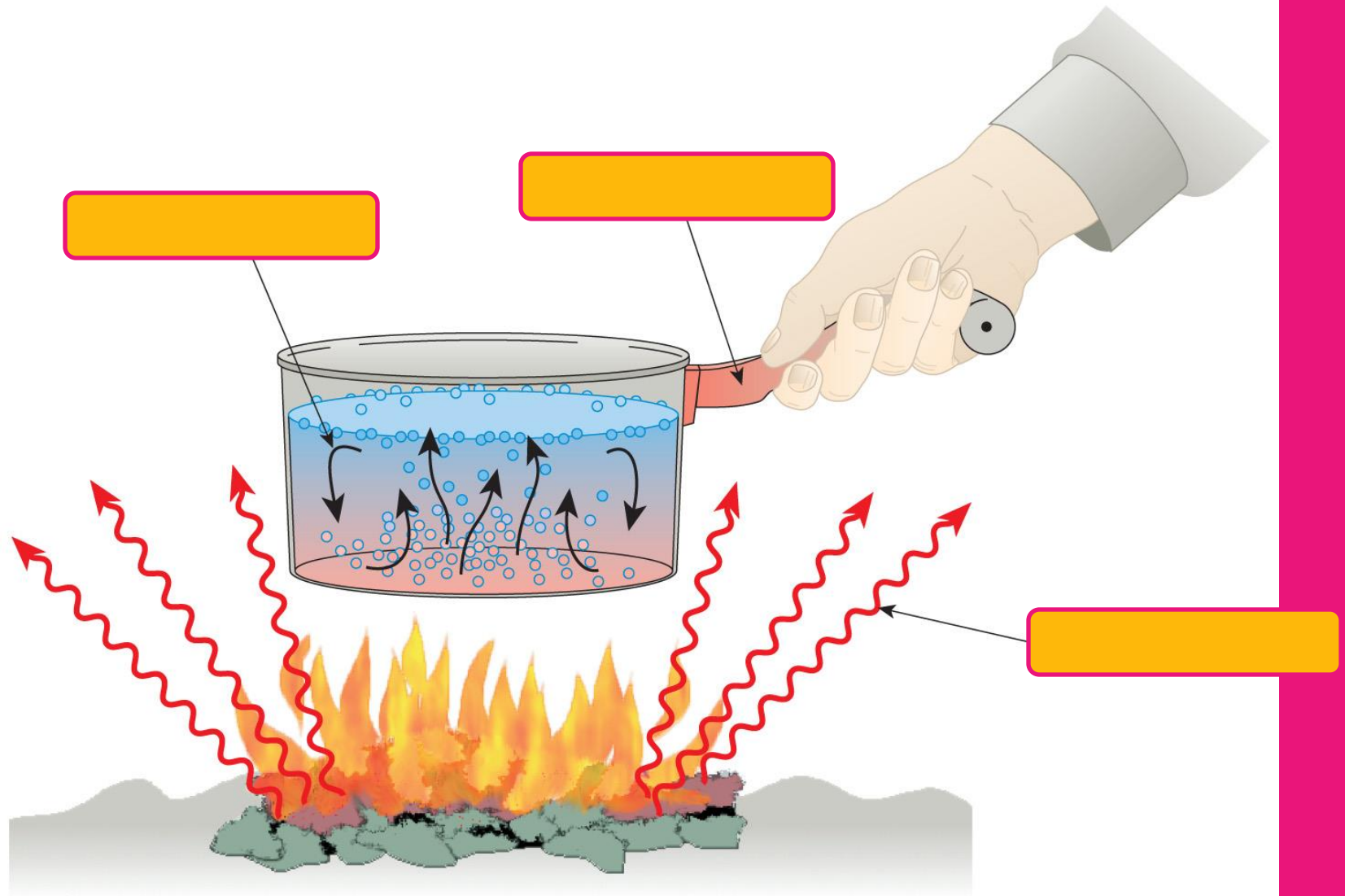


# RADIATION:

Is the direct transfer of energy by electromagnetic waves.

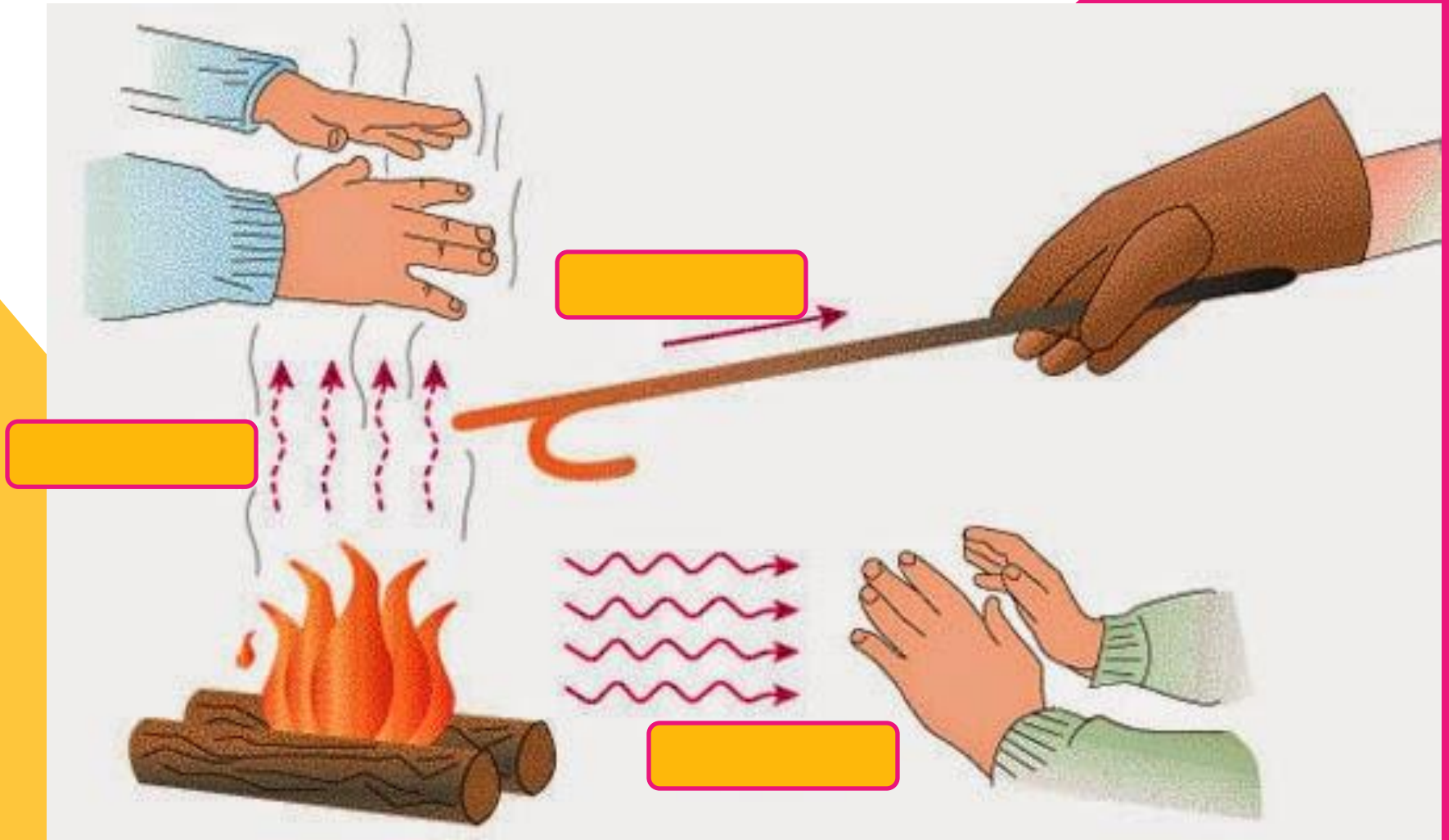


# EXAMPLE #1

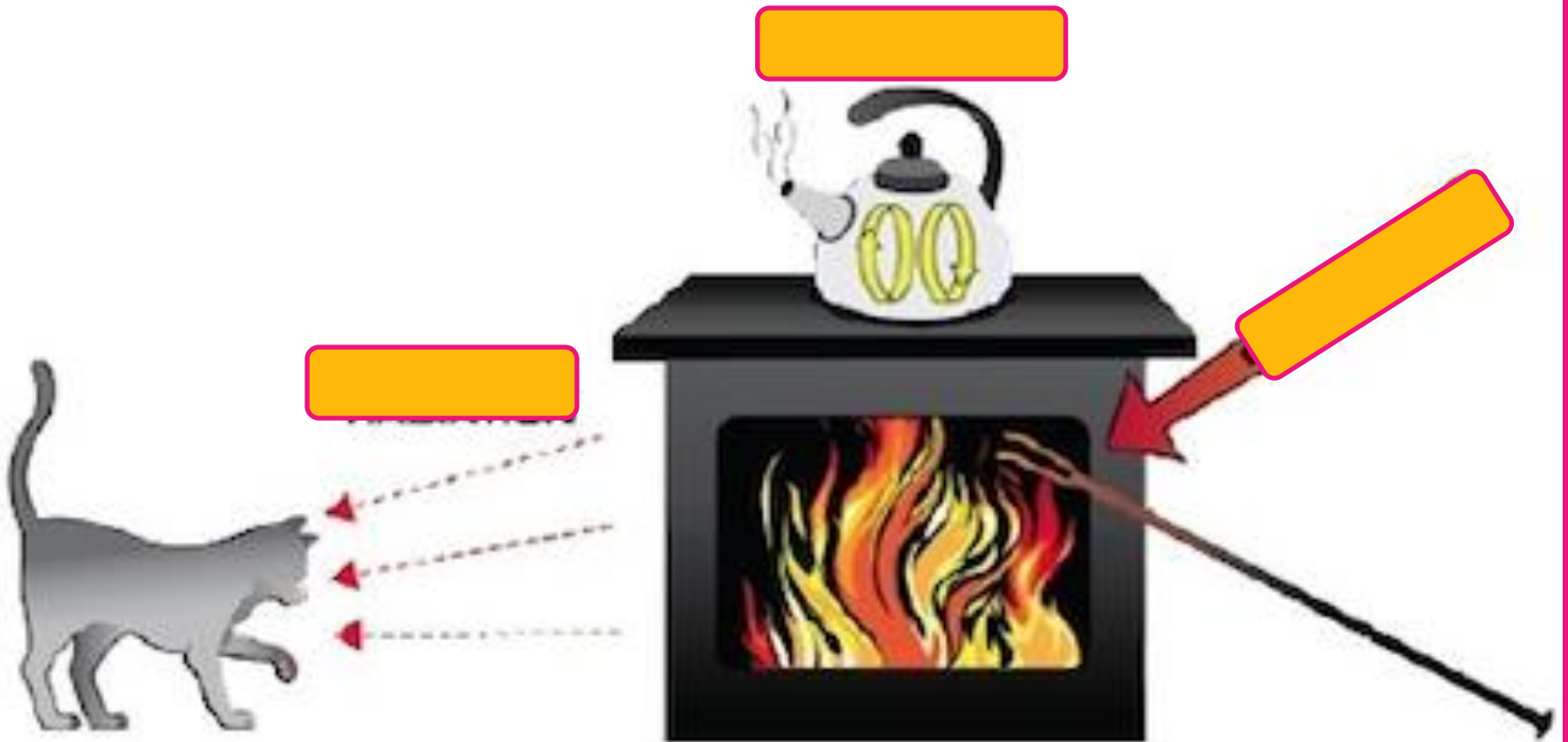




# EXAMPLE #2



# EXAMPLE #3



# EXAMPLE #4

