

### Set 8 Vocabulary for Heat Transfer

Create your own flashcards using the vocabulary words (1-14).

Each flashcard **MUST** have: the vocabulary word, an accurate definition, and an illustration.

I will check flashcards on \_\_\_\_\_ for completion.

Study the flashcards at least 15 minutes every night, because you will be quizzed on \_\_\_\_\_.

1. **heat** the transfer of thermal energy  
**NOTE:** Heat occurs when thermal energy is lost or gained.
2. **temperature** the measure of how hot or cold a substance is.
3. **thermal energy** energy in the form of heat (heat energy). It is determined by the movement of molecules that make up that substance.  
**NOTE:** Warm objects have more energy than cool ones, but that also depends on the amount of that substance.  
**EX:** A cup of water and a swimming pool can have the same temperature, but the pool will have more thermal energy because it contains more molecules than the cup of water. More molecules... more movement... more thermal energy.
4. **heat transfer** the way heat moves from one substance to another.  
**NOTE:** There is 3 main types of heat transfer: convection, conduction, and radiation.
5. **conduction** the transfer of energy from one place to another using direct contact. This is caused by two surfaces touching.  
**NOTE:** When molecules from one surface are heated, they transfer thermal energy to the molecules of the other surface and heat the other object.  
**EX:** Popping popcorn in a pan (without oil) is an example of this, because the pan is heated by the stove top, which transfers the thermal energy to the popcorn kernels causing them to open up and pop.
6. **convection** the transfer of energy from one place to another by warming a gas or liquid. Flows.  
**NOTE:** This is happens when molecules warm up and rise, leaving a gap (space), which is eventually filled by cooler molecules that eventually warm and rise too.  
**EX:** Popping popcorn using an air popper. The machine heats air and uses the warmed air to open and pop the kernels.
7. **conductor** material that easily allows heat energy to flow through it.  
**NOTE:** The better the heat is able to travel through the substance the better its conduction.  
**EX:** metal is a good conductor along with copper, aluminum, and steel.
8. **insulator** material that does NOT allow heat energy to easily flow through it.  
**NOTE:** Heat energy travels at a slower speed through these substances.  
**EX:** wood, paper, and plastic are good insulators and are better at trapping heat energy than conductors.
9. **radiation** the transfer of energy using electromagnetic waves.  
**EX:** Popping popcorn using a microwave, which produces heat energy with assistance of objects such as a magnet to transfer the energy to the form of waves.
10. **particle** the smallest piece of a substance that contains all the properties of that substance.