

## Energy Transfer & Conservation

**Heat** is the transfer of energy from a one object to another due to a difference in temperature. Heat can be measured in joules, BTUs (British thermal unit), or calories.

The heat is dependent on factors like the speed of the particles, the size of the particles and the number of particles.

### IS HEAT & TEMPERATURE THE SAME THING?

NO

The temperature of an object is determined by how fast its molecules are moving. The faster the molecules are moving the higher the temperature. We say objects that have a high temperature are hot and objects with a low temperature are cold.



[Neil deGrasse Tyson Explains Heat vs. Temperature - YouTube](#)



The temperature, on the other hand, is of particles. For example, let's compare a tub of water with a cup of water. The water in the tub and the cup can be at the same temperature but since the tub is bigger then there is more particles in the tub, the water in the tub has more thermal energy in it and thereby more heat even though they have the same temperature.