**Chemical Systems**

**C. systems: are interactions between matter that go through 3 main processes that change their energy:**

**1.) Heating and Cooling.**

**2.) Phase Changes.**

**3.) Chemical Changes.**

**The temperature of different types of matter can interact in different ways depending on 2 things:**

1. **Difference in temperature.**
2. **Specific Heat Capacity.**

**Specific Heat Capacity: amount of Heat needed to raise the temperature of 1 g of matter by 1 degree Celsius.**

**Which has a higher specific Heat water or Iron? Why?**

**Water because it heats up and cools off slower.**

**\*\*When heat is transferred from one type of matter to another, the temperature change can be different, but the total amount of thermal energy (due to molecular motion) has to be the same (because of the conservation of energy).**

**Solid Fe @ 100 C Liquid H2O @ 22 C Vibrating rapidly Rolling past one another**

**If you put the iron in the water, which would change in temperature more?**

**Iron**

**Is this because it lost more energy?**

**No. Iron has a Lower S.H.**

**\*\*Energy lost by the Iron = Energy gained by the water.**