Specific Heat “C” [Heat Capacity]:

* Amount of heat required to change temperature of unit mass (1 gram) of substance by 1 degree Centigrade
* Small “C”:
  + Add small amount of heat to get temperature to increase by one degree centigrade
* Large “C”:
  + Add large amount of heat to get temperature to increase by one degree centigrade

Water: Cw = 1.00 cal/gm ℃

Iron: Ci = 0.10 cal/gm ℃

1 gram of water:

* Add 1.0 calorie → T Increases by 1 ℃
* Add 10 calories → T Increases by 10 ℃

1 gram of iron

* Add 0.10 calorie → T increases by 1 ℃
* Add 1.0 calorie → T increases by 10 ℃

The iron heats up quicker than the water as it takes less amount of calories to heat it up

Substance A

Substance B

1 gram of A: Specific Heat of A = 2 cal/gm ℃

* Add 2 cal ⇒ T Increase by 1 ℃
* Add 4 cal ⇒ T increases by 2 ℃
* Add 10 cal ⇒ T increases by 5 ℃
* Remove 2 cal ⇒ T decreases 1 ℃

Q = mcΔT -or- Q = (Tf - Ti)

* m = mass of sample
* c = specific heat
* Q = heat added
* ΔT = change in heat
* Ti = temperature initial
* Tf = temperature final
* Example
  + Mass = 4 gm
  + Sp. heat = 3 cal/gm
  + Heat added = 36 cal
  + We need to find temperature change