Heat and Temperature

Heat

Energy that is transferred from one object to another based on the difference in temperature between the two objects

[*Units – Joules, J; Calories, Cal*]

1cal = 4.184J, 1kcal = 4.184kJ

Temperature

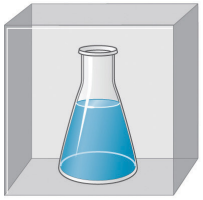
The speed that particles travel in space based on their internal energy (*heat*)

[*Units - Celsius, C°; Kelvin, K*]

0K = Absolute Zero (*lowest temp possible*)

2

System and Surroundings



System + Surroundings = Universe

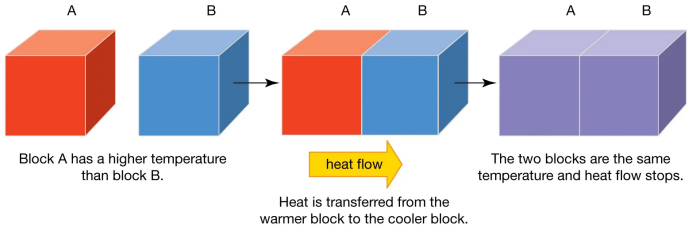
The object we are studying in nature

Everything else

System combined with surroundings

3

Heat Flow between objects



Heat always flows from the object with more heat to the object with less heat. Over time the two objects end up having the same level of heat and **temperature**

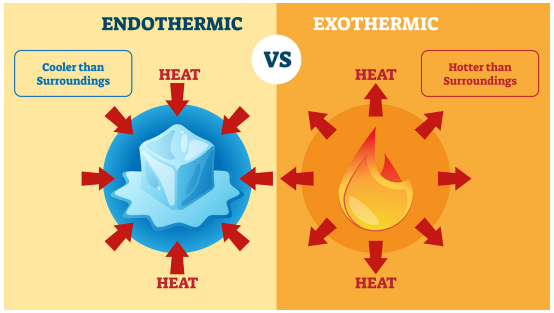
4

Endothermic and Exothermic Systems

q = +

Endothermic Heat Flow

Heat flows from the surroundings into the system



Exothermic Heat Flow

Heat flows from the system into the surroundings

q = -

5