CLASS-10

PHYSICAL SCIENCE

PERIOD PLANS

CHAPTER: 01 – HEAT

PERIOD PLAN-01 : Transfer of heat, Thermal equilibrium, Heat – Temperature - Units

Content Analysis	Class Room Environment	Teaching Learning Material
Transfer of heat :Hot and cold are relative terms. If wooden piece and a metal piece are kept in a fridge. The degree of coldness of metal piece is greater than the degree of coldness of wooden piece.	**Activity-1:** Keep a wooden piece and a metal piece in a fridge or in an ice box. Take them out after 15 minutes. When we touch the pieces we feel that they are cold. This means that heat energy is being transferred from our finger to the pieces. **Observation :** If heat energy flows out of our body then we get the feeling of coldness.	Wooden piece, metal piece, ice box
Heat : The form of energy that flows from a hotter body to a cooler body is called heat.	**Activity-2 :** In the above case, observe whether the wooden piece is cold or the metal piece is cold comparatively. **Observation :** The metal piece is colder than the wooden piece. This means that more heat energy flows out of our body when we touch the cold metal piece.	Wooden piece, metal piece, ice box
Temperature : The degree of coldness or hotness is called temperature.	**Activity-3 :** Take a cup of coffee and a cup of tea. (Otherwise lit a match stick and observe.) Put a finger in them and observe what happened. **Observation :**We feel that they are warm to touch. This means that heat energy is being transferred from coffee/tea to our finger.	A cup of coffee, a cup of tea
Thermal equilibrium : Thermal equilibrium denotes a state of a body that neither receives nor gives out heat energy. When two bodies are placed in the thermal contact, heat energy will be transferred from the hotter body to a cooler body. The transfer of heat continues till both bodies attain the same temperature. Then we says that the bodies achieved thermal equilibrium. If two different systems A and B are in thermal contact and they are in thermal equilibrium individually with another system C, then the systems A and B are in thermal equilibrium with each other.	**Activity-4 :** Take a cup of hot water and a cup of cold water. Take a laboratory thermometer. (i) Observe the level of mercury in the thermometer. Keep the thermometer in hot water. (ii) Observe the level of mercury in thermometer. Now place the thermometer in the cold water. And (iii) Observe the level of mercury in thermometer. **Observation :** At first there is an initial value of mercury level in thermometer. When we placed it in the hot water, we observed that there is a rise in mercury level. Next when it is placed in cold water, the mercury level is decreased. **Conversation :** about the transformation of heat from one body to another body.	A cup of hot water, a cup of cold water, laboratory thermometer
Temperature – Units: Temperature can be measured in degree Celsius (^oC). The S.I. unit of temperature is Kelvin (K). $0^oC = 273K$	**Explanation :** Explain about the units and transformation of units. Celsius, Kelvin scale units.	chart
Heat - Units :The S.I. Unit of heat is Joule (J). The C.G.S. Unit of heat is calorie (cal). 1 cal = 4.186 J (approx. 4.2 J) 1 K.cal= 4.2 X 10^3 J		AV-clip about transfer of heat and thermal equilibrium
Relation between Celsius and Kelvin scale: $t^oC = (t + 273)K$ $1^oC = (1 + 273)K = 274K$		

NAGA MURTHY- 9441786635
Contact at : nagamurthysir@gmail.com
Visit at : ignitephysics.weebly.com