CLASS-10

PHYSICAL SCIENCE

PERIOD PLANS

CHAPTER: 01 – HEAT

PERIOD PLAN-04 : Specific heat - applications

Method of mixtures (Law of thermal equilibrium)

Content Analysis	Class Room Environment	Teaching Learning Material
Specific heat - applications : *Watermelon brought out from a fridge retains its coolness for a long time than other fruits. Because the watermelon consists of more water and water has greater specific heat.	**Activity-10:** Keep a water melon/ apple and a potato 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. Observe which is more cold. **Observation :** Watermelon is more cold.	Watermelon/ apple and a potato, ice box
*A samosa appears to be cool outside but the curry may be hot inside. Because the ingradients in the samosa have high specific heat values.	**Activity-11:** Bring two hot samosas. Wait for 5 minutes. Touch samosa. Next eat the samosa. **Observation :** Samosa is not hot to touch. But the content in it is till hot when eating.	Samosa-2
*The substance having highest specific heat value is Water and the value of specific heat of water is 1 cal/gm-^oC *The substance having leatst specific heat value is Lead and the value of specific heat of Lead is 0.031 cal/gm-^oC	**Explanation :** The significance of specific heat in daily life.	AV-clip and photos
Principle of Method of Mixtures : When two or more bodies at different temperatures are brought into thermal contact, then net heat lost by the hot bodies is equal to the net heat lost by the hot bodies until they attain the thermal equilibrium. Net heat lost by the hot bodies = Net heat gain by the cold bodies Final temperature as per Method of mixtures : $(T) = \frac{m_1T_1+m_2T_2}{m_1+m_2}$	**Activity-12 :** Take two beakers of same size and pour 200ml of water in each. Heat them till they reach same temperature. Add the water from these two beakers into another large beaker. What will be the temperature of the mixture? Measure with thermometer.	Two beakers, large beaker, thermo meter, water, stove
	Activity-13 : Take two beakers of same size and pour 200ml of water in one beaker and 400ml of water in other beaker. Heat them till they reach same temperature. Add the water from these two beakers into another large beaker. What will be the temperature of the mixture?	
	Activity-14 : Take two beakers of same size and pour 200ml of water in one beaker and 400ml of water in other beaker. Heat the first beaker up to 60^oC and the second beaker up to 90^oC. Add the water from these two beakers into another large beaker. What will be the temperature of the mixture? Measure with thermometer.	
Thermal equilibrium : 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.	**Explanation :** Principle of method of mixtures – thermal equilibrium - Final temperature as per Method of mixtures : $(T) = \frac{m_1T_1+m_2T_2}{m_1+m_2}$	AV-clip
Internal energy : The molecules of the system have different forms of energies such as linear kinetic energy, rotational kinetic energy, vibrational energy and potential energy between molecules. The total energy of the molecules of the system is called internal energy of the system.	**Conversation :** about different types of energies of molecules.	

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