

**DATE: 19 SEP 2020**

**SUBJECT : SCIENCE**

**CHAPTER-7:**

**TEMPERATURE AND HEAT**

**TOPIC-4:**

**TRANSFER OF HEAT**

## METHODS FOR TRANSFER OF HEAT

### TRANSFER OF HEAT:

1. Why does water heat up when it is placed on flame?
2. Why do we feel warm when we sit near a heater?

ANS: This is because heat flows from hotter object to a cooler one.

**Transfer of Heat:** The process by which heat transfer from one place to another is called transfer of heat.

**Mode of transfer of heat:** There are 03 modes/ways/ methods for transfer of heat

1. Conduction
2. Convection
3. Radiation.

**Conduction:** The process by which heat transfer takes place without physical movement of the particles of medium is called conduction. This mode is generally applicable for solid.

**Example :** When we supply heat at one end of a metallic rod after some time we feel warm at the other end if touched. It means heat transfers from hot end to cold end.

**Explanation :** Due to heat particles in the rod vibrate with higher degree and the heat gets transfer from one particle to nearby particle and thus heat reaches from one end to other end. Particles oscillate in its place and do not physically go from its place to other place.

**Convection:** The process by which heat transfer takes place with physical movement of particles of medium is called Convection. This mode is applicable for liquid and gas.

**Example:** Boiling water in a container. Here hot molecules rise up carrying heat and cooled molecules sinks. The process is called convection current. Molecules physically go from one place to another place.

## METHODS FOR TRANSFER OF HEAT

**Radiation:** The process in which heat transfer takes place without any medium is called Radiation. Example: Light from the sun to the earth

**Practical examples:** when water is boiled in a container, the lower part of the container receives heat from the burner and it gets transfer to water by conduction. On the other hand the heat gets transfer through the water by convection. Solar radiation carries heat from sun to the earth by radiation process.

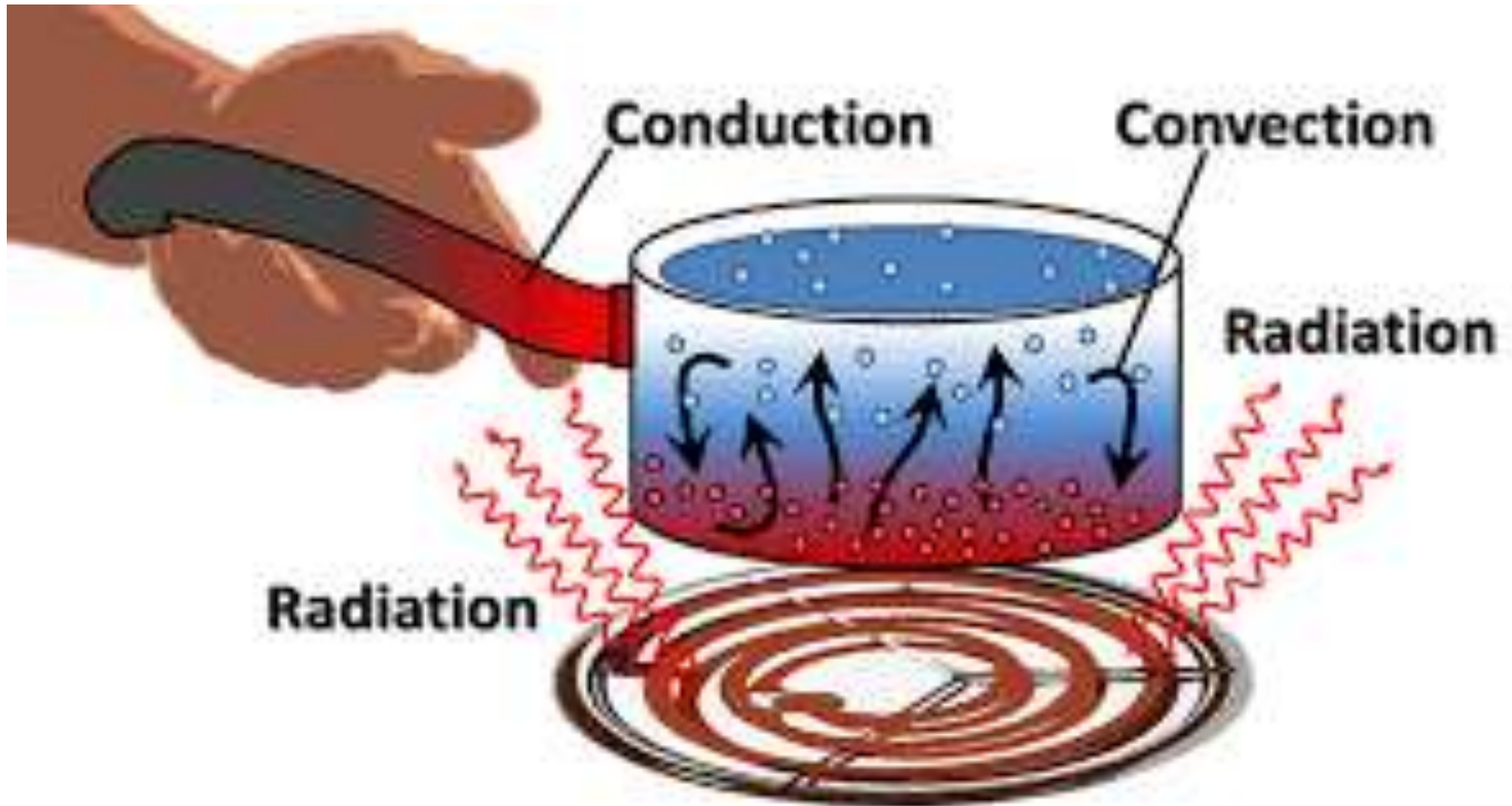
**Conductors of heat:** The objects or substance through which heat can transfer easily are called conductors of heat.

**Examples :** All metals are good conductor of heat.

**Insulators of heat:** The object or substances that do not allow heat to pass through them are called insulators.

**Example :** Glass , wool, paper, plastics etc are some insulators.

## CONDUCTION CONVECTION AND RADIATION



Water is taken in a container. It is being heated. Heat from the source is received by the lower part of the container and then it reaches to water inside the container. In the above activity the three modes of transfer of heat( conduction, convection and radiation) are shown.

## QUESTIONS: HOME ASSIGNMENT

1. What do you mean by transfer of heat? Name the three modes of transfer of heat.
2. Explain how heat is transferred by conduction.
3. With example describe how heat is transferred by convection .
4. Write the differences between conduction and convection.
5. What are insulators of heat. Give three examples.
6. What do you mean by conduction, convection and radiation?
7. What are conductors of heat? Give examples.
8. Solar cooker is painted black on the inside. Give reason.
9. Write the similarities between conduction and convection.
10. Describe an experiment to show how convection currents are set up when a liquid is heated.