

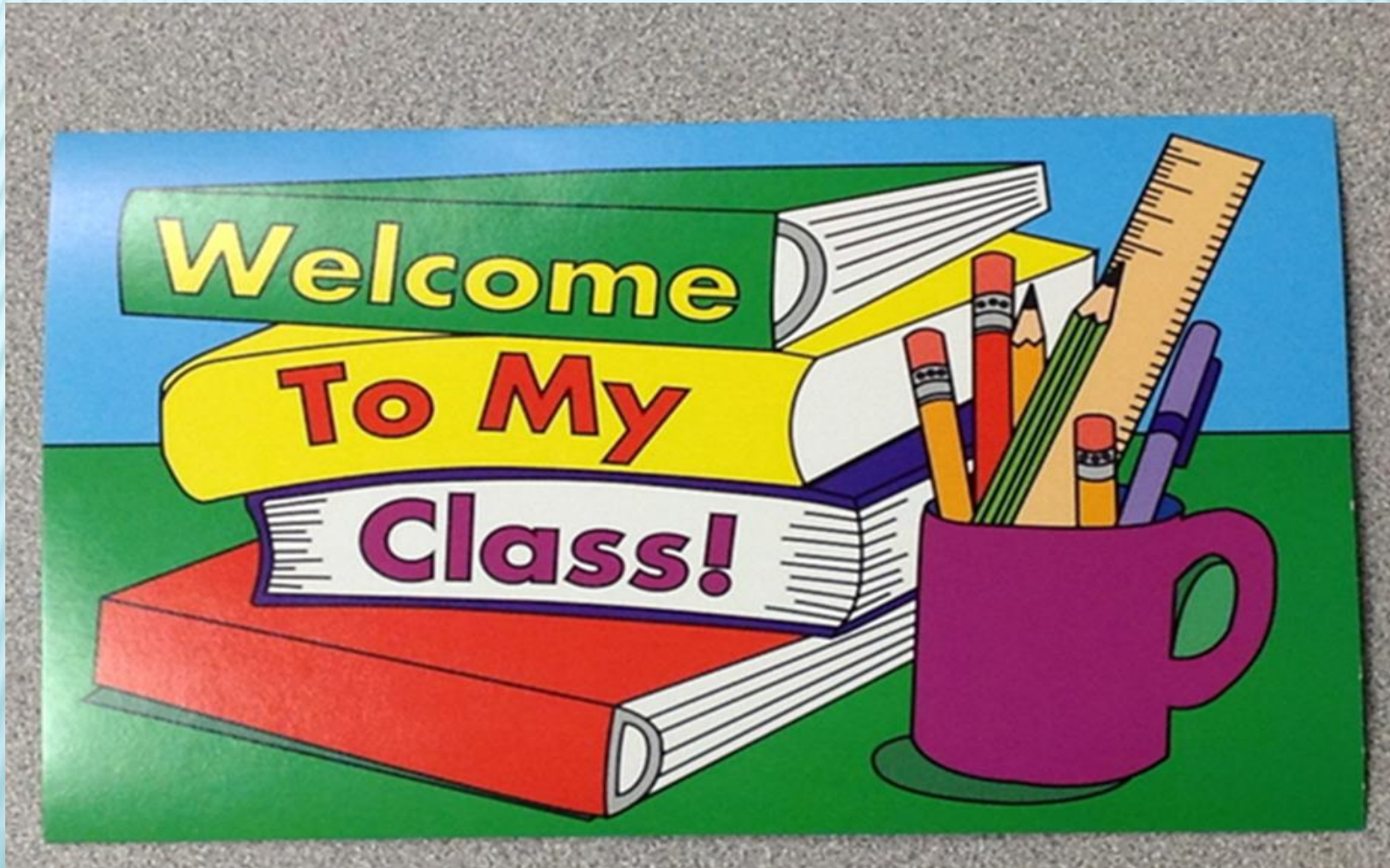


**Pakistan School**  
Kingdom of Bahrain



**CLASS:9**

**SUBJECT : PHYSICS**





# ENGAGING STARTER

Some material is heated in a pan , it is stirred by a spoon ,and it is remain there in the pan.

Tell

After some time can we touch the spoon? If the spoon is

1.made up of metal

Or

2. Made up of wood

Give reason .



# TOPIC

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× Conduction

## OBJECTIVE

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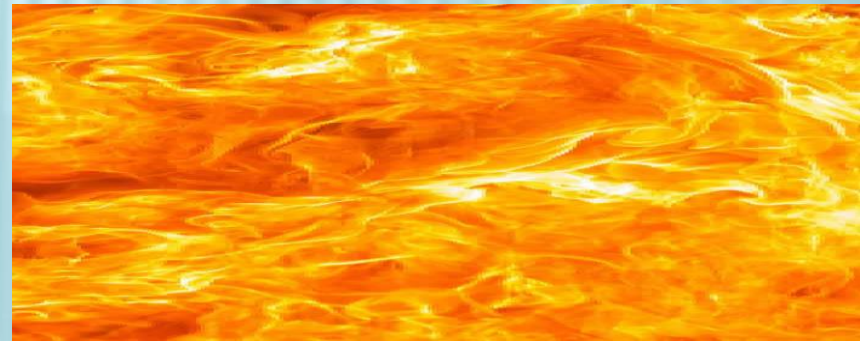
✕ At the end of this lesson  
student will be able to :

✕ Describe the  
transfer of heat  
by conduction  
method .



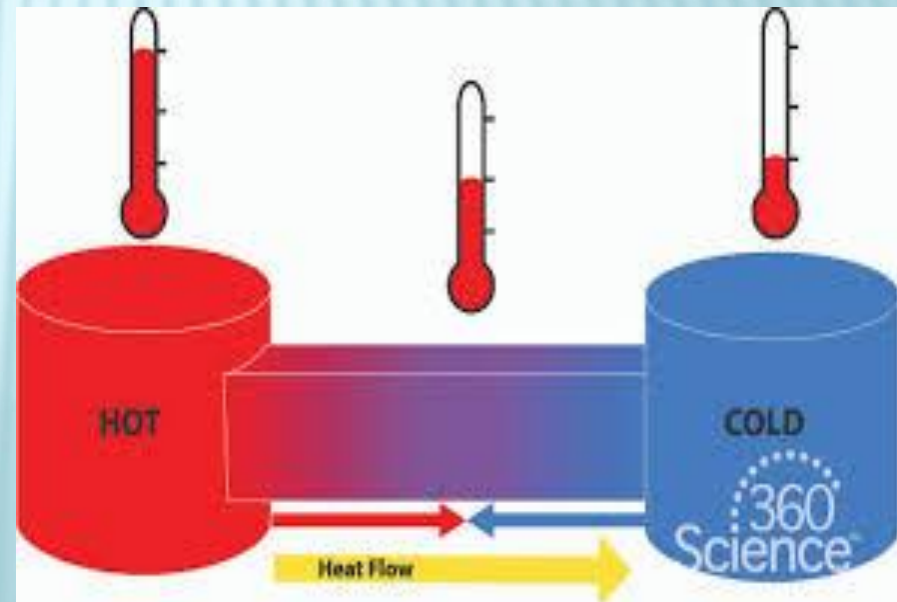
# HEAT

- ✖ Heat is the energy that is transferred from one body to the other in thermal contact with each other as a result of the difference of temperature between them.



# TRANSFER OF HEAT

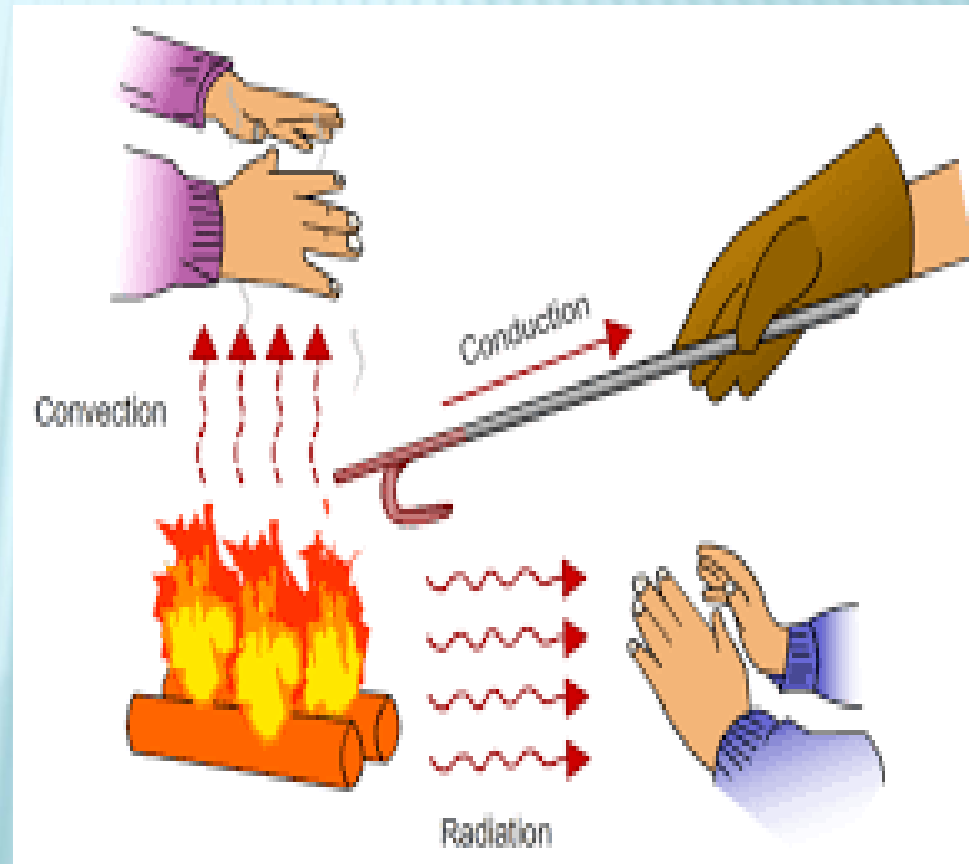
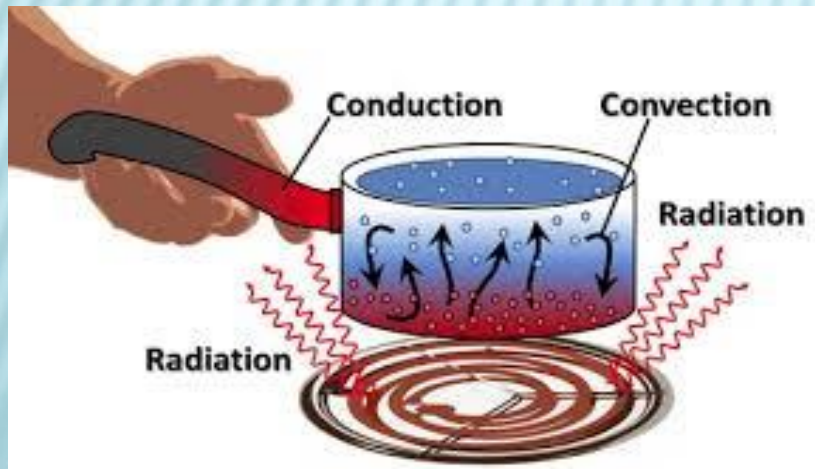
- ✖ When two bodies at different temperature are in thermal contact with each other .Thermal energy from hot body flows to a cold body in the form of heat is known as transfer of heat .



# MODES OF TRANSFER OF HEAT

✕ There are 3 ways by which transfer of heat takes place:

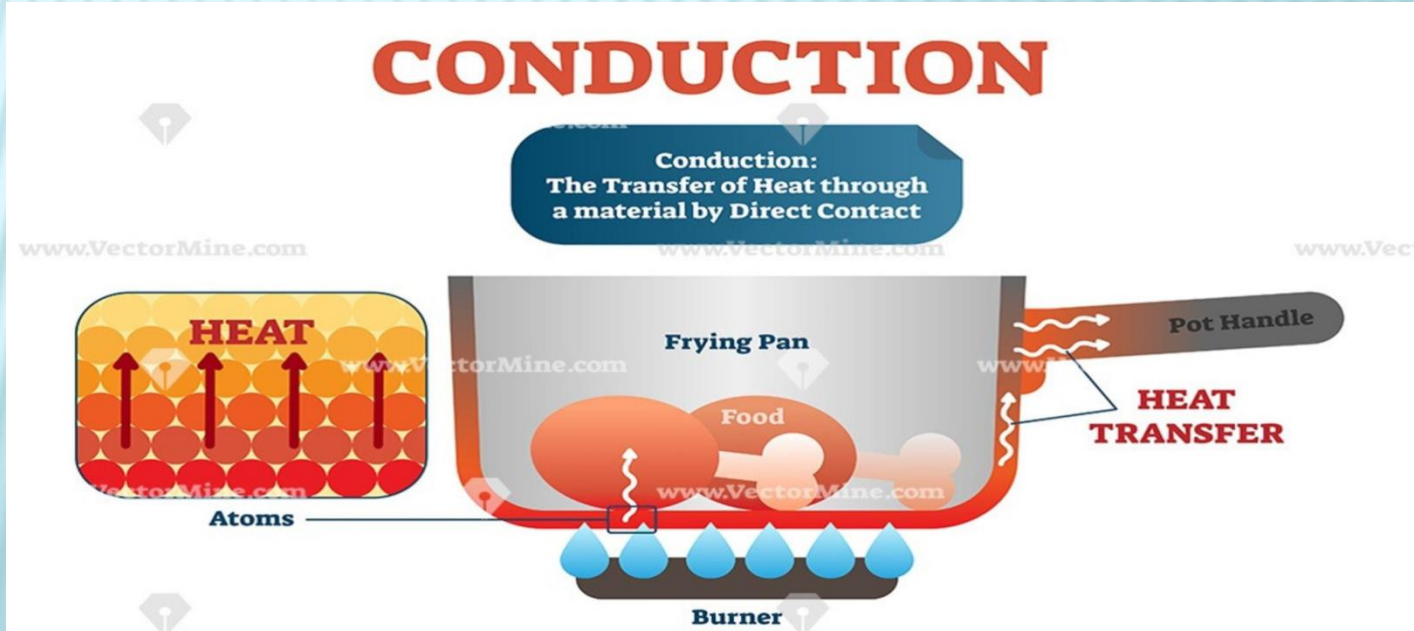
- Conduction
- Convection
- Radiation





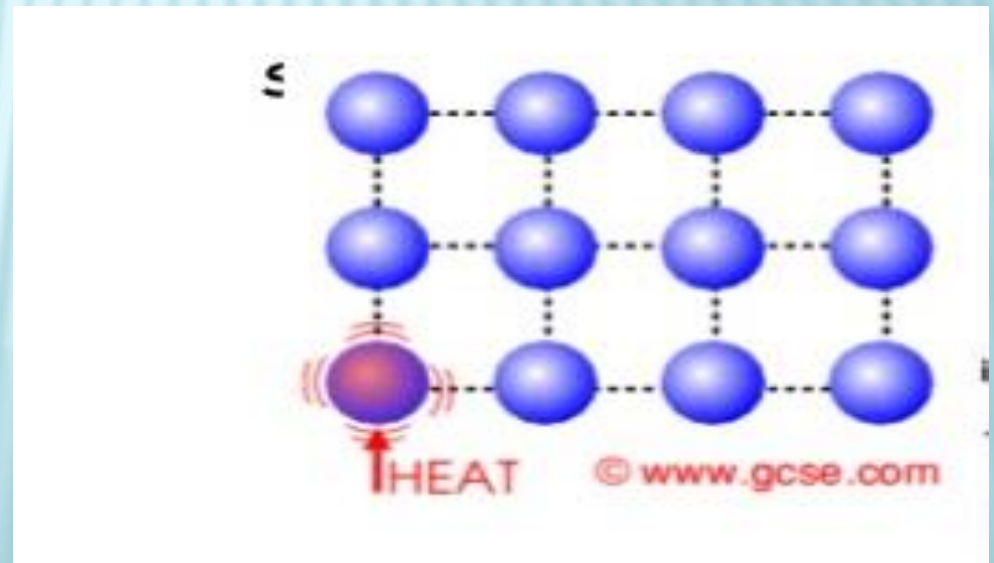
# CONDUCTION

- ✖ The mode of transfer of heat by vibrating atoms and free electrons in solids from hot to cold parts of the body is called conduction of heat .



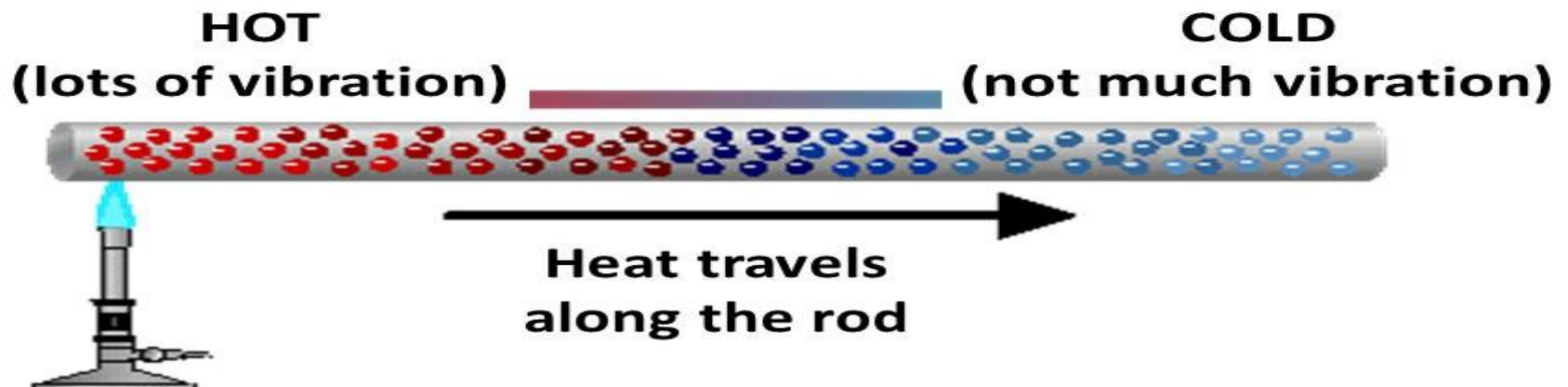
# HOW DOES HEAT TRANSFER IN SOLID?

- ✖ Internal structure of solid :
- ✖ In solids , atoms and molecules are packed close together. They continue to vibrate about their mean position.



# TRANSFER OF HEAT BY ATOMS AND MOLECULES:

- ✖ When one end of solid is heated ,the atoms of that side begin to vibrate more rapidly .they also collide with the neighboring atoms or molecules
- ✖ In doing so they pass some of their energy to neighboring atoms during collision with them with the increase in their vibration . In this way some heat reaches the other part s of solids.

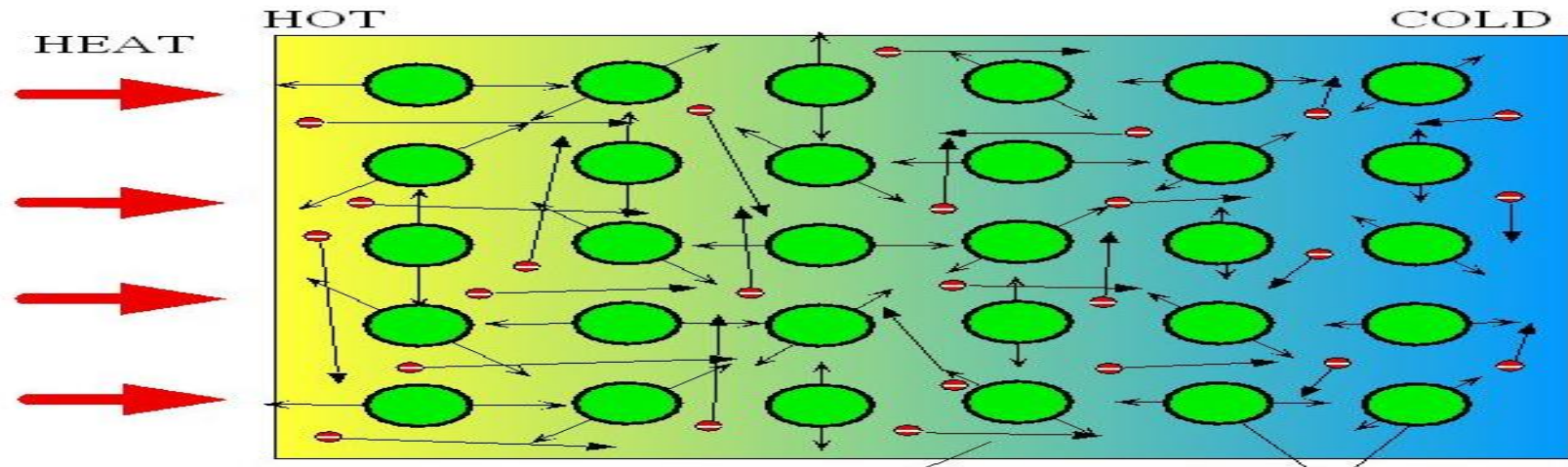




# METALS ARE GOOD CONDUCTOR OF HEAT

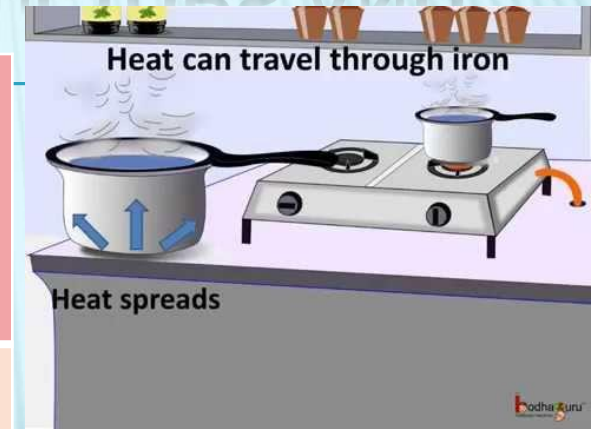
- ✖ Metals are good conductor of heat because metals have free electrons .These free electrons move with very high velocities within the metal objects . They carry energy at a very fast rate from hot to cold parts of the object as they move .So heat reaches more quickly then non metals .

## Thermal Conduction



# DIFFERENTIATE BETWEEN CONDUCTORS AND INSULATORS

Conductors	Insulators
The substances through which heat can pass/conduct are called conductors.	The substances through which heat do not pass / conduct are called insulators .
They have free electrons	They don't have free electrons.
Examples : all metals are good conductors	Examples : wood, cork , cotton , wool, glass rubber etc.



# PLENARY

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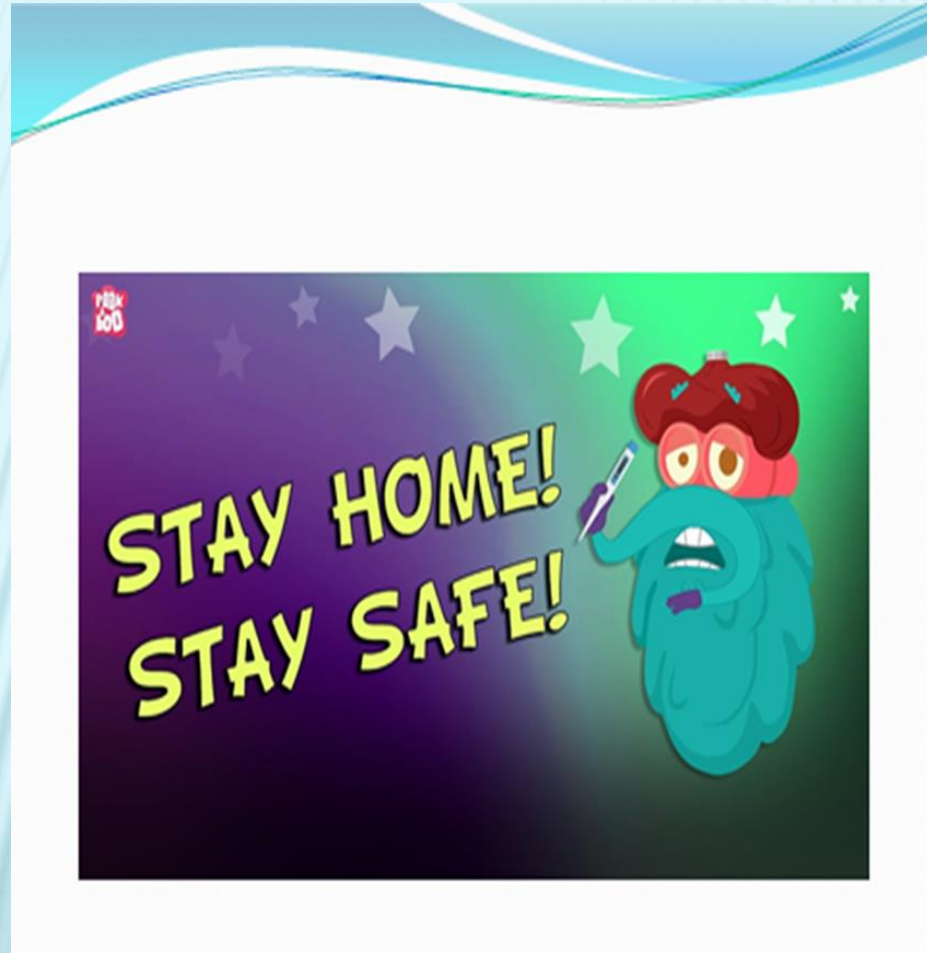
- Heat is a form of ..... And always flow from hot body to ..... body.
- Tell the name of 3 modes of transfer of heat.
- In conduction heat is basically transferred by atoms in a solid. T/F.
- Metals consist of ..... (free electrons / free molecules )
- Conductors means heat ..... Through body .(can pass / can not pass )
- Wool is the example of .....



## HOME WORK

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✕ Search and write some uses of conductors and insulators in daily life.



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✕ ALLAH  
HAFIZ