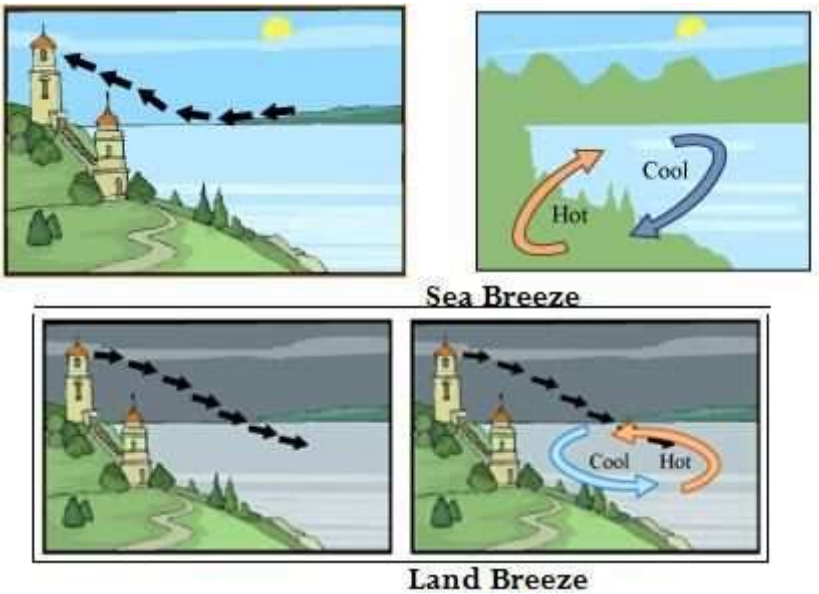
9. Heat

- The measure of degree of hotness or coldness of a substance is called its **temperature**.
- The device that is used to measure the temperature of a substance is called **thermometer**. Thermometers are of two types:– clinical (used for measuring temperature of human body) and laboratory (used for measuring temperature of common objects). The temperature range of clinical thermometer is 35ºC to 42°C and that of laboratory thermometer is -10ºC to 110ºC. The unit for temperature is °C. The normal temperature of human body is 37°C.
- The two most commonly used scales in which temperature is read are the Celsius scale and Fahrenheit scale.

The transfer of heat takes place from a hotter object to a colder object. There are three ways by which this transfer can take place. One of the ways is conduction.

- **Conduction**: The transfer of heat in solids usually takes place by this method.
- Substances that allow heat to pass through them quite easily are called conductors and those that do not, are called insulators.

Convection: The transfer of heat in liquids and gases takes place by convection. Land breeze and sea breeze are a result of unequal heating of air present over land and sea by the sun.



Radiation: Transfer of heat by radiation requires no medium. Heating of earth by sun is an example of heat transfer by radiation.

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Conductors

- Materials through which heat energy can easily pass
- For example**,** all metals like silver, copper and mercury
- Low specific heat

Insulators

- The materials which do not allow heat energy to pass through them easily
- For example, wool, glass and wood
- High specific heat

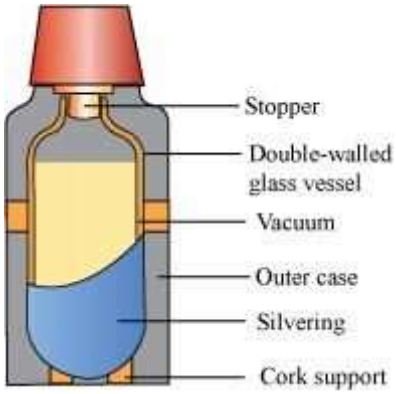
All substances expand on heating.

The order of expansion of solid, liquid and gas is:

Gas > Liquid > Solid

- Due to expansion of solids, rail tracks have spaces in them and electric wires are kept loosen
- Due to the expansion of air, hot air balloon moves up

Thermos flask: It is keep thermally insulated and keeps hot liquids hot and cold liquid cold.



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