## Activity 14

Ball and ring experiment to show that a solid expands on heating and contracts on ~~cooling~~ cooling.

Take a metallic ring and ball. Try to pass the metal ball through the ring. The ball is able to pass through the ring. Now heat the metal ball for 5-0 minutes. The hot ball is not able to pass through the ring.

This shows that a solid expands on heating. Now cool the ball, it again passes through the ring. This shows the a solid contracts on cooling.

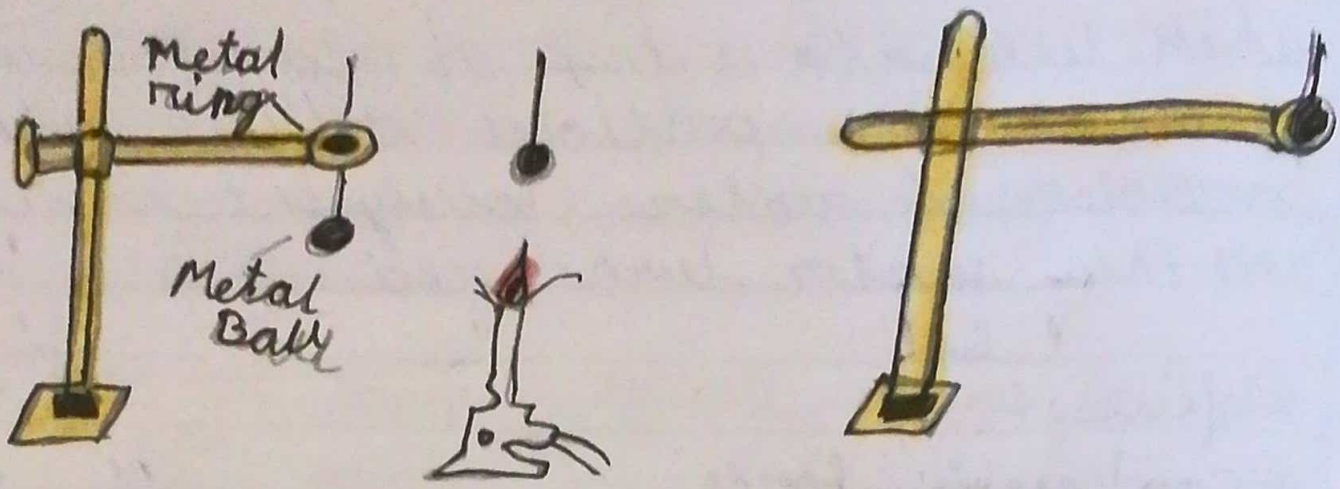
## Activity 15

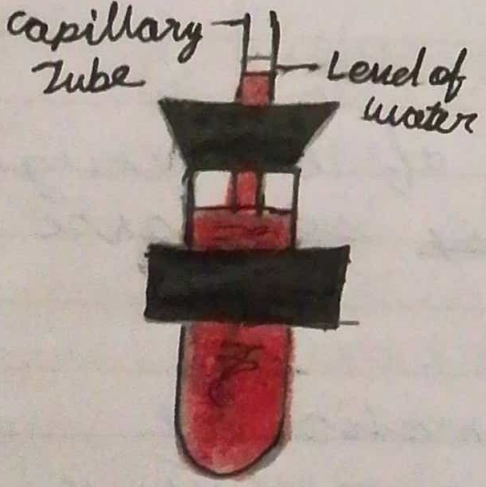
To show that a liquid expands on heating and contracts on cooling.

Take a test tube filled with coloured water close the mouth of the test tube with a cork. Fit a capillary glass tube through a hole in the cork such that it is dipped in water in the capillary tube. Now heat the test tube by putting in a water bath. You will observe that the level of coloured water increases in the capillary tube. On cooling the test tube, the

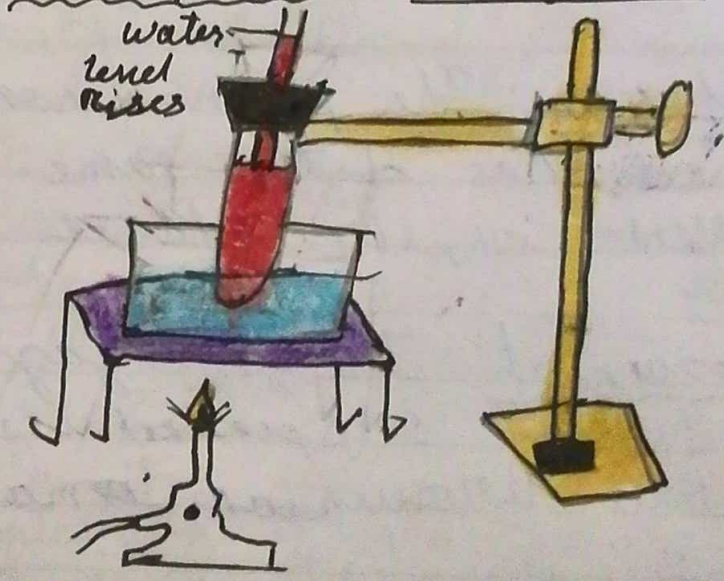
17/7/21

# Activity 14 Diagram




## Activity = 15 Diagram



water level in the capillary tube decreases showing that liquids contract on cooling
Note - A capillary tube is a thin glass tube with mall internal diameter.
The capillary action can also be shown with a straw by drinking juice or cold drink.

## Activity 16

To show thermal expansion of a gas.
Take some coloured water in a beaker. Take a capillary tube and dip its one end in the coloured water to take a drop of it in the capilary tube. Fit this capillary through a hole in the cork. Now fit the crook in a test tube carefully.
Now heat the test tube. After some time you will observe that drop of water moves up. This is because air in the test tube expands on heating which pushes the water drop up. Now cool the test tube, the water drop again comes down. This shows that air contracts on colling.

# Activity - 16 Diagram