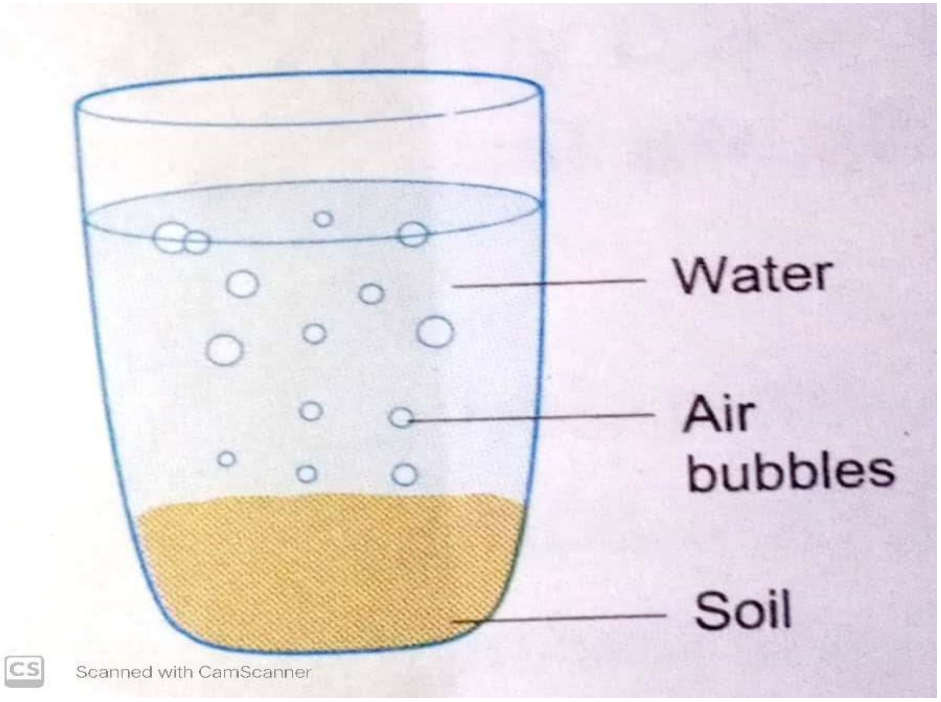
SCIENCE

STD VI

AIR -THE BREATH OF LIFE.

1. Why do air bubbles come out when soil is added to water?

A1. When soil is added to water, the water displaces the air trapped between the soil particles and so this air rises as bubbles.



Q2. Why is the presence of air in the soil essential for plants?

A2. The air in the soil is very essential for plants because the roots of the plants absorb oxygen from this air.

Q3. Name two elements and two compounds which are present in air.

A3. The two elements present in air are nitrogen and oxygen.

*Two compounds present in air are CO2 and H2O.

Q4. Name two major components of air and their approximate proportions.

A4. Nitrogen and oxygen are the two main components of air.

*Nitrogen is approximately 78%.

*Oxygen is 21%.

Q5. Is the composition of air strictly fixed?

A5. No, the composition of air is not strictly fixed.,because it is a mixture of gases.

*As we go to higher altitudes, the air becomes thin and the percentage of oxygen decreases.

* In industrial cities the percentage of CO2 and dust is slightly more.

Q6. In which season would you expect higher proportion of water vapour?

A6. We would have higher proportion of water vapour in the air during MONSOONS.

Q7. Which gas is formed when carbon is burnt in air?

A7. $C + O_2 \rightarrow CO_2$

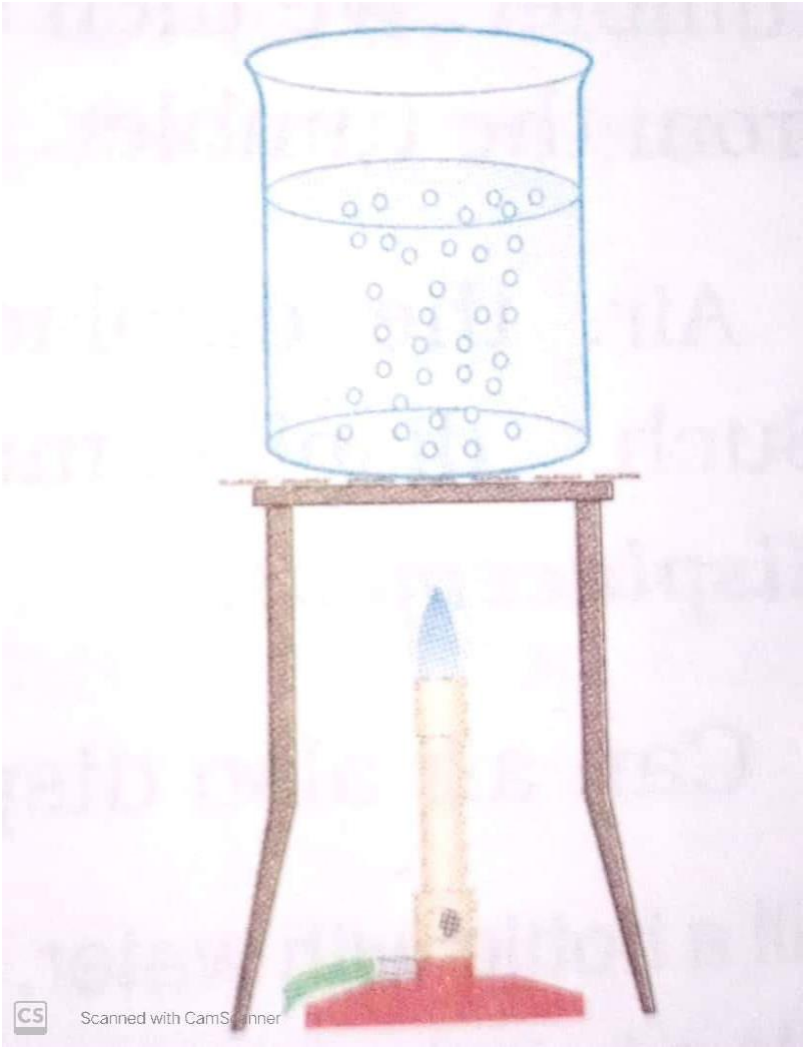
*When carbon is burnt in air we get carbon dioxide.

Q8. Describe an activity to show that water contains air.

A8. Yes,water has air dissolved in it and the solubility of air decreases with increase in temperature of water.

Experiment-

*Take half beaker of clean water and heat it.You will observe tiny air bubbles rising through water.



Q9. How would you show that a candle needs air to burn?

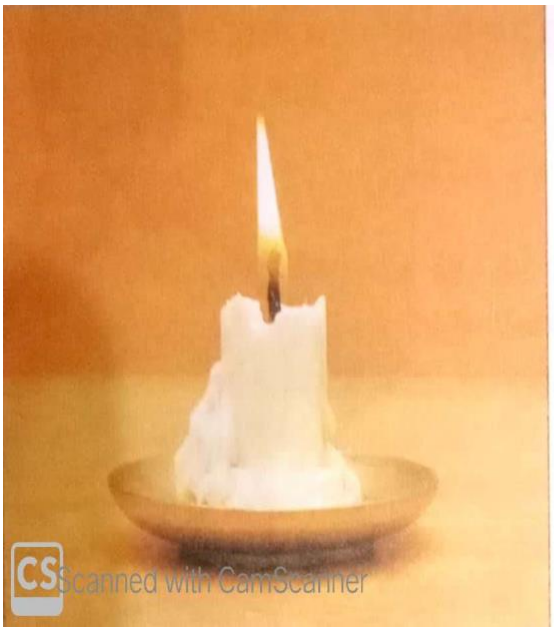
A9. We can show that a candle needs air to burn as-

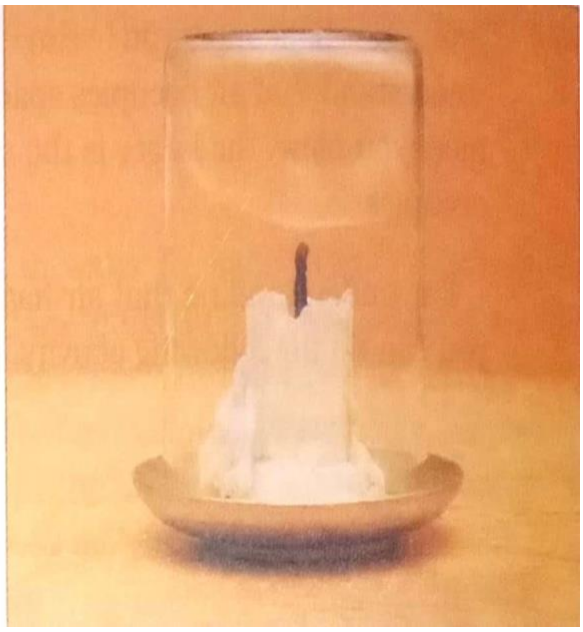
*Take a burning candle in a plate.

*Cover it with a transparent glass.

* The candle continues to burn for sometimes as there is some air inside the glass.

*Very soon the candle gets extinguished because the air inside the glass has been used.





Q10. Of what use are the hair to your nostrils?

A10. We have tiny hair in our nostrils to prevent particles of dust and sand from entering our lungs.

Q11. Mention some important uses of air.

A11. *Air has oxygen that helps in combustion.

*The oxygen in the air helps in breathing.

*Air has CO_2 that helps green plants in photosynthesis.

*Sound needs a medium to travel and so because of air we are able to hear each other.

*CO_2 leads to greenhouse effect which keeps the Earth warm.

*Nitrogen prevents fire from spreading.

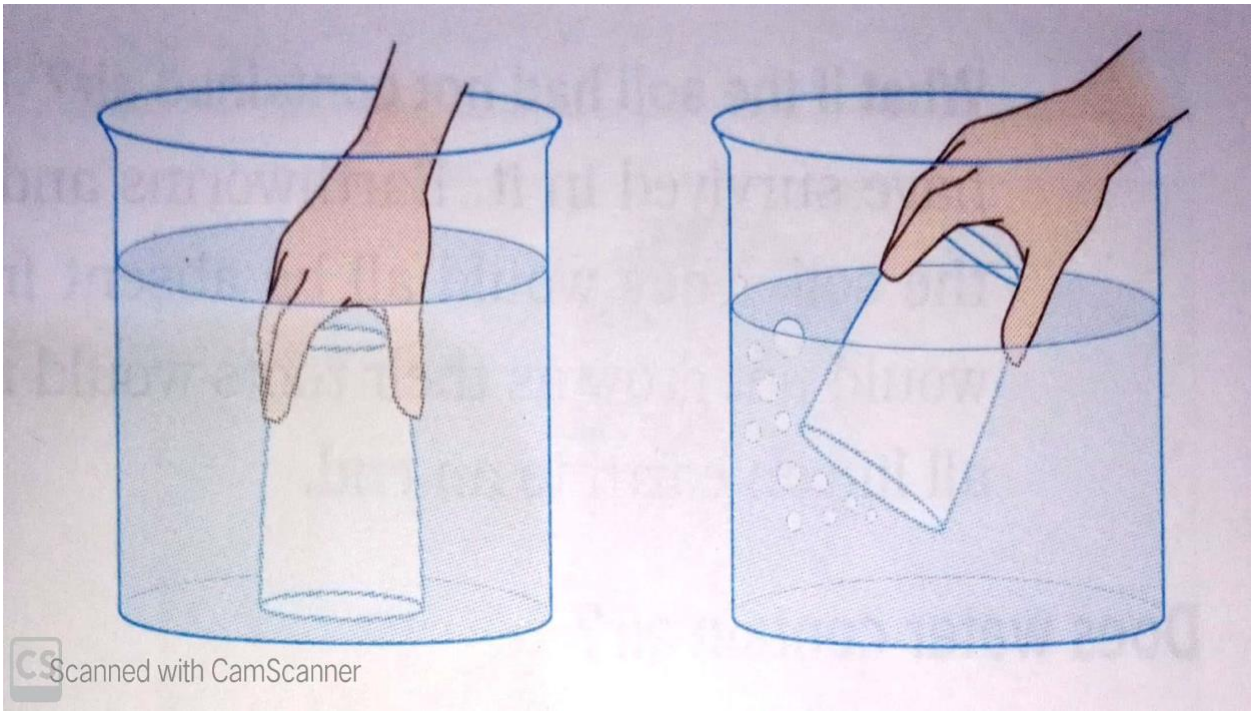
Q12. How would you prove that a so-called empty glass is not empty? What does it contain?

A12. * The empty glass is not actually empty , as it contains air.

*We can show this by pushing the glass, upside down through a trough half filled with water.

*No water will get into the glass because it is actually filled with air.

*The moment we tilt the glass ,air comes out of it as big bubbles and water enters inside.



Q13. How would you prove that air can cause the downward displacement

of water?

A13. We can show the downward displacement of water by air as-

*Take a trough full of water.

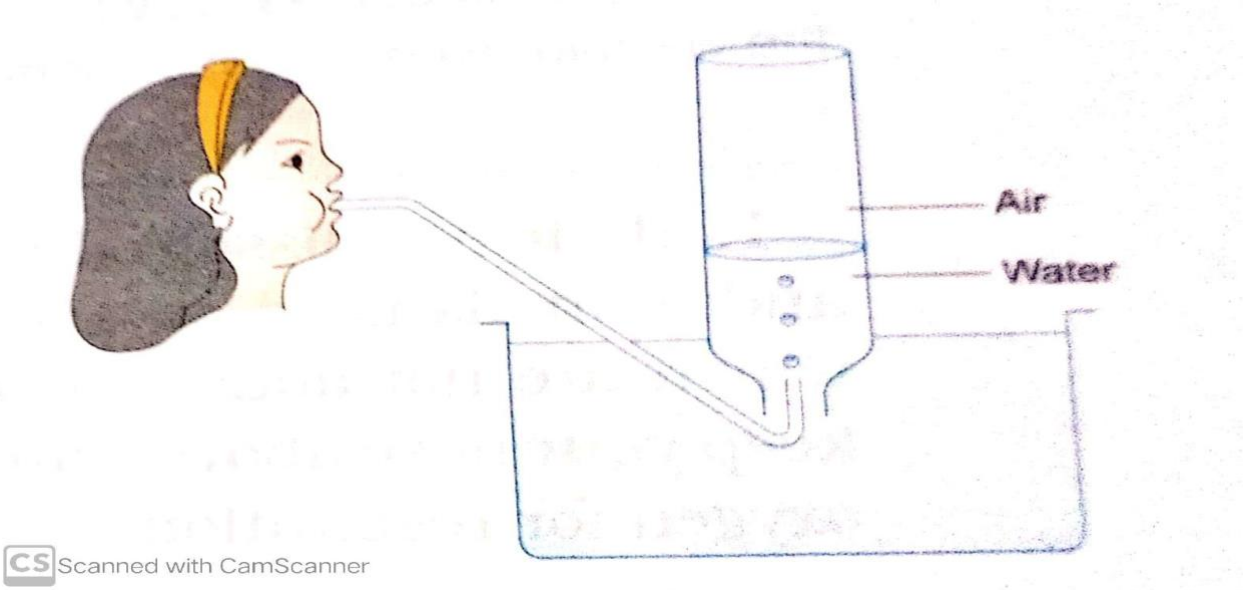
* Fill a bottle of water and Close its mouth with your thumb.

*Invert it into the trough of water and remove your thumb.

*Now introduce a bent end of a straw into the water and blow air from the other end .

*You will see the bubbles of air rising up and collecting in the upper part of the bottle.

*As the air collects above water, the water is pushed down and this is downward displacement of water.



Q14. Describe how plants and animals depend on one another for oxygen and carbon dioxide.

A14. *Plants and animlas are interdependent for oxygen and carbon dioxide.

*Both plants and animals inhale oxygen and exhale carbon dioxide.

*Now, the plants inhale the carbon dioxide for photosynthesis and release oxygen.

*This oxygen can be inhaled by plants and animals.