
Our Atmosphere
E.V.S
Notes

INTRODUCTION

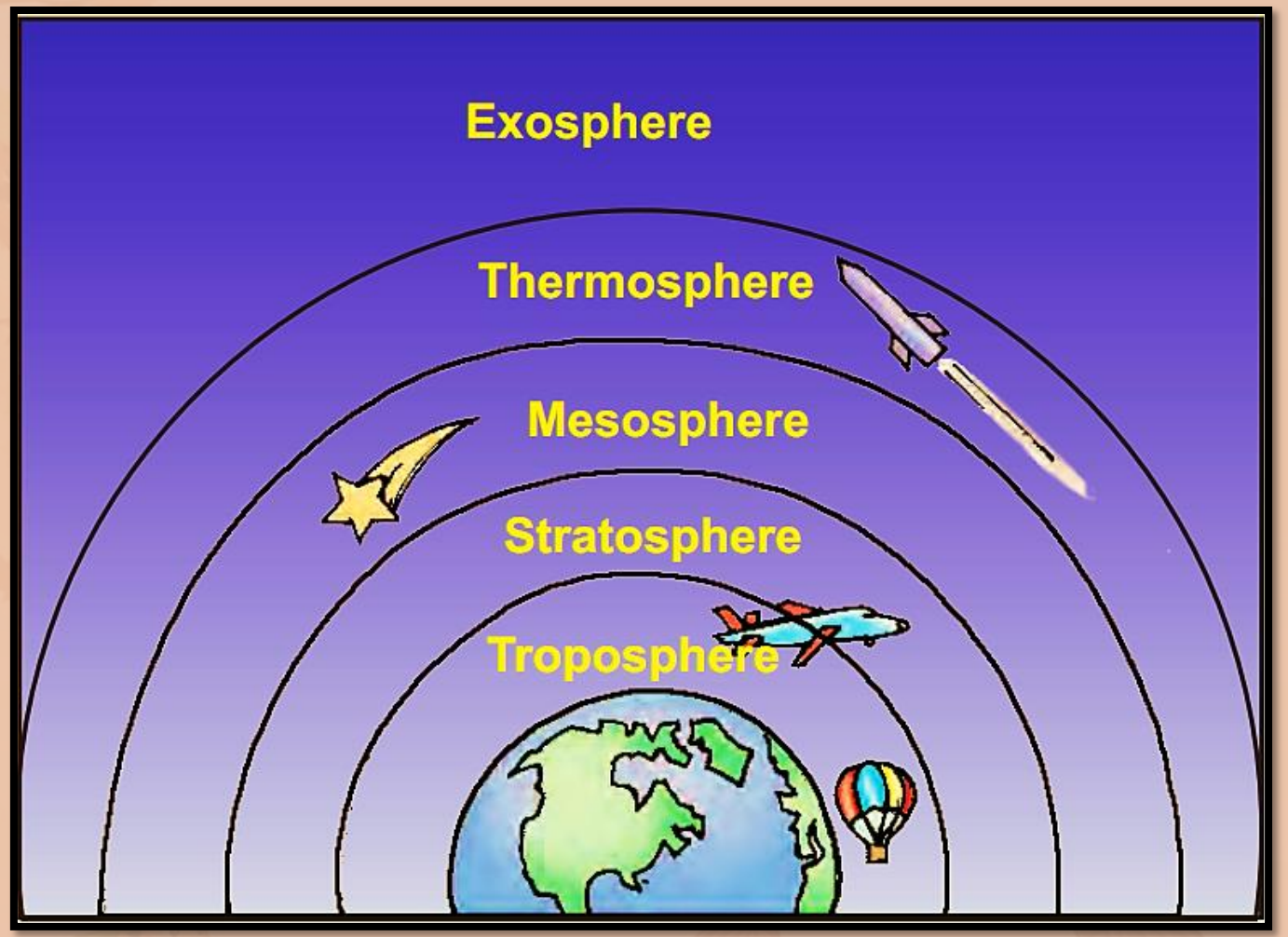
What surrounds us everywhere we go? Air, without which we can't live even for few minutes. All living organisms on the earth need air to breathe. Air is a mixture of various gases, surrounding our planet in the form of a thick layer. This blanket of air is called the atmosphere. Earth’s gravity holds up the atmosphere around it.

LAYERS OF ATMOSPHERE

There are five layers of atmosphere surrounding the surface of the earth in the vertical direction. These are :

- **Troposphere: This is the lowest layer of the atmosphere closest to earth’s surface. Changes in weather conditions like rains occur in this layer.**


- **Stratosphere: This is the second layer of atmosphere. All aircrafts and aeroplanes fly in this layer. Ozone gas layer is present in this sphere. Ozone protects us from harmful ultraviolet rays of sun which can cause cancer and skin diseases.**

Different layers of atmosphere

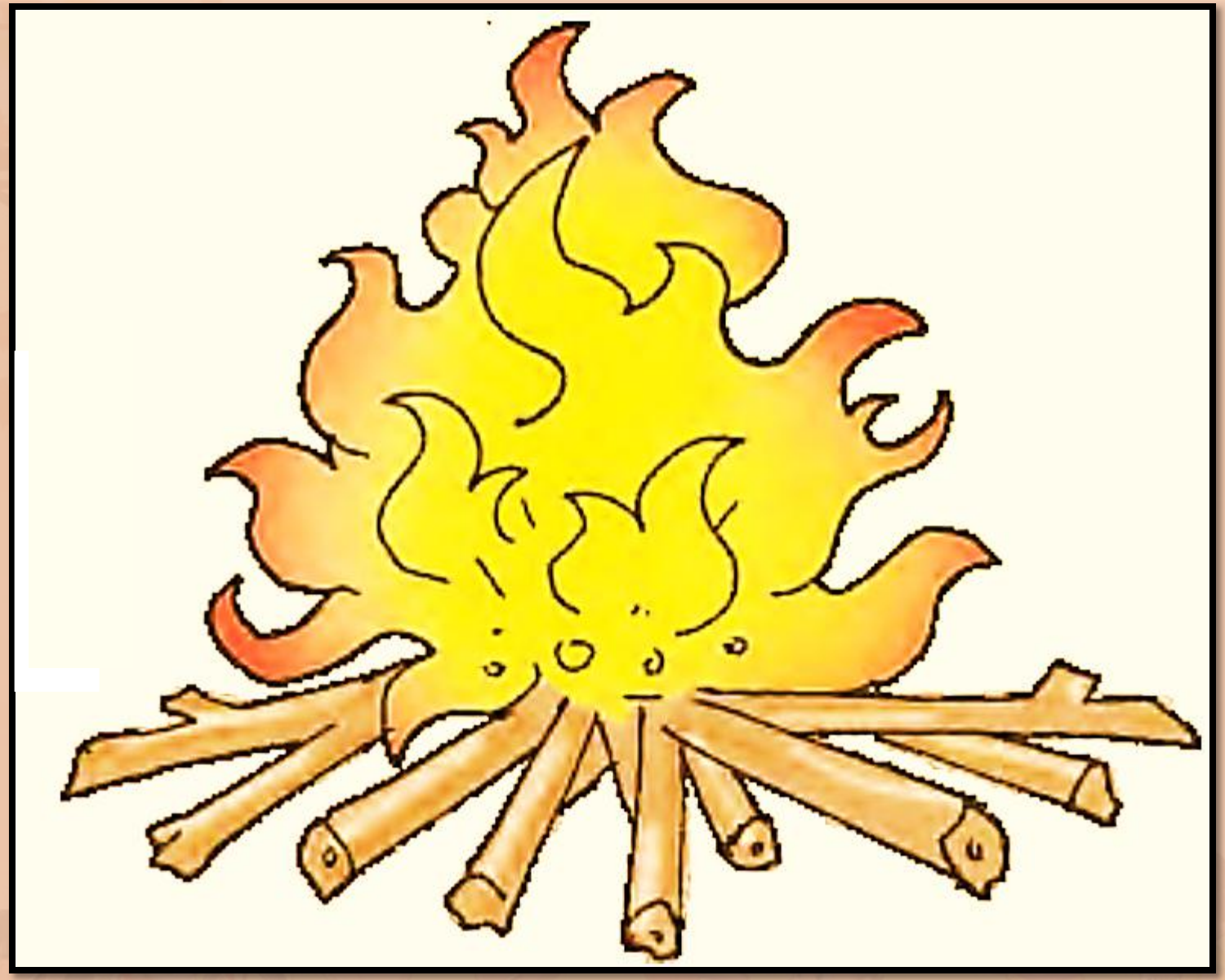
- **Mesosphere: It is the third layer of the atmosphere. This layer burns out the meteorites or small rocks and prevent them from reaching to the surface of earth.**

- **Thermosphere: It is the fourth layer. Space shuttles move in this layer of atmosphere.**

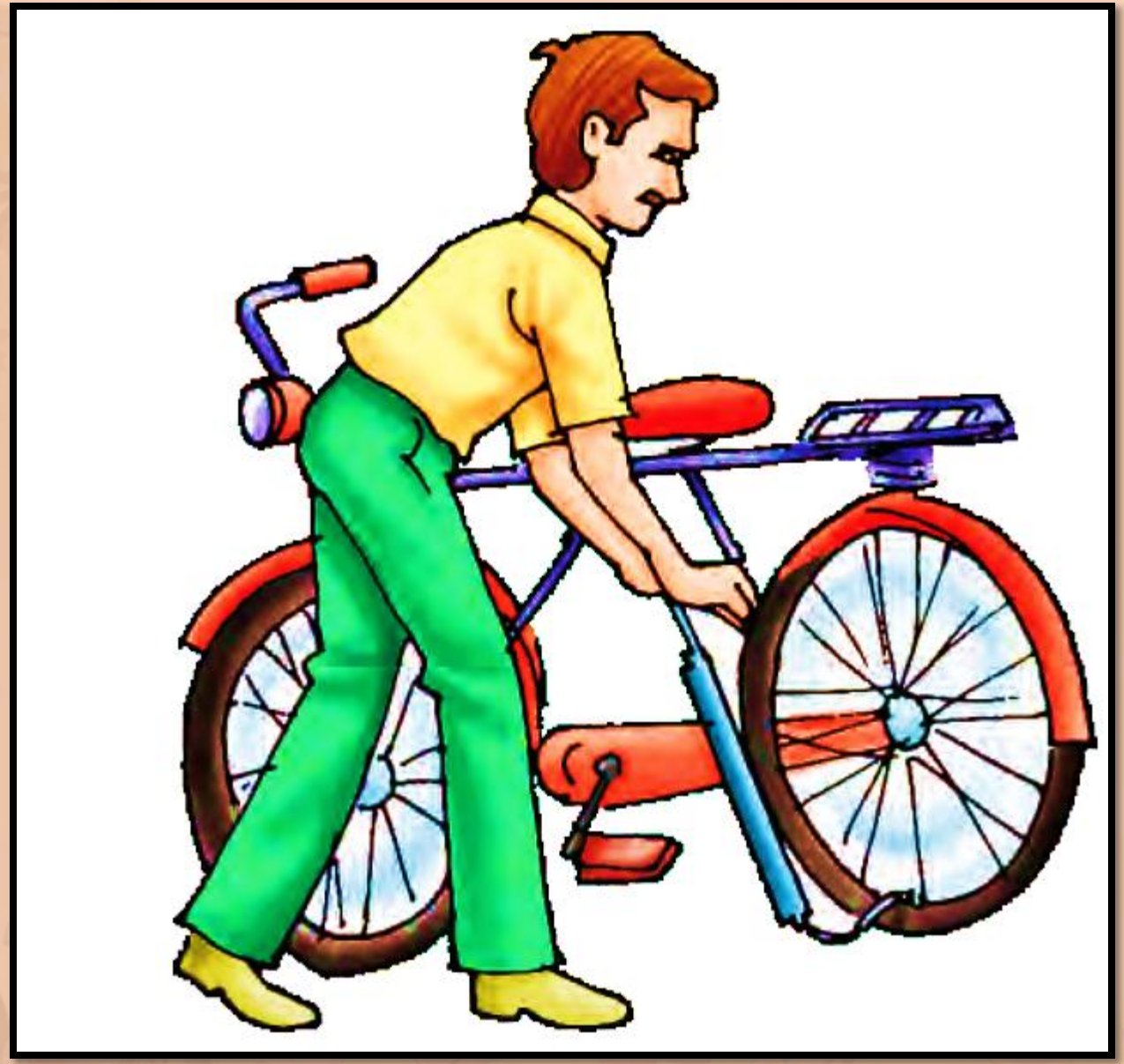
- **Exosphere: It is the fifth layer and the uppermost layer of the atmosphere.**

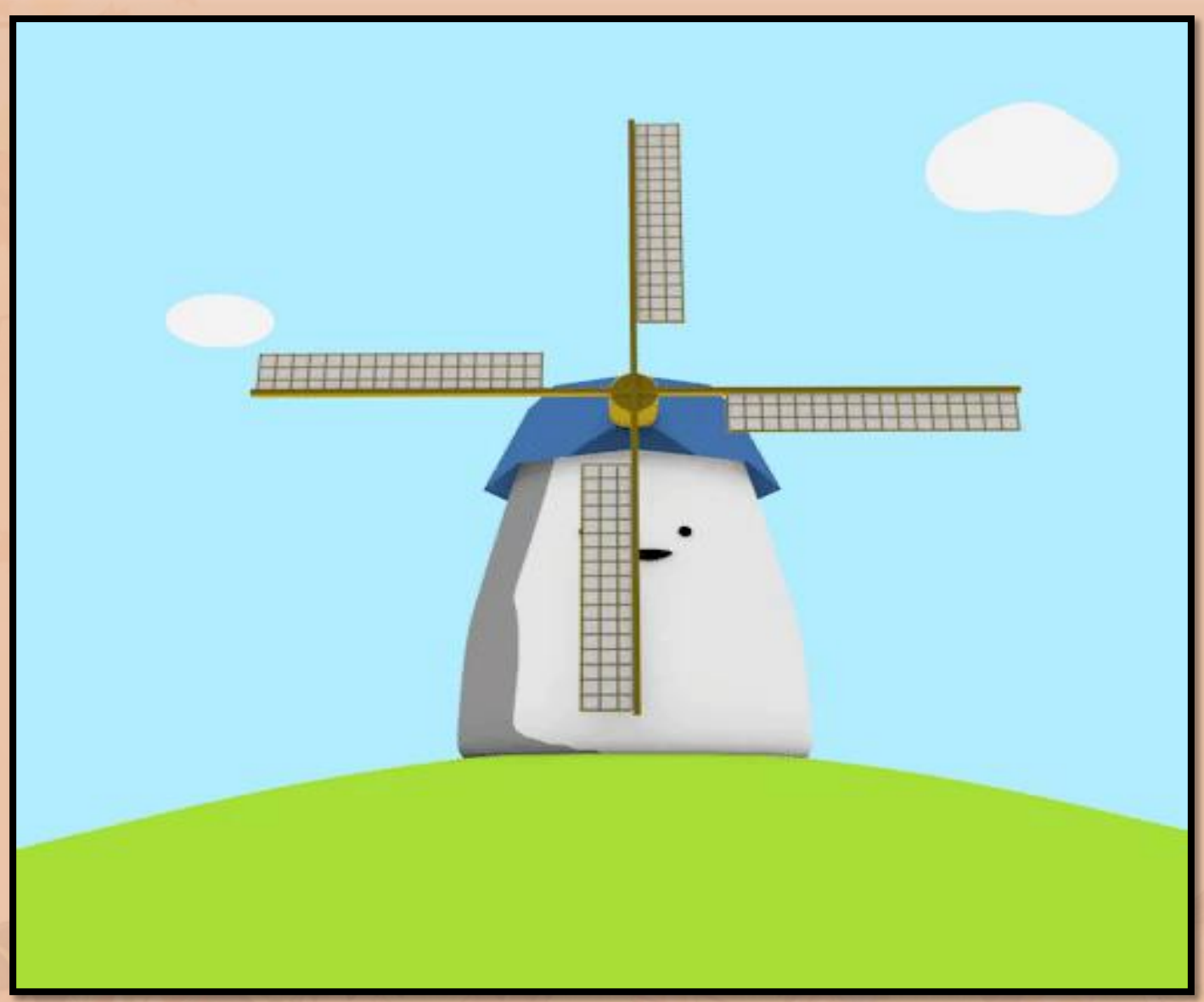
USES OF AIR

- Air is needed for breathing.
- Plants use carbon dioxide from the air to prepare their food and release oxygen.
- Burning of anything is only possible in the presence of oxygen that is freely available in the air.



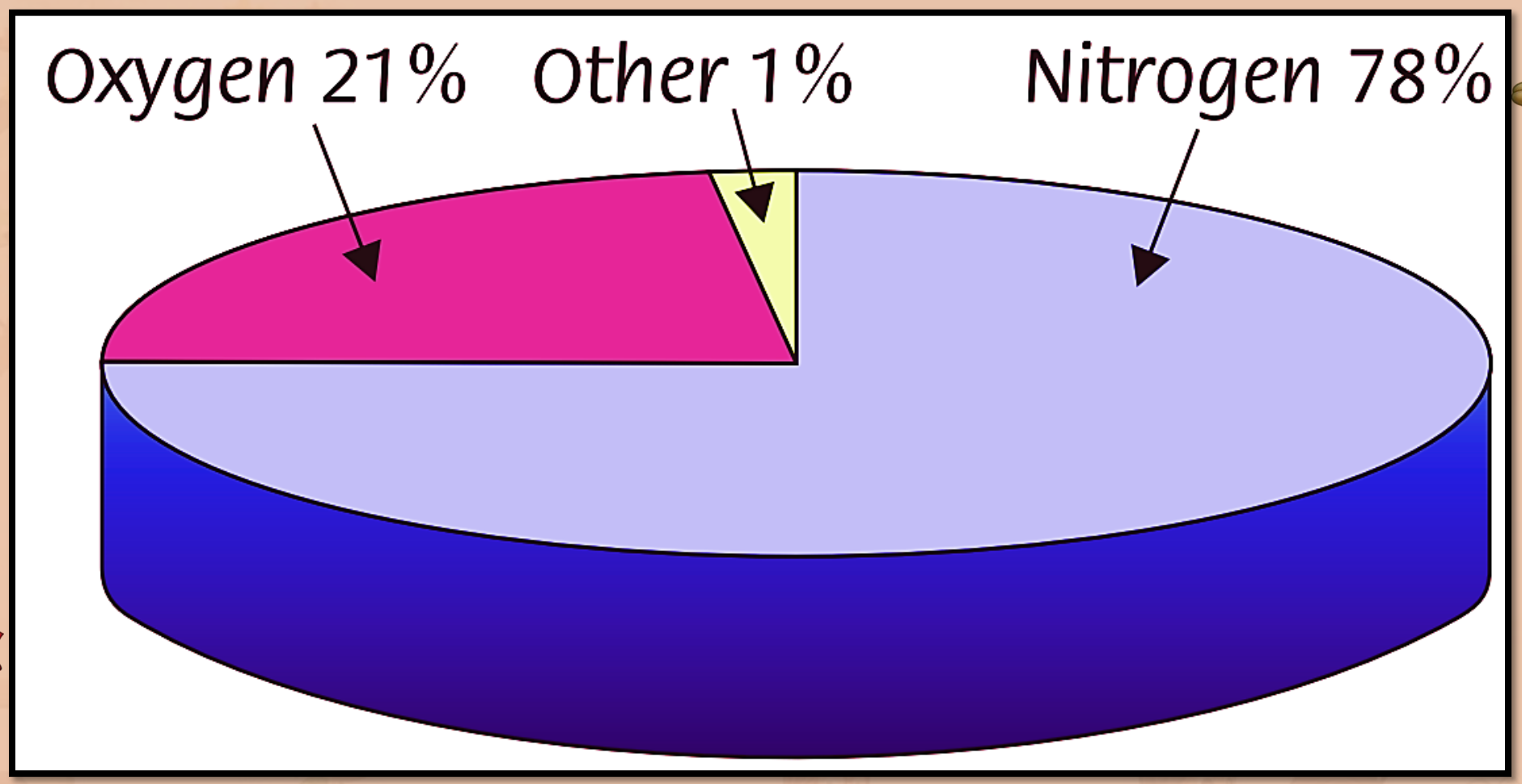
- Air is also needed for inflating tyres for automobiles, tubes and footballs.
- Air also supports in flying parachutes and gliders, in sailing boats and generating electricity, by moving the blades of a windmill.





COMPOSITION OF AIR

Air is a balanced mixture of different gases. It is mainly composed of nitrogen and oxygen with few other gases. Dry and clean air contains approximately 78% of nitrogen, 21% of oxygen, 0.03% of carbon dioxide and 1% of argon and other gases. Many natural substance like dust, ash, smoke and water vapour may be found in tiny amounts in air.


Oxygen 21%
Other 1%
Nitrogen 78%

Oxygen

Oxygen is the lifeline of all living things on the earth. It is the most important gas essential for breathing. It is used for life-support in aircraft and submarines.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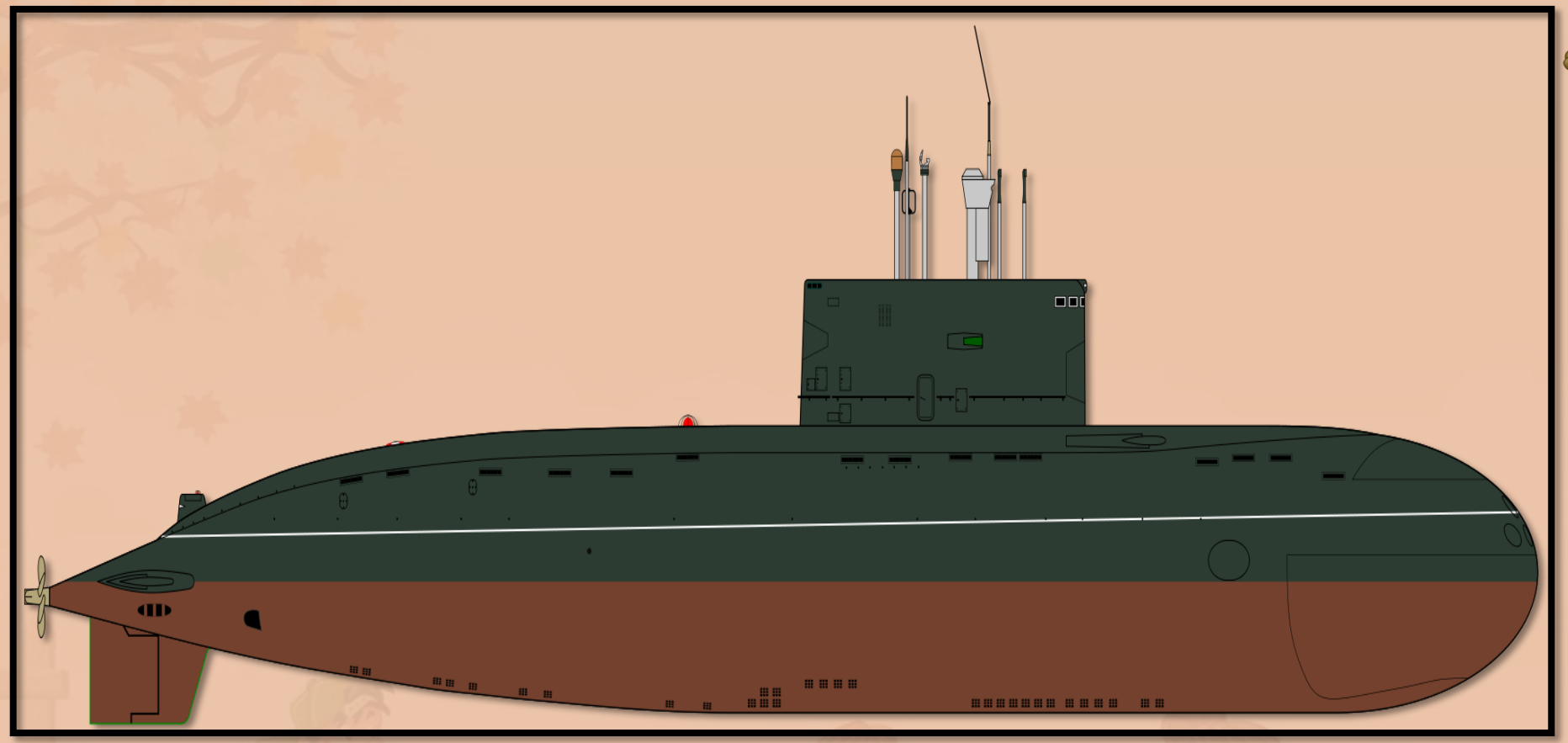
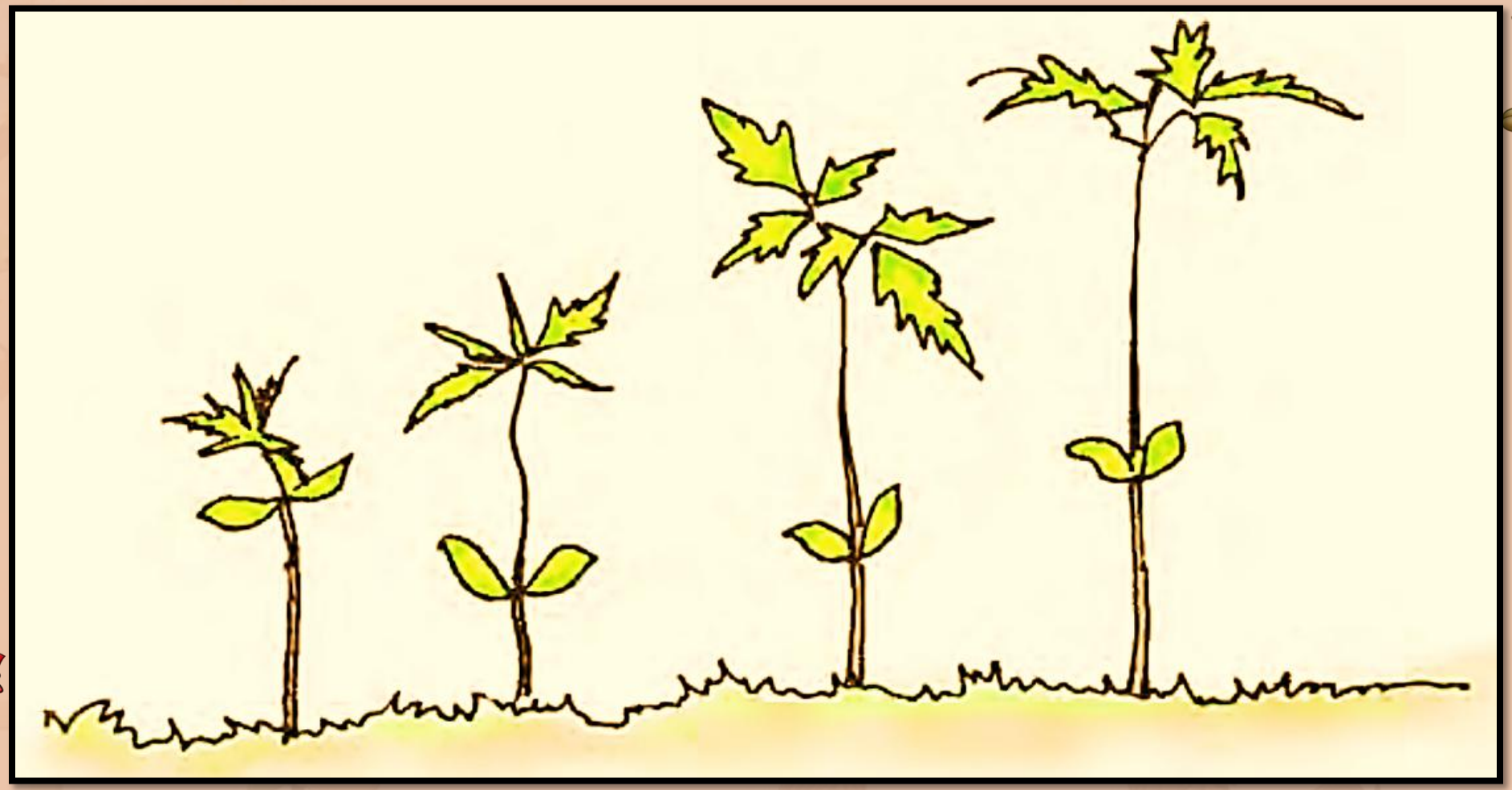


Nitrogen

Living organisms do not use nitrogen directly from air. Plants use nitrogen with the help of bacteria in soil. Chemical fertilizers also contain nitrogen, which is added to make soil more fertile. Animals get their required nitrogen by eating plants, fish and meat.



Carbon Dioxide

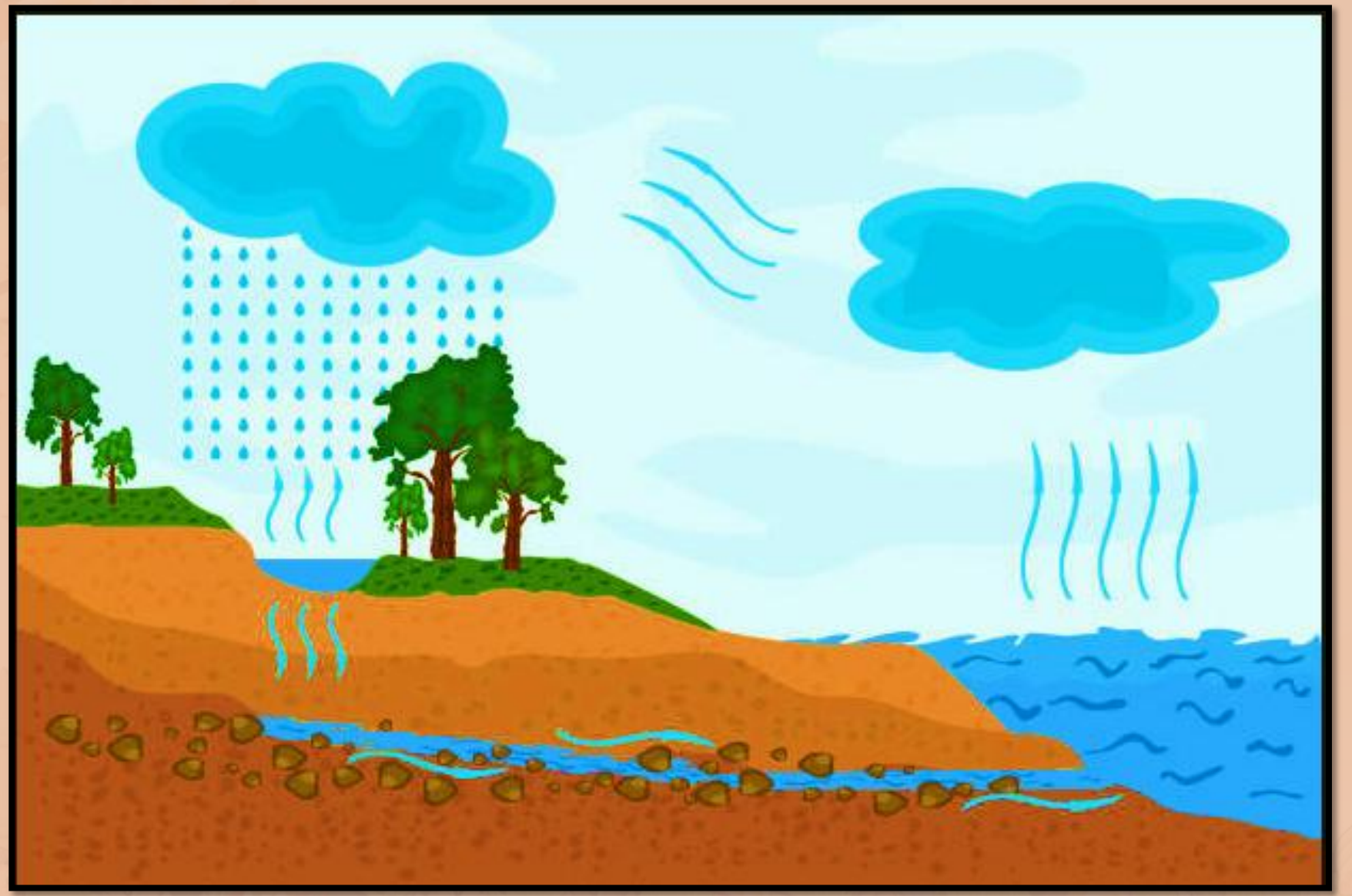
Carbon dioxide has more importance for plants. Plants use carbon dioxide directly to prepare their food along with water and sunlight. This process is called Photosynthesis.

Other Gases

Small amounts of other gases are also found in the air. These gases are: Hydrogen, Helium, Neon, Argon, Ozone, Krypton and Xenon. Argon and neon are used to create colorful electric lights in glass tubes.

WATER VAPOUR

Water evaporates from seas, rivers and lakes which gets collected in the air. Water vapour present in the air also causes changes in weather. It can be condensed and is responsible for the formation of clouds, fog, rain and snow. The amount of water vapour present in the air is termed as the humidity.



Fact File

- Sky appears blue due to scattering of light by the gas molecules in the atmosphere.
- Jetplane often fly in the lower stratosphere to avoid bad weather in the troposphere.

Things to Remember

- Troposphere, stratosphere, mesosphere, thermosphere and exosphere are the different layers of the atmosphere.
- For burning anything air is required.
- Water vapour and dust particles are also found in the atmosphere.
- Plants use nitrogen with the help of bacteria in soil.