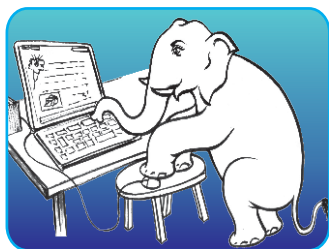
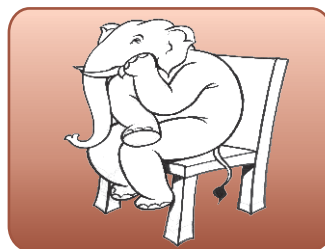


SCIENCE
STANDARD FOUR
Term III

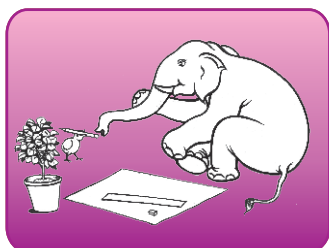
What these Icons stand for !



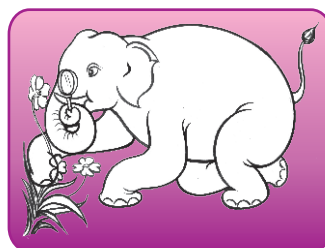
Do You Know ?



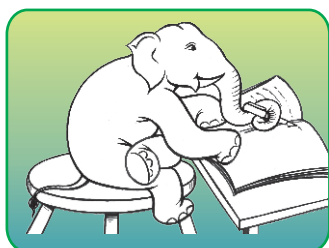
Think and write



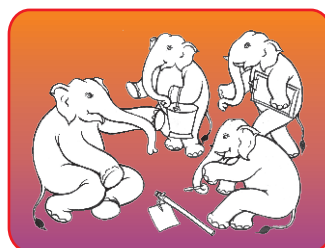
Project :



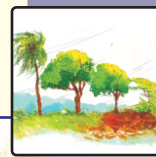
Activity



Evaluation



For Teachers...



A Melody in the breeze..

Air is a mixture - a gaseous mixture!
It's indeed easy to find its measure!!

Oxygen, our friend, supports life on earth,
And Nitrogen fertilizes the earth.

Carbon dioxide makes soft drinks fizz!e!
while inert gases have been a puzzle!!

Water vapour from sea, river and stream,
And the hot, violent, angry whistling steam,

Into the cool air, they rise so slowly!
Merge as thick, soft clouds drifting so gently!!

Look! How softly they come down aglitter
To fill the earth with life - giving water!!

Like a widely spread blanket in the sky,
The clouds guard us from the heat from high.

Ceaseless atomic rays and cosmic dust
Assail our earth like an unwelcome guest.

Our dear pal ozone - oxygen, again -
Puts up a valiant defence in vain.

For man pollutes the air, makes little holes
In the umbrella meant to save our souls!!

To save this gracious earth, our own mother,
We've got to act now, dear sister, brother!

Shall we enjoy the breeze?

Do you like to play by making a paper fan?

When does the fan rotate faster?



Have you seen clothes sway along the cords ?

Why do trees, herbs and climbers sway?



Which are the months suitable to fly kites and why?

There is air around us. We cannot see air, but we can feel it. Air does not have colour or odour. Living organisms need air to breathe.

Water vapour in Air

Water vapour comes out while cooking. Have you seen it? The water vapour that comes out mixes with the air. What else is present in the air?



Activity

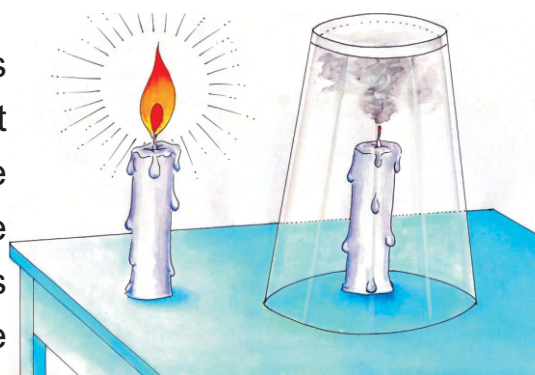
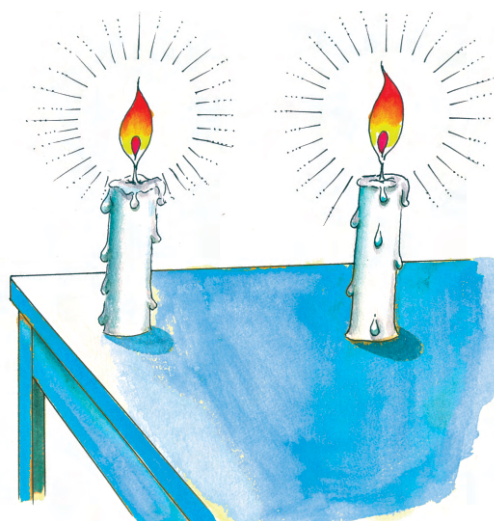


The burning of materials requires oxygen

Light two candles as shown in the picture. Keep one candle closed by a glass tumbler. What happens?

The candle which is kept closed is put out after a little while. But the one which is not closed, burns continuously, isn't it so?

Oxygen present in the air supports burning of materials. **Oxygen** present inside the tumbler is used up by the candle and hence it is put out. But the candle that is kept outside, still burns by taking the oxygen present in the air.



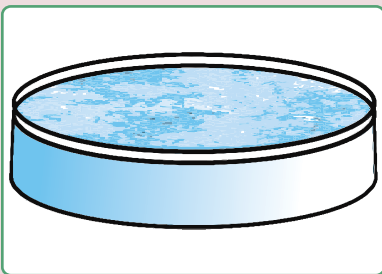
From this experiment we know that...

Oxygen is present in the Air.
The burning of materials requires oxygen

Life-giving Air—Oxygen

Oxygen present in the air is needed for the respiration of man, animals and plants.

Is oxygen alone present in the Air?



Activity



Take lime water (Calcium Hydroxide) in a wide mouthed vessel and keep it in the open. What do you observe?

A white layer forms on the surface of lime water. Doesn't it? Do you know what turns lime water milky? The carbon dioxide that is present in the air turns lime water milky.

Do you know?



Have you seen gas bubbles coming out from the aerated drinks bottles when opened? It is nothing but carbon dioxide which has been dissolved in the drinks.

carbon dioxide is needed for the plants to prepare food.

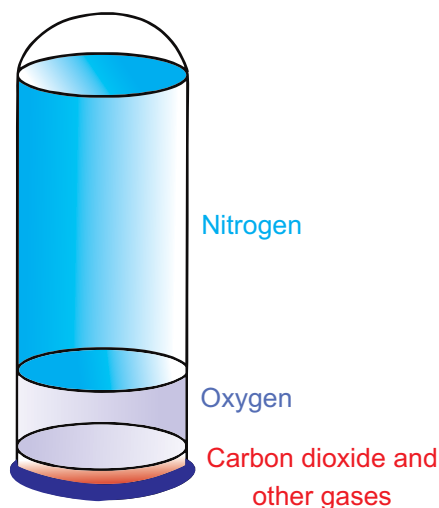
Think it over!



Avoid aerated drinks, as they are harmful to health.

Do you know which gas is mixed in the air in more quantity than oxygen and carbon dioxide?

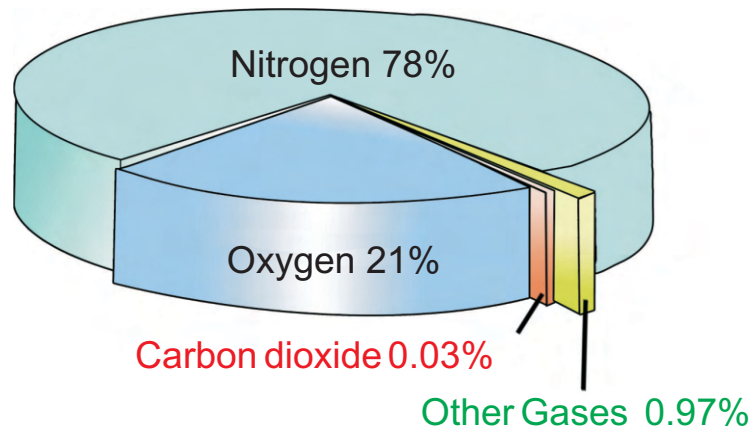
Among the gases present in the air four-fifth of the air consists of Nitrogen. It is necessary for the growth of plants. This requirement is fulfilled by the nitrogen that is in the air. Nitrogen does not support burning. What will happen if the air does not consist of nitrogen? Discuss with your teacher.



Air is a mixture

Gases like nitrogen, oxygen, carbon dioxide, water vapour and dust particles are mixed in the air.

Look at the percentage of gases in the air



Think and write



When we breathe in and breathe out, the percentage of the gases present in the air is given in the table.

Gases	Inspiration	Expiration
Oxygen	21%	18%
Carbon dioxide	0.03%	3%
Nitrogen	78%	78%
Water vapour	trace	more

- Which gas does get decreased during expiration?

- Which gas does get increased during expiration?

Blanket that covers the earth

Due to the gravitational force of the Earth, there is a blanket of air about 1000 km thick around the earth. This is called the atmosphere. This atmosphere helps the living organisms to live, by providing the suitable temperature on the Earth.

Think it over!



Plants do not grow in the soil found on the Moon's surface. But if the same soil is brought to the Earth and the seeds are sown and watered, the plants would grow. Why? Astronauts fixed a tin flag on the Moon but not the flag made of cloth. Why?



Do you know?



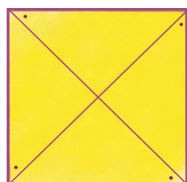
Poison mixed in the air:

In 1984, at Bhopal, the capital city of Madhya Pradesh, there was a leakage of methyl isocyanide gas from a factory. This resulted in the death of thousands of people.

Activity



Look at the picture and try to make a paper fan.



Evaluation



(a) Fill in the blanks.

1. Air is a_____.
2. Plants require_____ gas to prepare their own food.
3. The percentage of oxygen in the air is_____.
4. The atmosphere provides suitable_____.
5. The_____ gas is present in soft drinks.
6. Burning of materials requires_____.
7. Boiling of water resulted in the formation of_____.
8. During expiration_____ gas is at the highest percentage.
9. _____ is needed for the growth of plants.
10. While breathing, the percentage of the_____ gas remains the same.

(b) Match the gases in the air with their percentage.

- | | | | |
|-------------------|---|--------|--------------------------|
| 1. Oxygen | - | 78 % | <input type="checkbox"/> |
| 2. Carbon dioxide | - | 0.97 % | <input type="checkbox"/> |
| 3. Nitrogen | - | 21 % | <input type="checkbox"/> |
| 4. Other gases | - | 0.03 % | <input type="checkbox"/> |

(c) Think and answer.

1. Mention the constituents of air.
2. How is nitrogen useful?
3. Mention two uses of oxygen.
4. Write short notes on the atmosphere.
5. What are the incidents by which we can find out that air is blowing?

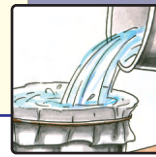
Think it over!



















How does the balloon used for advertisement, fly high in the air?

2

WATER



Rain—Data Calendar

SUN	MON	TUE	WED	THU	FRI	SAT
			 1	2	3	 4
5	6	 7	 8	 9	10	11
12	 13	 14	 15	 16	17	18
 19	 20	 21	 22	 23	24	25
26	 27	28	 29	30		

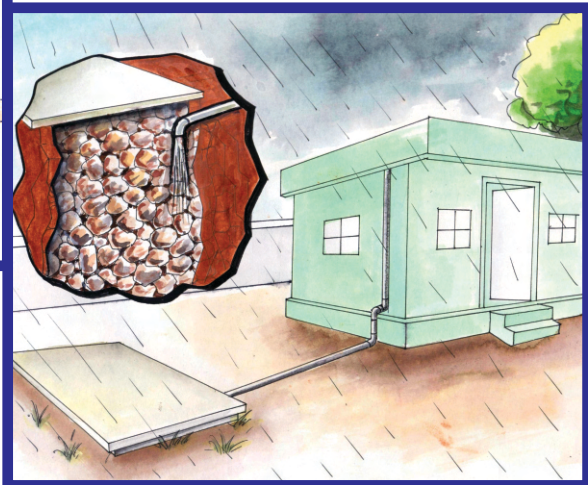
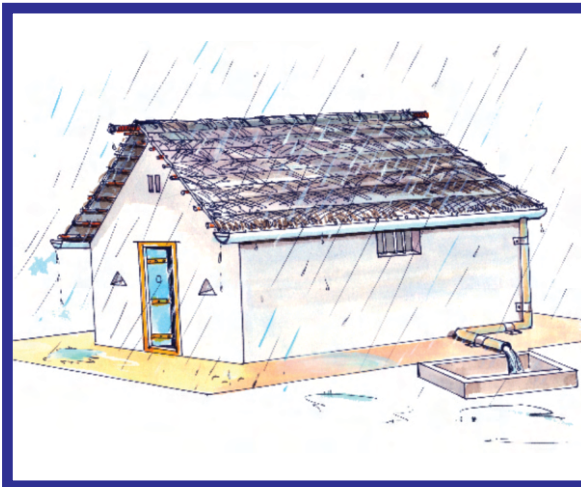
- How many days did it not rain as per this calendar?
- How many days did it rain as per this calendar?
- How many days did it rain heavily?
- From 13th for _____ days, it rained continuously.
- What are the effects of continuous rain?
 - ☐ Flood
 - ☐ Falling of trees
 - ☐ Land slides
- Where will the rain water flow when it rains continuously?

Water! Water!

The excess rainwater during rainy season is stored in natural ponds, lakes and canals. It is also stored in dams that are built across rivers. This kind of stored water can be utilized to check water shortage during the time of drought. Rainwater can be stored for drinking purpose by constructing rainwater harvesting pits. By this method, ground water level is conserved.

We can collect and conserve rainwater from the roofs of all types of houses through proper rainwater harvesting tanks.

Thus we can bring down the level of water shortage.



Do you know?



A few centuries ago Karikal Chozhan constructed Kallanai across the river Cauvery to conserve water.

Activity



Rain Gauge

Requirements : Cylindrical glass vessel, funnel, scale and thread.

Procedure : Place the funnel in the glass vessel. Keep the scale outside the vessel and tie it in such a way that '0' cm of the scale is at the bottom. Keep this set up in the open ground. Measure the amount of rain that fell for the whole day using the scale. The amount of rain for the whole day is _____ cm.

Use this rain gauge and measure the amount of rain for a week and tabulate them.

Days	Amount of rain in cm
1	
2	
3	
4	
5	
6	
7	

Rain Gauge

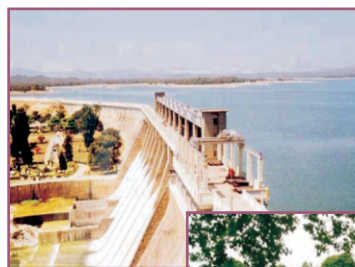


Find out from the newspaper and write what was the average rainfall last year in your district.

Activity



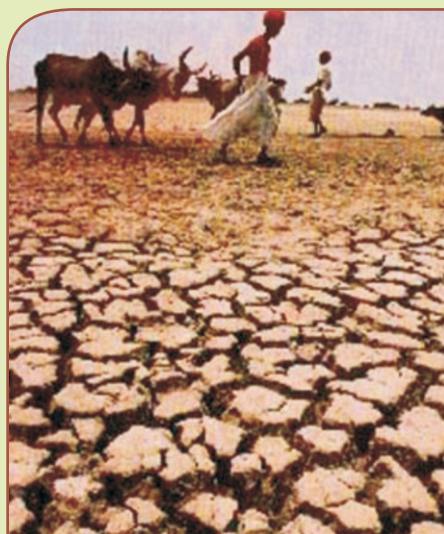
- What are the methods followed to conserve water in your area?
- How do you conserve rain water in your house?



Water Scarcity

Climatic conditions will not be the same throughout the year. During summer, as the temperature increases, the level of water from water resources such as river, pond, well and ground water table decreases. People of various parts of the country suffer from scarcity of water.

We do not get rain in all the months of a year. Whenever there is no rain it is sunny. Which are the months that experience high temperature in your area?



What will happen during the time of drought?

- Drying up of cultivable lands.
- Drying up of water resources.
- Scarcity of water.

Project:



Make a model of a Rain Gauge.

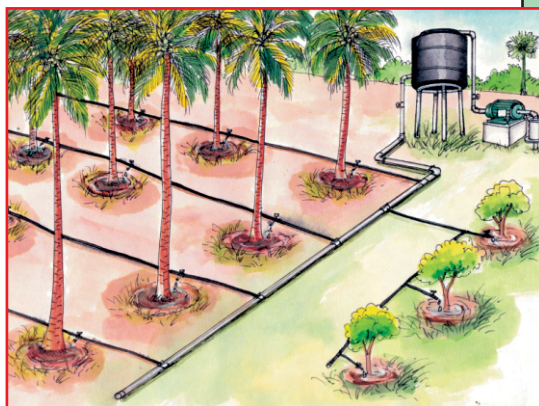
Water scarcity and its ill effects.

Due to the drying up of drinking water resources, we see people

- ✿ Buying drinking water.
- ✿ Waiting in long queue to get the drinking water.
- ✿ Bringing drinking water from far away places.
- ✿ Forest animals enter the residential areas in search of water.

To use water economically

- Letting used water into the garden.
- We can water the plants using drip irrigation method.
- We can water the garden plants using a watering can.



Drip irrigation method

Project



Enter the quantity of water used in day-to-day life in the given table.

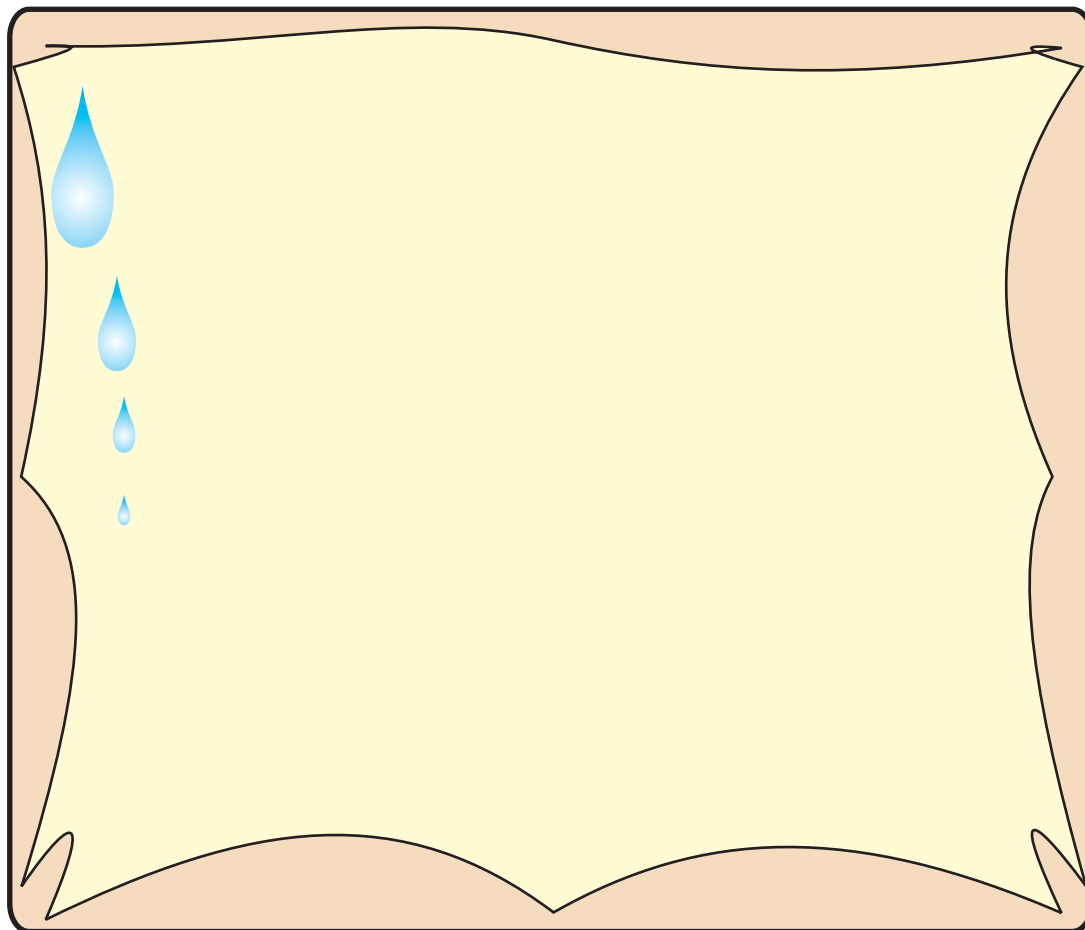
Usage	For one day (in litre)
Drinking	
Cooking	
To take bath, wash face, hands, legs.	
Washing vessels, clothes.	
Total amount of water	

Discuss in group whether water usage in your house is less in quantity, right quantity or more quantity.

Activity



Write the methods to be followed in order to use water economically at home and in school.



CONSERVATION OF WATER

The need for water increases day by day. At the same time, the level of water in water resources are decreasing. In this situation, we must use water wisely.

Drinking contaminated water causes diseases like Cholera, Jaundice, Typhoid, etc. By drinking purified water, we can avoid diseases.

We must preserve drinking water from getting polluted.



How can we get purified / protected water?

1. We must drink water which is purified using certain amount of chlorine.
2. It is essential to drink water which is boiled and filtered.
3. Germs get destroyed by boiling the water. Drinking water vessels must be cleaned often.
4. Drinking water must always be closed with a lid.

Find out and write.

1. How many drinking water taps are there in your school?
2. Where does the stagnant water under the tap go?

Water is not seen in planets other than the Earth. So there is no life in other planets. So we should not waste water which is a very precious resource.

SAVE WATER !

SAVE EARTH !

Evaluation



(a) State whether True or False.

1. There will be drought if it rains heavily.
2. Water resources are decreasing day by day.
3. Chlorine is used for purifying the drinking water.
4. We should not wash very often the vessels in which we store drinking water.
5. Deforestation increases the rain.

(b) Answer the following.

1. Name the diseases caused by drinking contaminated water.
2. What are the hazards of flood?
3. From where do you get drinking water?
4. What are the methods you follow to purify the drinking water?
5. What are the advantages of saving rain water?

(c) Look at the picture and write the activities in the ascending order based on the quantity of water required.

