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GREEN ENVIRONMENT

Unit
1



Learning Objectives

After the completion of this unit students will be able to

- ❖ understand the importance of waste management
- ❖ understand the role of 3Rs in waste management
- ❖ learn how to conserve the environment by practising good habits
- ❖ recognise eco-friendly materials



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Introduction

Nature provides us a lot of useful things. But human beings exploit the natural resources and create more trash. These unwanted materials thrown away are called wastes. They can be solid, liquid and gas. They are produced from households, industries, hospitals etc., These unwanted materials pollute our environment.

Waste Management

Sristhika : Madam, I see a lot of waste things in our surrounding. Is there any way we can reduce wasting things?

Teacher : Yes. There are many ways to reduce waste. Reducing the waste is the first and most important step in waste management.

Vimal : What is waste management, Madam?

Teacher : It is the step we take to handle our waste and to make sure our environment does not get dirty and polluted. Waste management deals with both biodegradable and non-biodegradable waste.

Janani : Can you please explain the steps in waste management Madam?

Teacher : Yes, sure. There are four steps in waste management. They are

1. Separation of Waste
2. Waste collection and transportation
3. Waste recycling and composting
4. Waste disposal



1. Separation of Waste: This is a very important step in waste management.

It means to sort or divide the waste into different waste bins. Each bin should have different type of wastes. It is good to separate waste in three different bins. Green for biodegradable waste, Blue for recyclable waste and Red for non-recyclable waste. Non-biodegradable waste can be classified as recyclable and non-recyclable.



2. Waste collection and transportation: Once we separate our waste in our homes

and schools, it is important to keep it ready to be picked up by our municipality or corporation. Picking up the waste is called Waste collection. Moving the waste from one place to another is called Transportation.



3. Waste recycling and composting: Biodegradable waste is taken to a place where it can be converted into compost. Compost makes the soil fertile. Non-biodegradable waste that can be turned into something new (recyclable waste) and valuable is taken to recycling factory.



4. Waste disposal: The waste that cannot be recycled (non-recyclable waste) needs to be sent for final disposal. This waste is sent to an open dump or landfill.



ACTIVITY

Write the waste management process in the correct order.

(Waste disposal, Waste collection and transportation, Waste separation, Waste recycling and composting)

1. _____
2. _____
3. _____
4. _____



Rahul : How can we manage waste at home?

Teacher : There are many things we and our family can do to manage waste at home. Three R's help to manage waste.

Gomathi : What are the three R's, Madam?

Teacher : The three R's stand for **REDUCE, REUSE, RECYCLE**. We must first reduce, then reuse and finally recycle.



THE 3 R's

Reduce is to make or use less materials. This is to make, buy and use things that create less waste. It is the best thing to do first and it is easy to ask yourself - How can I make less waste? Some examples are given below.

1. You can buy a refill pen and change the refill only when the ink is used up.
2. While shopping with your parents, you can carry a cloth bag. In this way you can avoid buying plastic carry bags.
3. Turn off lights and fans when you leave a room.
4. Close the tap while you are brushing your teeth.





ACTIVITY

List out four things that you can reduce, reuse and recycle at home or school.

Reduce	Reuse	Recycle

Reuse is using a thing repeatedly for the same or for another purpose. By reusing, we throw away less waste and do not dispose it in a dump. Reuse saves money, energy and time. Here are some examples of how you can reuse materials at home.



1. You can reuse old clothes as a rag to clean your home or even wash your cycle.
2. You can reuse jam and pickle jars to store things.
3. You can donate old clothes that still look good to poor and needy children.
4. You can reuse waste and make something new. E.g. You can reuse a plastic bottle as a pen stand or a bird feeder.



Recycle is to take materials from things you throw away and make new products by using them. Recycling takes energy and time but saves the amount of 'new' resources we need to make things. E.g. water, minerals, wood.





Here are some examples of how certain materials are recycled.

1. Old newspapers, note books and magazines are separated and sold to a scrap dealer. They will be made into new papers.
2. PET bottles are recycled into plastic threads and then used to make sports T-shirts.
3. Old glass bottles and broken glass pieces are melted to make new glass.
4. Broken metal items like tiffin boxes and plates are melted and made into new metal products like toys.



ACTIVITY

Using old water bottles, make different things such as Bird feeder, Flower vase, Pen holder and Wall hanging as shown below.





Conserve our Environment

Rahul : What is meant by conservation of environment, Madam?

Teacher : Conservation of environment means to protect all things found in nature. It means that we have to use our Earth's natural resources (like water, soil, minerals, wildlife and forests) carefully.

Vimal : How can I conserve the environment?

Teacher : Everyone can conserve the environment by following good waste management habits.

What is the first 'R' in the three R's?

Kanimozhi : Reduce.

Teacher : Correct! We should first try to reduce the waste we make. Thus, we can easily conserve the environment. We can also separate our waste at home to keep our place litter free and clean.



Waste Separation

Waste at home should be separated into biodegradable, recyclable and non-recyclable waste. Waste like left over food, vegetable waste which are broken down naturally should be collected in a separate litter box. Materials which cannot be decomposed should be placed in separate dustbin. Paper waste, glass waste and aluminium waste which can be recycled into new useful products should be kept in separate box.



Glass containers for food and beverages are 100% recyclable and can be recycled endlessly without loss in quality or purity.



ACTIVITY

Study the images below and write down three items you have at home in each category of waste.

Biodegradable



Recyclable items



Non-recyclable items



1. Biodegradable:

2. Recyclable:

3. Non-recyclable:



Sristhika : I have heard the news that plastic is harmful to our environment. Is it true Mam?

Teacher : Plastic itself is not bad but we are using too much of it. Over use of plastic causes pollution. Plastics that are used only one time causes pollution. It is good to avoid or reduce one-time usable plastics. The best way to start is to ask yourself this question. Is this plastic item going to be used one time or many times? If you can use it only once, then try to avoid buying such plastic items.

Plastics in Tamil Nadu

Tamil Nadu is leading the way in India by banning some one-time use plastic items. List of items banned in Tamil Nadu are given below.



Animals eat **plastic bags** by accident and their food passage is choked.



Plastic plates stay in the environment for over 1000 years.



Water pouches litter the land and are difficult to recycle.



Plastic straws are difficult to recycle and end up polluting the ocean.



Chemicals from **plastic sheets** leak into food.



Ekalaivan : What are the things that can be used instead of plastic, Madam?

Teacher : We can use things that are harmless for the environment. These are called environment friendly or eco-friendly materials, and can be either biodegradable or reusable.



Environment friendly materials

Things that can be decomposed or broken down by microorganisms are biodegradable. They can return to the soil and enrich the soil. Materials which are beneficial to the environment and do not cause harm are called eco-friendly materials.

For example, banana leaves are used as plates. They are fully biodegradable and do not contain chemicals like thermocol plastic or coated paper plates.

Bamboo is used to make many things such as bags, dustbins and even toothbrushes.





Eco-friendly Activities:

- Reduce your paper use by writing on both sides of every sheet.
- Stop using plastic straws.
- Use reusable bag.
- Give up chewing gum.
- Buy stainless steel bottles instead of plastic water bottles.
- Reuse containers for storing left overs.



The first fully synthetic plastic was invented by Leo Baekeland in 1907



ACTIVITY

Form small groups and start collecting plastic litter from school grounds or from the local area around your house.



Teacher : Some environment friendly materials are not biodegradable but very strong and can be used for many years. Reuse is the second R in three R's. By reusing something again and again, we reduce waste and conserve the environment.

Rahul : Can you please give us some examples?

Teacher : Yes, sure.



Stainless steel water bottle and snack box are some examples of eco-friendly materials. Stainless steel does not leak chemicals into your food or water. So it is safer than plastic. These can be reused for a longer period of time.



ACTIVITY

Write any five non-recyclable items that you use or have seen in shop.

Litter Free Environment

Litter in our environment is unsightly and spoils our experience of nature. It is also dangerous to animals that ingest it. Cleaning up loose waste is one of the best ways to keep our community and the environment green. By removing litter from environment, we are ensuring that it does not end up in our oceans.

National Green Corps (NGC)

It is a national programme initiated by the Government of India. The motto of NGC is

"Where there is Green, there is Prosperity"

It involves NGC school students in protecting and promoting the conservation of natural resources. They participate in activities like biodiversity conservation and waste management.



Make sure you put litter in a bag or in a dustbin.

When others pass you as you pick up litter, smile and say hello. It shows pride in community and encourages others to do their part



Evaluation



I. Choose the correct answer.

1. What is the first step in waste management?
(a) Waste disposal (b) Waste separation (c) Waste collection
2. Which is an example for non-biodegradable waste?
(a) Paper cup (b) Plastic plate (c) Coconut shell
3. Picking up the waste is called _____.
(a) Composting (b) Waste collection (c) Recycling
4. _____ is the first 'R' in the Three R's.
(a) Reuse (b) Reduce (c) Recycle

II. Fill in the blanks.

1. _____ is an example of reusing waste.
(Using old jars for pickle/Saying no to a plastic bag)
2. _____ is used to make bags, dustbins and tooth brushes.
(Rose / Bamboo)
3. _____ is a big threat to our environment.
(Plastic / Light)
4. _____ is a non-recyclable item.
(Glass / Multilayer plastic)

III. Match the following.

- | | |
|------------------------------|--|
| 1. Plastic waste | - Three R's |
| 2. Waste separation | - Eco-friendly material |
| 3. Reduce, Reuse and Recycle | - Threat to environment |
| 4. Stainless steel | - Biodegradable, recyclable and non-recyclable |



V. Write true or false.

1. 3R method reduces the amount of waste that goes to landfills.
2. Eco-friendly material is harmful to the environment.
3. Plastic bag, thermocol and multilayer plastics are recyclable.
4. We should not separate our waste.

VI. Answer in one or two sentences.

1. What are the Three R's?
2. What is biodegradable waste?
3. Write the different steps in waste management.
4. Name any five items which are recyclable.

VII. Answer the following.

1. How will you manage the household waste?
2. What are the plastic items that have been banned in Tamil Nadu?
3. Write the benefits of recycling.
4. What is meant by eco-friendly material?



LIFE OF ANIMALS

Unit
2



Learning Objectives

After the completion of this unit students will be able to

- ❖ understand group behaviour in animals
- ❖ know adaptation in animals
- ❖ explain the structure of insects.
- ❖ list out special senses in some animals
- ❖ know about animals active at night
- ❖ understand parental care in animals



Introduction

Have you ever wondered why a dog drools on seeing food? Why cuckoo sings only during summer? Why baby birds open their mouths when the mother returns to the nest?

Each animal has some unique behaviour. Animal behaviour includes the activities of an animal and its interaction with other organisms. E.g. Blinking, eating, walking and flying.

Group Behaviour in Animals



ACTIVITY

Match the animals with their group behaviour



Lives alone

Lives as part
of a group





Animals gain a lot of benefits from spending time together with other members of the same species. This is called group behaviour. Animals like tiger, bear etc live in solitary (alone). Some animals live in small groups (E.g. Pride of a few lions) and some live as larger herd (E.g. Herd of thousands of wildebeest).



Some animals such as elephants, squirrels, rats and bats do dream during sleep. But cats, dogs and monkeys have longer dream time.

Group behaviour is also called social behaviour. Members of the group work together to find food, defend themselves and look after the young ones. E.g. All the fish in a school move together, following their leader in the front. Staying in a group helps the small fish appear big. The main purpose of group behaviour is to help animals survive in nature.

Group behaviour in Bees

When insects live together, they often follow a hierarchy. E.g. Bees have one queen bee in every hive. There are a few male bees called drones. There are hundreds of female bees, which are the worker bees.



Nesting Behaviour in Birds

Birds are very different from each other. They live in different places, eat different foods and have different life styles. Some birds permanently live in groups while others come together only during the breeding season. Birds also live in groups and each bird's group has a different name. E.g. Flock of parrots, Stare of cranes.

Not all the bird species build nests. Some of them lay their eggs on the ground or in gap between rocks. Most of the birds build their own nests carefully like engineers. They build nests for their young ones. Some weave leaves, some use twigs, some build with thorns then pad it with soft materials.





Social weavers do not build individual nests. All males work together and build a common nest in which 400 birds can be housed.



Though green heron cannot swim, it stills eats fish from the water. How? It drops colourful leaves and fruits into the water. When the fishes pop out to investigate, the heron catches them.



Group behaviour in Elephants

Elephant group is called Herd or Parade. For each group there is a female head, which leads the group towards the availability of food, water and safety. The leader fights for their group. All animals in a group obey the command of their leader. Older animals teach manners and life skills to young ones.



Animals and their Group Names

Animal	Group name	Animal	Group name	Animal	Group name
Lion	Pride	Fish	School	Ant	Colony
Wolf	Pack	Sheep	Flock	Owl	Parliament



Advantages of Group behaviour in animals.

S.No	Group behaviour	Example
1.	Procuring food	Hunting and sharing in tigers.
2.	Taking care of young ones	Female elephant takes care of its calf.
3.	Protection from predators.	Wildebeests make sounds to alert their group.
4.	Division of labour	Honey bees collect nectar, build comb and clean hive etc
5.	Energy conservation	Birds fly in "V" shape to reduce wind resistance.



Sea otters hold hands while they are sleeping, so they do not drift apart.

Adaptations in Animals

Adaptation is the most essential factor of all living beings. The changes in an animal's behaviour to adjust with its habitat is called adaptation. If an organism fails to adapt to the particular environment, its survival is difficult.

All animals have special body parts to live in a particular place at a particular time. E.g. Giraffes have developed very long necks because of their environmental demands.



ACTIVITY

Observe any animal in your surrounding and write a creative short story about it.



H8Z8U2



Some more examples of adaptations are given below.



Tigers and Zebras have lines so they can hide themselves



Camels have broad feet to walk in the desert.



Fish have gills to breathe in the water and fins to swim.



Elephants have long and large trunk to get their food in the forest.

There are three basic types of adaptations seen in animals. They are,

1. Structural adaptations

Changes in the physical features of the animal are called structural adaptations.

E.g. **Polar bears** living in cold climate have physical adaptations, such as thick fur and short ears to reduce heat loss.

2. Physiological adaptations

Changes in the functions of the animal's body are called physiological adaptations.

E.g. **Dog** shivers to generate more heat when it is cold and pants when it is hot.

3. Behavioural adaptations

Changes in the activities of the animal are behavioural adaptations.

E.g. **Birds** migrate to avoid adverse conditions.

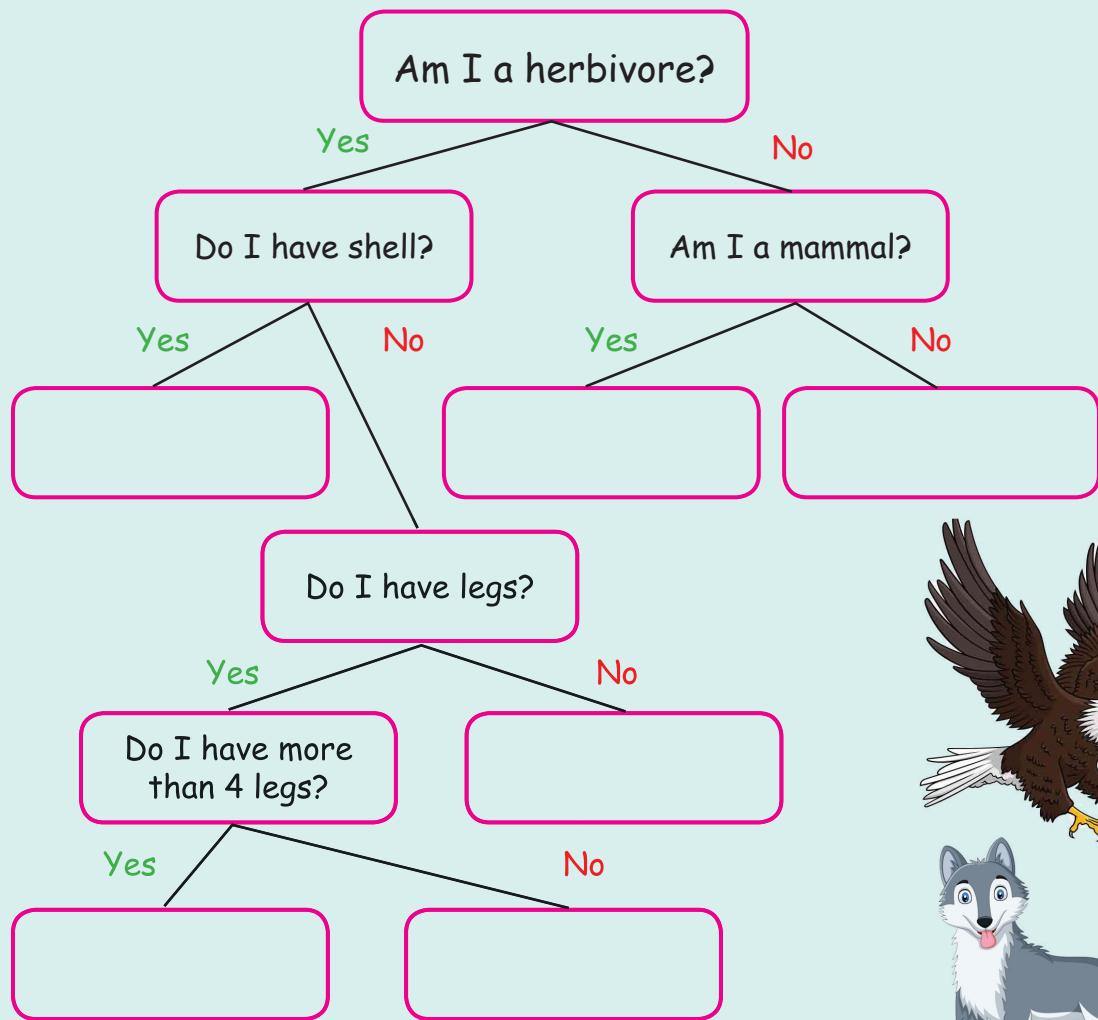


- Porcupines have thorns on their body to fight against their enemies.
- Alligators have sensitive skin which can feel even small vibrations in the water.



ACTIVITY

Who am I?



Hawk



Wolf



Earthworm



Caterpillar



Squirrel

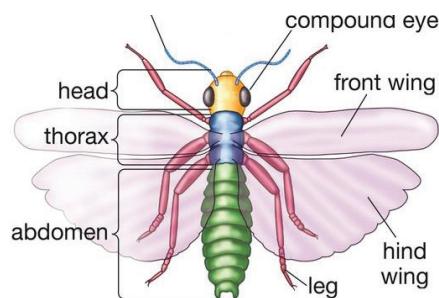


Snail



Structure of Insects

- Insects have three main body regions. They are; Head, thorax, and the abdomen. All parts of the insect are inside an exoskeleton.
- **Head** The main visible parts on the head are the large compound eyes, the antennae (feelers) and the mouth parts.
 - **Thorax** The thorax is the middle region of the body. It bears three pairs of legs and two pairs of wings.
 - **Abdomen** The abdomen is the last part of the insect body. Abdomen of most of the insects have clear segmentation.



Insects have differences in structures like wings, legs, antennae and mouthparts. The legs are modified for walking, jumping, digging or swimming.

Most of the insects have wings which can be folded flat over their body. E.g. Bug There are some insects which cannot fold their wings. E.g. Dragonfly. Some insects are wingless. E.g. Silverfish.



The compound eyes of insects are made up of small units called ommatidia.



ACTIVITY

Fill in the missing words.

Butterfly has three body parts like all other insects the _____, the _____ (chest), and the _____ (bottom). The butterfly has four _____ and six legs, attached to the thorax. Butterfly uses its two _____ to smell.



Special Senses in Ants and Bats

Some animals have well developed special senses. These special senses help the animals experience the world around them.

Ants

Ants have sense of sight, smell, taste and touch. Ants have organs of smell and taste in their antennae. They feel the vibrations in the ground through their feet. Ants have a good sense of smell.



ACTIVITY

- Place a few sugar cubes in a plate.
- After sometime, you can see some ants visiting the plate.



- Adding sugar to your cat's food is of no use, because cats cannot taste sweetness.
- Most snakes have poor eyesight. Snakes use their tongue to smell their surrounding.

Bats

Bats have a good sense of hearing. They use sound navigation. They produce ultrasonic sound which helps the bats find their way at night and find out the objects on their path. This is called "Echolocation".



Vampire bats feed on the blood of their prey. Vampire bats have heat-detecting noses which allow them to find their prey.



Animals Active at Night

When do you wake up? _____.

When do you sleep? _____.

When do you play? _____.

Some animals sleep in the day time and are very active at night. A good example is cat at your home. Not only small animals but also some birds are active at night. Such animals are called **Nocturnal animals**. E.g. Owl.



Animals that are active during day time are known as **Diurnal animals**
E.g. Hen, horse, camel etc.

Lions are active both during day and night.

Nocturnal creatures generally have highly developed senses of hearing, smell, and specially adapted eyesight.

Some examples of nocturnal animals are given below.



Cat



Mouse



Firefly



Owl



Bat



Moth



ACTIVITY

Word search puzzle - Nocturnal Animals

S	N	A	K	E	O	B
X	O	W	L	U	N	A
L	V	F	E	C	A	T
F	I	R	E	F	L	Y



Parental Care

Efforts taken by the adult to take care of their young ones is called **Parental care**. Parental care increases the survival rate and improves the quality of young one. It also increases the reproductive success of animals.

Kangaroo

Kangaroo is best known for parental care. Female kangaroo carries its baby in its pouch. The pouch provides a safe place for the young ones to stay until they grow large enough to survive outside on their own.



Cow

Cow gives milk and protects its calf from the enemies. Mother and calf communicate with each other through a sound. Calves respond to the calls from their own mother by calling back.



Human beings

Humans promote and support the physical, emotional, social and intellectual development of their child. The human infant or baby is completely helpless at birth. Mother takes good care of the baby by feeding, helping to sleep and making comfortable with clothes etc. Through proper parenting the child is taught whatever needed to live successfully in the society.



ACTIVITY

Animal observation

Name of the animal	What is the adult doing?	What is the young one doing?



EVALUATION



I. Who am I?

1. My group is called colony. -----
2. Our home is nest. -----
3. My feet are broad to help me walk in the sand. -----
4. I use sound navigation to find the objects in my path. -----
5. I am active during day time as well as night time. -----

II. Fill in the blanks.

1. The animals which are active at night are called -----.
2. ----- is best known for parental care.
3. The group of owls are called -----.
4. ----- lives in hives.
5. ----- bites us and sucks our blood.

III. Match the following.

- | | |
|--------------------|---------------|
| 1. Wingless insect | - Smell |
| 2. Elephant | - Gills |
| 3. Giraffe | - Herd |
| 4. Ants | - Long neck |
| 5. Fish | - Silver fish |

IV. Answer the following questions in brief.

1. Why do birds build nests?
2. What is meant by structural adaptation?
3. Define echolocation.
4. How do ants feel the vibration ?
5. List out any three animals that live in groups.
6. Why do birds fly in 'V' shape?

V. Give short answers.

1. Why do animals live in groups?
2. Explain the three main body regions of insect.
3. What are nocturnal animals?



AIR WE BREATHE

Unit
3



Learning Objectives

After the completion of this unit students will be able to

- ❖ know that air is a mixture
- ❖ understand the composition and components of air
- ❖ explain air pollution and its effects



Introduction

Our earth is made of land, water, and air. All three components are very much important for the survival of all living creatures. Air is present all around us and is very important for our lives. It is very important to cause rain and for the growth of crops. It is needed for the respiration of plants and animals.



ACTIVITY

Take a squeezable bottle. Make a hole on the lid and close the bottle tightly. Bring the bottle near your face and press the bottle. What do you feel?



Importance of Air in Our Daily Life

1. Oxygen present in air is needed for respiration.
2. We can speak and hear the sound only when there is air around.
3. Air helps in the dispersal of seeds for plant reproduction.
4. Monsoon and rain occurs due to the wind action.
5. Air regulates the atmospheric temperature.



Let us do

Tick the objects which has air in it.



Air is a Mixture

The air we breathe consists of a mixture of gases. It contains solid and liquid particles too. Air can be separated into its constituents such as oxygen, nitrogen etc. Water vapour mixes with air and becomes a part of it. Air also contains dust and smoke. Air shows the properties of all the gases present in it. E.g. Air supports combustion because of oxygen present in it. While cooking using firewood, fanning air helps in burning of fire wood.

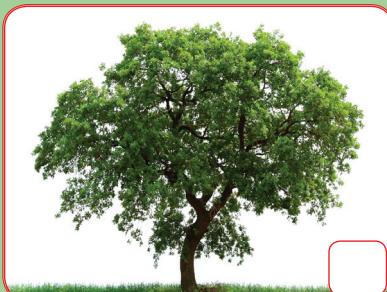


How do we get cool water from a clay water pot on hot sunny days? Clay pot has thousands of tiny pores through which water seeps out. This causes cooling effect.



Let us do

Tick the object which gives out water vapour.

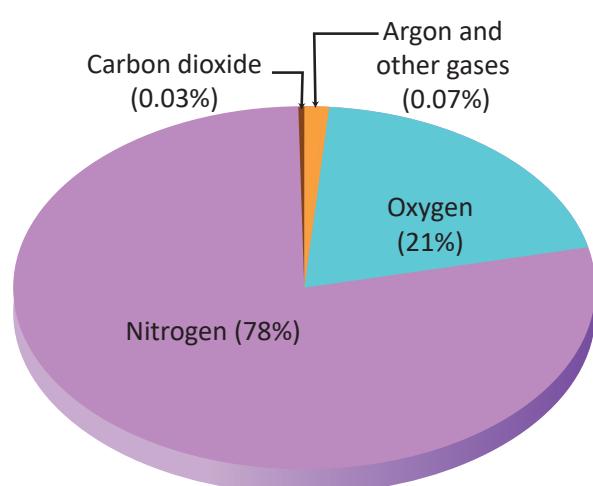


The nathaswaram and the flute are some of the examples for wind instrument.



Composition and components of air

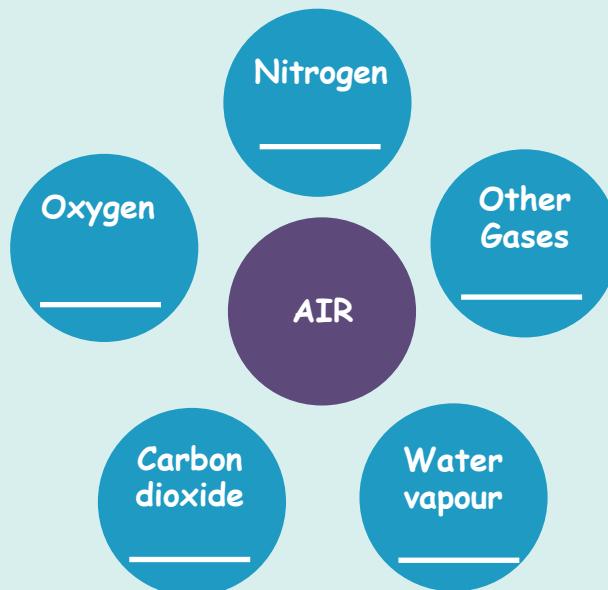
The composition of air is not constant. It varies from place to place and over time. Air is not a single element; it is made up of different substances.





Activity

Write the percentage of the gases present in air.



Nitrogen

The amount of Nitrogen present in air is about 78%.

It is used to fill up food packages to extend their shelf life.

Liquid nitrogen is used to store living cells.

Plants need nitrogen for their growth. We can see root nodules containing nitrogen in some plants.



Nowadays people use nitrogen gas to fill the tyres of their vehicles. Some compounds of nitrogen are used as explosives also.



In 1772, the Scottish chemist, Daniel Rutherford, reported "noxious air," which now we call "Nitrogen".



Activity

You might have seen some huge colourful balloons flying high in malls. Those balloons are filled with nitrogen gas. Write the reason for filling nitrogen gas in balloons.



Oxygen

It is one of the main components of air. The amount of Oxygen present in air is about 21%. All the creatures cannot live without oxygen. It can be tested with a piece of glowing splint, which relights in oxygen.



Uses of oxygen

1. All living things use oxygen for breathing.
2. Oxygen is essential for burning.
3. Oxygen cylinders are used in hospitals to enable the patients to breathe when they cannot breathe normally.
4. Oxygen is used in gas welding.



Mountaineers carry oxygen cylinders at high altitudes.

Deep sea divers also carry oxygen cylinders along with them while diving deep into the sea.

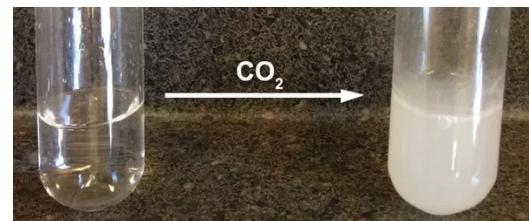


Carbon dioxide

The amount of carbon dioxide present in air is only 0.03%. Though it is less in percentage its uses are more and essential. It can be tested with lime water. The lime water changes from colourless to milky.

Uses of carbon dioxide:

1. Carbon dioxide helps plants in photosynthesis.
2. It is used in fire extinguishers.
3. It is used in refrigerators as dry ice for cooling purposes.
4. It is used to make plastics and polymers.



The Scottish chemist Joseph Black discovered that carbon dioxide is present in air.



Air has other gases like hydrogen, helium, argon etc. in small proportion. Air also contains water vapour which varies according to the environment. When we breathe, we take oxygen from air and release carbon dioxide and water vapour to air.



ACTIVITY

Classify the following.

(Dog, cat, coconut tree, monkey, brinjal plant, papaya plant)

Things which give out oxygen	Things which give out carbon dioxide



A grown up tree intakes 1/3 of carbon dioxide exhaled by one person and it gives out the same amount of oxygen required by a person. Hence, three trees are needed to fulfill the required oxygen for a man to survive.

Air pollution

The atmospheric balance is disturbed by human activities. This leads to environmental problems like air contamination and global warming. The air carries soot, smoke, and other particles from car exhaust and power plants. These are the major contributors to air pollution.



Activity

Look at the path of light rays entering through window of your home/school. You can see lot of tiny particles suspended and moving in the air. These are dust particles. You can also test the same with the help of a torch light in darkness.



Covering our mouth and nose while sneezing or coughing prevents spreading of germs through air to people around us.



Adverse effects of air pollution

Global warming	This changes the climatic conditions of different regions of the world. It also causes disturbances in agriculture and food production. Melting of snow caps and increase in sea levels are the consequences of global warming	
Formation of smog	When dust particles and smoke combine with fog in the presence of sunlight, smog is formed. It reduces the visibility. It also causes many respiratory disorders and allergies.	
Formation of acid rain	Sulphur dioxide and nitrogen oxides react with water in the atmosphere producing sulphuric acid and nitric acid. These acids come down along with the rain. This is called acid rain. Acid rain <ul style="list-style-type: none">• causes respiratory and skin disorders• damages the leaves and affects the productivity of plants• enters the ground and river waters causing harm to the aquatic life• erodes marble and damages monuments like Taj Mahal.	
Aerosol formation	When liquid or solid particles are dispersed in air, it is called aerosol. Aerosols are deposited on the leaves affecting photosynthesis.	
Depletion of Ozone	The hydrocarbons such as the Chloro Fluoro Carbons (CFCs) destroy the ozone layer. Ozone holes allow the UV rays to reach the earth's surface. UV radiation harms wildlife, damages plants and causes skin cancer in humans.	



Activity

Tick the causes of global warming

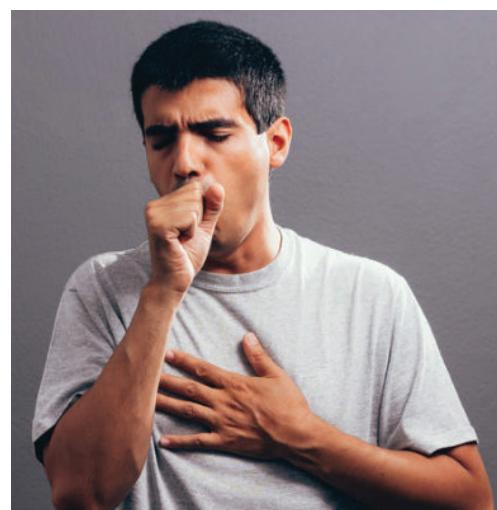


Effects of air pollution on human beings

Air pollution has bad impact on human health. When the pollutants increase in air, they cause irritation in the eyes, nose and throat. Air pollution can also produce wheezing, coughing and breathing problems in humans.

Some of the major effects of air pollution on human beings are:

1. Respiratory diseases. E.g. Flu, Tuberculosis
2. Cardiovascular damage.
3. Fatigue, headaches and anxiety.
4. Nervous system damage.





Activity

- Go by walk or use a bicycle to nearby places.
- Plant more trees.



Steps to check air pollution

Air pollution can be reduced by the following steps.

1. Alternative source of energy (E.g. Solar energy) should be used.
2. Air filters should be used to prevent harmful gases mixing with air.
3. Smoke emission test and certification of motor vehicles must be enforced.
4. More trees should be planted to absorb carbon dioxide.



Alternative source of energy are Solar Power, Nuclear Power, Hydroelectric Energy, Wave Energy, Biofuels, Natural Gas, Geothermal Power, Wind Energy, Biomass Energy, Tidal Energy and Hydrogen Gas



Activity

Write slogans on harmful effects of air pollution in a chart and stick it on the display board

1. _____
2. _____
3. _____
4. _____





EVALUATION

I. Choose the correct answer.

1. Air is a _____.
(a) Mixture (b) Compound (c) Complex
2. Percentage of Oxygen in air is about ____%.
(a) 21 (b) 78 (c) 1
3. Root nodules of some plants contain _____.
(a) Oxygen (b) Nitrogen (c) Neon
4. The major cause of air pollution is _____.
(a) Waste (b) Smoke (c) Water vapour



II. Who am I?

1. I am a mixture of gases.
2. I give you oxygen.
3. I am not the supporter of burning.
4. You can help me to decrease pollution by riding on me.

III. Write 'True' or 'False'.

1. Plants need nitrogen for their growth.
2. Air is made up of oxygen only.
3. The gas used for burning things is Argon.
4. Carbonated drinks are bad to health.

IV. Match the following.

- | | | |
|----------------|---|---------------|
| 1. Nitrogen | - | Air pollution |
| 2. Balloon | - | Smoke and fog |
| 3. Smog | - | 78% |
| 4. Lung cancer | - | Air |

V. Fill in the blanks.

1. Air is a mixture of many _____.
2. Amount of carbon dioxide in the air is ____%.
3. We inhale _____ gas.
4. _____ is used in fire extinguishers.



VI. Answer the following questions in brief.

1. What are the importance of air in our daily life?
2. What are the components of air?
3. What are the adverse effects of air pollution?
4. List uses of oxygen.

VII. Give short answers.

1. How can we reduce air pollution?
2. What are the diseases caused due to air pollution?
3. List out the uses of carbon dioxide.