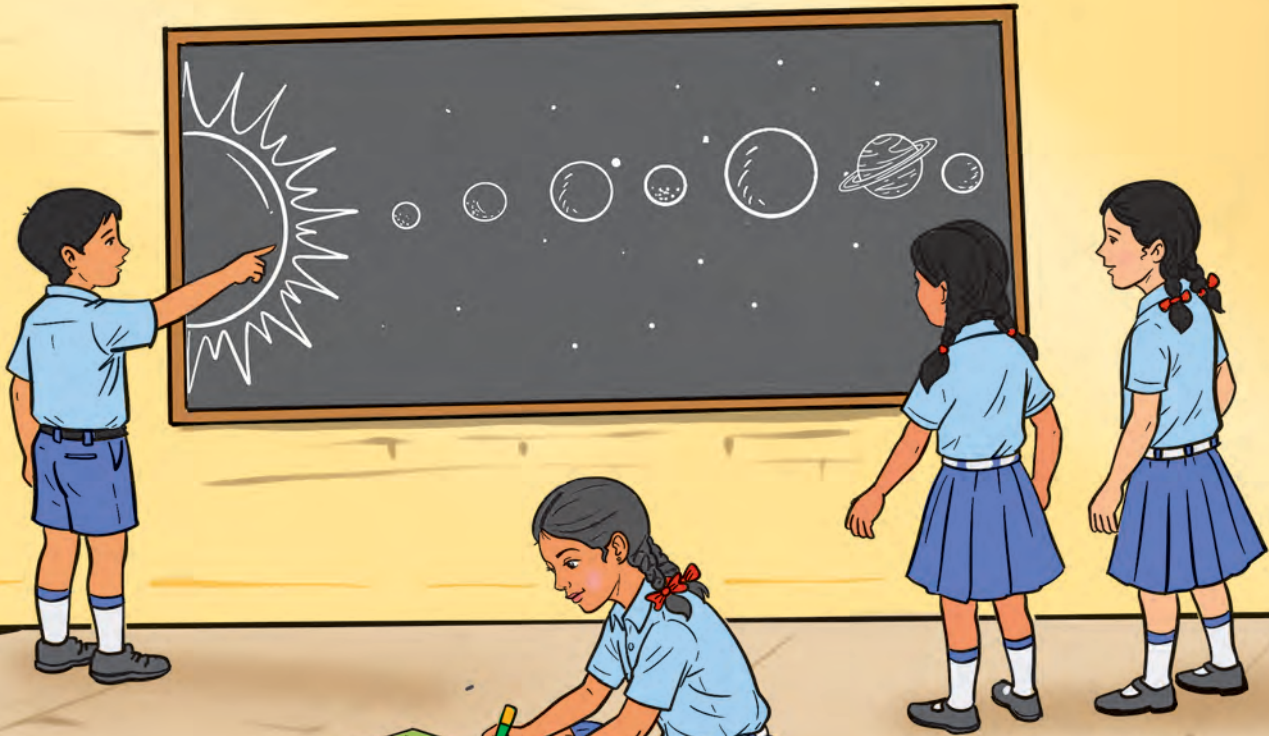




The World Around us

Part - 1
Standard Four



For
Free
Distribution





Tele MANAS Helpline

**Tele MANAS (Tele Mental Health Assistance and Networking Across States)
(14416/ 1800-89-14416)**

Under the National Mental Health Program, the centrally sponsored scheme Tele MANAS is being implemented in the state of Maharashtra from October 2022. Under the Tele MANAS Program, free 24×7 integrated and comprehensive mental health services are provided through the helpline number 14416. This includes treatment and counselling by experts for various mental problems. The information provided by you after calling the Tele MANAS helpline remains completely confidential, so students, parents and teachers should feel free to call the helpline number and tell them about their problems and doubts and get guidance on it. Tell others to take help from this facility as well.

Manodarpan

The Manodarpan Helpline (8448440632) is a free telephone service that has been made available since July 2020. It is provided by the Ministry of Education through the Manodarpan Cell at the National Council of Educational Research and Training (NCERT) to offer psychological guidance and support to students, parents and teachers. This service is available every day of the week from 8:00 AM to 8:00 PM. Students, parents and teachers can call this helpline to receive the necessary guidance and counseling.

This textbook aligns with the curriculum and syllabus developed by the State Council of Educational Research and Training, Maharashtra, Pune-30 and has been verified by them. The Coordination Committee, established under Government Resolution by GR No. Abhyas - 2116/(Pra.Kra.43/16) SD - 4 dated April 25, 2016, approved this textbook in its meeting held on April 13, 2026 for use from academic year 2026-27 onwards.

समग्र शक्ति

The World Around us

Part 1
Standard Four



Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune 411004.



Scan the adjacent QR code with your smartphone to access digital resources, including audio, visual and audio-visual materials, that complement this textbook.

First Edition : 2026

© **Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune- 411004.**

The Maharashtra State Bureau of Textbook Production and Curriculum Research reserves all rights relating to the book. No part of this book should be reproduced without the written permission of the Director, Maharashtra State Bureau of Textbook Production and Curriculum Research, 'Balbharati', Pune.

Core Committee

Smt. Shobhana Bhide
Smt. Niraja Dashaputre

Shri. Prakash Potdar
Smt. Nishchala Manyam

Dr Ankesh Shahu
Dr. Surendra Thakurdesai

Smt. Smithanjali Hegde
Smt. Premala Barate

Science Subject Committee

Dr. Deepak Chavan, Chairman	Dr. Poonam kadlag, Member
Dr. Prachi Chaudhary, Member	Smt. Shweta Thakur, Member
Smt. Mrunal Jadhav, Member	Shri. Rupesh Thakur, Member
Smt. Vrushali Phatak, Member	Smt. Sandhya Mohite, Member
Smt. Swarada Khedekar, Member	Smt. Niranka Mulye,
Smt. Shital Vanve, Member	(Invited Member)
Shri. Pramod Jadhav, Member	Smt. Pallavi Shirode,
Shri. Ashok Athare, Member	(Invited Member)
Shri. Aniket Motale, Member	Smt. Saraswati Suryavanshi
Shri. Jeevan Jare, Member	(Curriculum co-ordinator)
Dr. Dayashankar Vaidya,	Dr. Sandeep Nikam
Member	I/c Special Officer, Science
Shri. Tushar Sonaje, Member	
Dr. Sulabha Vidhate, Member	

Geography Subject Committee

Dr. Suresh Jog, Chairman	Smt. Jyoti Awghade, Member
Smt. Jyoti Tamhankar, Member	Dr. kerba Kamble, Member
Dr. Sachin Sakhre, Member	Dr. Hanamant Wagalgave,
Shri. Ajay Kale, Member	Member
Shri. Hanamant Jamdar, Member	Shri. Bhaidas Somwanshi,
Dr. Kunal Pawar, Member	Member
Smt. Shital Tambe, Member	Shri. Anand kasbe, Member
Dr. Smita Mamilwad, Member	Shri. Arun Jadhav
Shri. Vinodkumar Tembhurne,	(Curriculum co-ordinator)
Member	Dr. Maya Unde,
Shri. Sachhidanand Honna,	Special Officer, Geography
Member	(C.B.)

Quality Reviewer

Shri. Sunil Kalekar
Adv. Shrikant Dalvi
Prof. Madhavi Patwardhan

Coordinator

Dr. Sandeep Nikam
I/c Special Officer, Science

Dr. Maya Unde
Special Officer,
Geography (C.B.)

Production

Smt. Mitali Shitap
I/c Chief Production Officer
Shri. Sagar Bhapkar
Production Officer

Translation

Dr. Shrikant Karlekar
Dr. Poonam Kadlag

Scrutiny

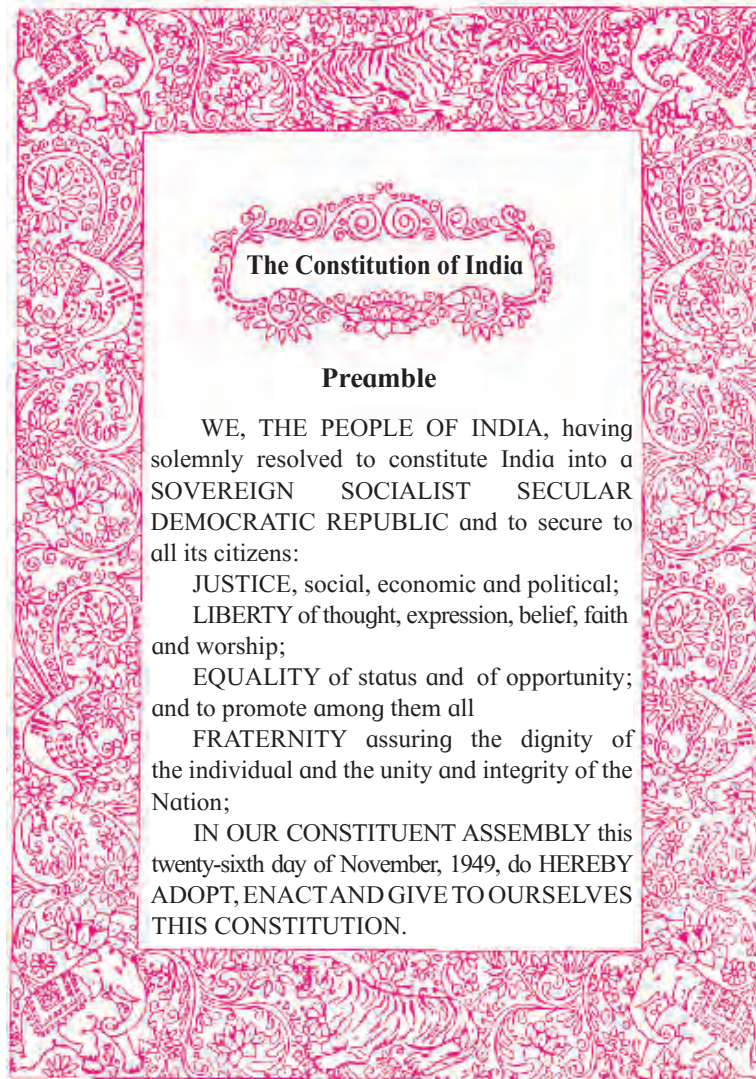
Dr. Amit Dhorde
Dr. Suchitra Pardeshi
Dr. Vinay Dhondge

Publisher

Shri. Hemant Babar
I/c Controller
Maharashtra State Textbook
Bureau, Prabhadevi,
Mumbai-400025

Cover and Illustration : Shri. Shubham Jinde
Shri. Omkar Markale,
Smt. Aarati Kulkarni,
Smt. Triveni Thorve

Cartographer : Shri. Balasaheb Bodkhe
Typesetting : DTP Section Textbook Bureau, Pune
Paper : 70 GSM Creamwove
Print Order :
Printer :



The Constitution of India

Chapter IV A

Fundamental Duties

ARTICLE 51A

Fundamental Duties – It shall be the duty of every citizen of India –

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities, to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- (k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years

NATIONAL ANTHEM

Jana-gana-mana-adhināyaka jaya hē
Bhārata-bhāgya-vidhātā,

Panjāba-Sindhu-Gujarāta-Marāthā
Drāvida-Utkala-Banga

Vindhya-Himāchala-Yamunā-Gangā
uchchala-jaladhi-taranga

Tava subha nāmē jāgē, tava subha āsisa māgē,
gāhē tava jaya-gāthā,

Jana-gana-mangala-dāyaka jaya hē
Bhārata-bhāgya-vidhātā,

Jaya hē, Jaya hē, Jaya hē,
Jaya jaya jaya, jaya hē.

PLEDGE

India is my country. All Indians
are my brothers and sisters.

I love my country, and I am proud
of its rich and varied heritage. I shall
always strive to be worthy of it.

I shall give my parents, teachers
and all elders respect, and treat
everyone with courtesy.

To my country and my people,
I pledge my devotion. In their
well-being and prosperity alone lies
my happiness.

राज्यगीत

जय जय महाराष्ट्र माझा, गर्जा महाराष्ट्र माझा
जय जय महाराष्ट्र माझा, गर्जा महाराष्ट्र माझा ॥१॥

भित्ती न आम्हा तुझी मुळी ही गडगडणाऱ्या नभा
अस्मानाच्या सुलतानीला जबाब देती जिभा
सह्याद्रीचा सिंह गर्जतो शिव शंभू राजा
दरी दरीतून नाद गुंजला महाराष्ट्र माझा
जय जय महाराष्ट्र माझा, गर्जा महाराष्ट्र माझा ॥१॥

काळ्या छातीवरी कोरली, अभिमानाची लेणी
पोलादी मनगटे खेळती, खेळ जीवघेणी
दारिद्र्याच्या उन्हात शिजला
निढळाच्या घामाने भिजला
देश गौरवासाठी झिजला
दिल्लीचे ही तख्त राखितो, महाराष्ट्र माझा
जय जय महाराष्ट्र माझा, गर्जा महाराष्ट्र माझा
जय जय महाराष्ट्र माझा ॥२॥

Preface

The curriculum has been prepared from the perspective of implementing the National Education Policy 2020. Maharashtra State Bureau of Textbook has published textbooks based on this state government approved curriculum framework, from the academic year 2026-27. Among these textbooks, we are happy to place the textbook 'The World Around Us' Part- 1 for standard three in your hands.

This textbook has been designed based on fundamental principle, ensuring that the journey of childhood education is joyful and playful, develop students observation skill, emphasise on activities and acquire the expected competencies for preparatory stage. Further more the textbook has been written taking into consideration all the instructions specified in the curriculum.

An attractive layout and illustrations always attract students. Therefore, this textbook includes pictures and maps as per the content requirements. Considering the students surrounding, various aspects of that surrounding, have been incorporated into the content of this textbook. This textbook is useful in enhancing students' observation skills.

Through this textbook, students will get acquainted about their natural surroundings, animals, world of plants and people's lifestyles. Students will get geographical and social information about the state in this textbook.

This textbook was scrutinized by selected teachers from all parts of the state, by some educationist and members of curriculum committee to make it as flawless and high quality as possible. Comments and suggestions have been duly considered by the Subject Committees while finalising the textbook.

The members of subject committees, quality reviewers and the artists have taken great efforts to prepare this textbook. The Maharashtra State Bureau of Textbook Production and Curriculum Research is thankful to all of them.

We hope that this book will receive a warm welcome from students, teachers and parents.

Pune.

Date: 19 April 2026

Indian Solar Year : Vaishakh Shuddha 2,
Shake 1948
Akshaya Tritiya


(Anuradha Oak)

Director

Maharashtra State Bureau of
Textbook Production
And Curriculum Research, Pune.

■ Our Surroundings Part 1 ■

Curriculum Goal: CG-1 Explores and engages with the natural and socio-cultural environment in their surroundings.

Sr no.	Pedagogical processes	Learning Outcome	Pg no.
1	C-1.1 Observes and identifies the natural (insects, plants, birds, animals, geographical features, sun, moon, planets, natural resources) and social (houses, relationships) components in their immediate environment	• States the general characteristics of insects.	95, 97, 98, 101, 102
		• States the general characteristics of birds.	95, 96, 97, 98, 102
		• States the general characteristics of plants.	32, 33, 34, 35, 36
		• States the general characteristics of animals.	95, 96, 97, 98, 100, 101, 102
		• States the correct order of the planets in the solar system.	22, 23, 24, 25
		• Explains the difference between planets and stars.	19, 20
		• Explains information regarding the components of the solar system through activities/games/role-play.	20, 21
		• Describe the geographical characteristics of own state.	117, 118
2	C-1.2 Describes relationships (including between humans and animals/nature) and traditions (art forms, celebrations, festivals) in the family and community.	• Discusses the importance of plants in the environment and in human life.	33, 38, 39, 40, 99, 100
		• Explains the importance of animals in the environment and in human life.	32, 97, 99
3	C-1.3 Asks questions and makes predictions about simple patterns (season change, food chain, phases of the moon, movement of stars and planets, shapes of trees, plants, leaves, and flowers, rituals, celebrations) observed in the immediate environment	• Explains the impact of changes in seasons on human life (regarding diet, clothing, etc.).	47, 48
		• Establishes a connection between Indian dietary habits, the seasons and one's constitution (Prakriti).	45, 46, 47
		• Describes the characteristics of various types of plants (trees, shrubs, herbs, creepers) based on observation.	32
		• Makes a collection of leaves, flowers and seeds.	42
		• Explains the uses of insects found in the surroundings.	32, 97, 99
		• Clarifies the concept of the food chain.	99, 100
		• Undertakes a project involving the collection of various leaves and flowers from the surroundings to identify patterns within them.	34, 35
		• Describes the types of plant roots (taproot and fibrous root) and their functions.	36
		• Explains the correlation between day and night and the Earth's rotation.	25, 26, 27
		• Clarifies the concept of the phases of the moon.	27, 28
		• Draws sketches of the changing shapes of the moon based on observations of the moon visible in the sky.	29
4	C-1.5 Uses local materials to create simple objects (family tree, envelopes, origami animals) on their home for display or use in classroom processes	• Describes the changes in the shape of the moon during the 'Krishna Paksha' (waning phase) and 'Shukla Paksha' (waxing phase).	28, 29, 30
		• Safely uses the necessary tools to create useful or decorative items using local resources.	103

Curriculum Goal: CG-2 Understands the interdependence in their environment through observation and experiences, developing the basis for appreciation of the idea of 'Vasudhaiva Kutumbakam'

5	C-2.1 Identifies natural and humanmade systems that support their lives (water supply, water cycle, river flow systems, seasons, life cycle of plants and animals, food, household items, transport, communication, electricity in the home)	• Identifies various sources of water and explains the importance of maintaining their cleanliness.	1, 2, 6
		• Suggests ways for water conservation.	4, 5, 6, 81
		• Explains the concept of water pollution.	7, 12, 13
		• Gathers information about traditional methods of water storage and explains their significance.	2, 3
		• Describes traditional methods of water purification.	6
		• Lists the various processes that food grains undergo on their journey from the farm to the kitchen.	52, 53, 54
		• Explains the relationship between the food habits and lifestyles of people in different regions.	54, 55, 56
		• Creates awareness regarding the importance of a nutritious diet.	55
		• Lists the food items prepared during various festivals celebrated in Maharashtra.	55, 56
		• Demonstrates a sense of equality while sharing food and water.	54
		• Explains the significance of the farmer's role in food production.	59, 60
		• Acquires information regarding modern agricultural technologies.	74
		• Cultivates medicinal plants in a backyard garden and takes their care	40, 42
		• Describes industries based on various processing techniques applied to medicinal plants, as well as agro-allied industries.	42
		• Names the major rivers and dams in the state.	118, 119
		• Shows names of the major rivers and dams of the state on a map.	118

		• Provides information regarding the lifespan of plants.	36, 37
		• Provides information regarding the lifespan of animals.	102
		• Names the internal organs of the human body.	15, 16, 17
		• Explains the importance of electricity usage and conservation.	146, 149, 150
		• Explains the diversity of modes of transport based on geographical conditions and utility.	134, 135, 136
		• State the benefits of modes of transport with reference to time.	136
		• Provides information regarding the various communication tools currently in use.	137, 138, 139
6	C-2.2 Describes the relationship between the natural environment and cultural practices in their immediate environment (nature of work, food, festivals, traditions)	• Studies the historical and cultural significance of musical instruments linked to various regional traditions.	127, 128
		• Gathers information regarding the major food items, crops, festivals and specialties of the state.	125, 126
Curriculum Goal: CG-3 Explains how to ensure the safety of self and others in different (normal as well as emergency) situations			
7	C-3.1 Describes the basic safety needs and protection (health and hygiene, food, water, shelter, precautions, awareness of emergency situations, abuse, and unsafe situations) of humans, birds, and animals	• Identifies the difference between safe and unsafe touch.	81, 82
		• Exercises caution when interacting with strangers.	81, 82
		• Takes the initiative to keep the surroundings clean.	80, 81, 87, 88, 90
		• Classifies waste.	87, 89, 90
		• Explains the benefits of waste segregation.	86, 87, 88, 89
		• Describes methods for recycling waste.	88, 89, 90
		• Describes various methods of cooking food.	60
		• Describes traditional methods of food preservation.	62
		• Explains the causes of food contamination.	63
		• Explains methods for making water safe for consumption.	6
		• Communicates the importance of safe water to others.	7
		• Suggests measures for water conservation.	4, 5, 6, 7, 81
		• Suggests ways to avoid the wastage of surrounding resources.	4, 5, 6, 7, 8, 81
		• Describes the food sources and shelters of birds and animals.	39, 64, 65, 96, 97
		• Constructs shelters for birds and animals using available materials.	65
		• Describes the various types of houses found in villages and cities.	67, 68
		• Gathers information about eco-friendly homes.	69
		• Shares information regarding basic safety measures for children with disabilities and elderly citizens within the home and the surrounding neighbourhood.	79, 80
		• Demonstrates sensitivity towards the trees and animals found in the local surroundings.	34, 37, 96
8	C-3.2 Discusses how to prepare for emergency situations (smoke, fire, small injuries, burns, electrical safety, unseasonal rains, fallen trees) based on discussions with family and community, or personal experiences	• Exercises caution while using electricity and raises awareness among others regarding electrical safety.	78
		• Explains the precautions to be taken while traveling.	138, 139, 140
		• Discusses the safety measures to be observed during natural disasters.	72, 73, 74, 75, 76
9	C-3.3 Develops simple labels and slogans, and participates in roleplay on safety and protection in the local environment to be displayed/done in school and locality	• Creates slogans related to cleanliness and explains their meaning.	91
		• Performs short plays utilizing slogans and symbols related to disaster management.	77, 78, 79, 85
		• Creates various drawings, charts and slogans for the protection and conservation of the environment.	8, 14, 38, 40, 80, 150
Curriculum Goal: CG-4 Develops sensitivity towards social and natural environment.			
10	C-4.1 Observes and describes diversity among plants, and birds and animals in their immediate environment (shape, sounds, food habits, growth, habitat)	• Identifies the dietary habits of various animals and birds and explains their respective roles within the local surrounding or environment.	99, 100
		• Explains the significance of flowers and fruits in the reproductive processes of plants.	32, 34
		• Classifies plants into categories such as autotrophs, heterotrophs and insectivorous plants.	32, 33
		• Describes the different modes of reproduction in animals and classifies them accordingly.	98
		• Interprets the collective behaviour of animals in the environment through observation.	100
		• Observes and notes the behaviour of animals and birds during sunrise and sunset.	100
		• Describes the various stages in the life cycle of insects.	98
11	C-4.2 Observes and describes cultural diversity in their immediate environment (food, clothing, games, different seasons, festivals related to harvest and sowing)	• Describes the diversity in clothing and food habits found across different regions of the state.	47, 48

12	C-4.3 Describes usage of natural resources in their immediate environment	• Identifies the different types of soil present in the surrounding environment and collects samples of the same.	9, 10
		• Identifies the various types of soil found in the local area.	9
		• Explains the consequences of the pollution of local natural resources.	7, 10, 81
		• Explains the differences between houses found in urban and rural areas.	67, 68
		• Takes care of the shelters of birds and animals found in the immediate surroundings.	66
		• Constructs small shelters for birds and animals using natural resources.	65, 66
		• Identifies and compiles a list of traditional and modern materials used for the construction of houses.	39, 67
13	C-4.4 Demonstrates how natural resources can be shared, maintained, and conserved (trees, use of rainwater, benefits of millets)	• Explains measures for the conservation of tree in the local area.	37, 38, 40
		• Gathers information on various methods for rainwater harvesting.	7
		• Explains the necessity of soil conservation.	8, 10
14	C-4.5 Identifies needs of plants, birds, and animals, and how they can be supported (water, soil, food, care)	• Describes the relationship between the body coloration of animals and birds and their surrounding environment.	101, 102
		• Practices water recycling.	5, 6
		• Takes a pledge to conserve water.	14
		• Explains the benefits of water recycling.	5, 6
15	C-4.7 Learns about basic social and behavioural norms, values, and dispositions that benefit our social and natural environments and that help our society function smoothly (using dustbins, standing in queues, conserving water, using public transportation, keeping one’s environment clean, always helping others in need regardless of background)	• Gives information regarding facilities in urban and rural areas.	133, 134
Curriculum Goal: CG-5 Develops the ability to read and interpret simple maps			
16	C-5.1 Explains a line drawing of their school, village, and ward	• Depicts the boundaries of the home, school, or village on a map using illustrations and symbols.	107, 108, 113
		• Explains the meaning of symbols and signs used in maps.	106, 107, 108, 113
		• Creates a map of the village, school, or locality using various symbols and signs.	107, 108, 113
17	C-5.2 Draws a sketch of their school, village, and ward using symbols and directions	• Creates a map showing outlines/boundaries of the school, village and locality.	107, 108, 113
18	C-5.3 Reads simple maps of city, state, and country to identify natural and humanmade features (well, lake, post office, school, hospital) with reference to symbols and directions	• Shows the location of districts, administrative divisions, its capital and sub-capital and other important cities/places in the state of Maharashtra.	113, 115, 132
		• Locates on a map the state’s major crop, food products, historical places, tourist destinations, industries, transportation routes, etc.	113, 120, 123, 124, 125, 126, 127, 129
Curriculum Goal: CG-6 Uses data and information from various sources to investigate questions related to their immediate environment.			
19	C-6.1 Performs simple inquiry related to specific questions independently or in groups	• a) Expresses personal opinions on thought-provoking questions. b) Participates in group discussions regarding thought-provoking questions. c) Expresses or Provides written answers to open-ended questions. d) Formulates questions that lead to the solution when attempting to solve riddles or puzzles. e) Frames questions designed to facilitate problem-solving. f) Asks questions related to various events, objects and processes observed in the immediate surroundings. g) Seeks answers to questions by conducting observations. h) Gathers additional information regarding various concepts through observation.	Included and Integrated into all lessons.
20	C-6.2 Presents observations and findings through different creative modes (drawing, diagram, poem, play, skit, oral and written expression)	• a) Draws illustrations of living organisms observing them in the local environment. b) Prepares drawings and diagrams based on various concepts. c) Presents various concepts using illustrations and diagrams. d) Presents various concepts through the medium of plays, games and poetry. e) Communicates various concepts through dialogue, as well as through oral or written mediums. f) Presents observations of various activities and the resulting conclusions using a variety of media.	
Curriculum Goal: CG-7 Gains foundational familiarity with basic concepts and methods from the natural sciences (life sciences, physical sciences, and earth and space sciences) and engineering.			
21	C-7.1 Gains familiarity with using the scientific method in investigations, as well as familiarity with other crosscutting concepts such as energy, matter, and systems that apply across the domains of science and engineering.	• Explains the concept of energy.	143
		• Explains various forms of energy (solar energy, wind energy).	143, 144
		• Identifies the presence of various machines in daily life.	146
		• Identifies electrical appliances used in daily life.	146
22	C-7.2 Gains familiarity with disciplinary core ideas in the natural sciences, as well as in engineering, technology, and applications of science, which reflect the content that will be learned across subject areas in later Grades.	• State examples of magnets in daily life.	145
		• Identifies the transmission of light.	147, 148
		• Conducts experiments to demonstrate the process of shadow formation.	148
		• Explains the effects of heat on matter.	60

■ Understanding the Textbook..... ■

- The structure of all the lessons in the textbook are based on the curriculum goals, learning competencies and learning outcomes.
- The textbook ‘The world Around Us – Part 1’ is structured to help students to connect the basic concepts of subjects like Science and Geography through learning experiences based on their surrounding. Detail information about the state is given in lesson My Maharashtra. The objective of this textbook is to develop environmental sensitivity among children, enhance their skills of working in groups and foster a positive attitude.
- To develop the competencies included under the integrated curriculum goals (CG 6 and CG 7), activities and tasks should be planned consciously.
- The textbook ‘The world Around Us – Part 1’ emphasizes conceptual understanding, logical thinking, creativity and the values and attitudes required for developmental levels.
- As per the National Education Policy 2020, integrated education based on art, sports, toys, and technology should be included in daily teaching.
- Introduced Indian Knowledge Systems (IKS) according to the content of the textbook.
- The planning of activities for learning experiences should be done according to levels such as awareness, sensitivity, creativity, rubric-based assessment. It should also be verified at which level the student is.
- The textbook includes various activities to provide an initial introduction to vocational education. These activities should be done by the students.
- The concepts in the textbook should be explained using the observation of surroundings and picture, songs, games, conversations, activities, projects and practicles with available local material.
- The activities in the textbook should be conducted individually, in pairs, or in groups as required, in order to promote peer learning and collaborative learning.
- The process should facilitate understanding and application of the basic concepts of Science and Geography, as well as develop environmental sensitivity and awareness.
- This textbook is not meant to be taught only by reading and explaining it in the classroom. Rather than students merely solving questions, it aims to enable them to express what they have learned in their own words and share it with others, as well as to frame their own questions. Such higher-order learning opportunities have been considered in the textbook and should be further expanded.
- The instructions given in the textbook are of a guiding nature; therefore, necessary modifications should be made in the teaching-learning process according to the local surrounding context, dialect and examples from the surroundings.
- The answers to the questions given in the textbook should be written in the notebook, checked and used for assessment.
- Conduct the teaching learning process for students with special needs, sign language  as well as other supplementary pedagogical methods should be used. Students with special need shuld be given the opportunity to express themselves in whatever way is possible for them.

INDEX

Sr. No.	Lesson's Name	Page No.
1	Treasure of Nature	1
2	Our Body	15
3	Planets and Stars	19
4	Our Green Companions	32
5	The Fun of Changing Seasons	43
6	Food and Shelter	52
7	Awareness is Safety	72
8	My Clean Surroundings	86
9	In the Wonderful World of Animals	94
10	Let's Learn the Map	106
11	My Maharashtra	115
12	Public Life, Transport and Communication	133
13	Friendship with Energy	143

Note : Maps in textbooks have been prepared only for educational purposes. They should not be considered as a standard for any geographical or political use. While preparing the maps maximum level of accuracy is maintained. However, any error that may remain could be due technical limitations.



Treasure of Nature



Let's remember



Where does water on the Earth come from?



Where does rainwater go?



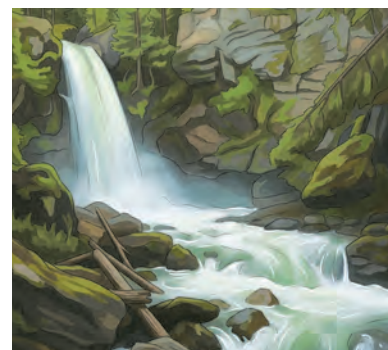
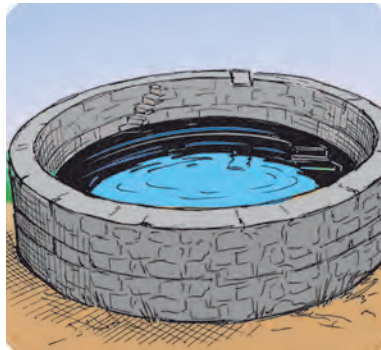
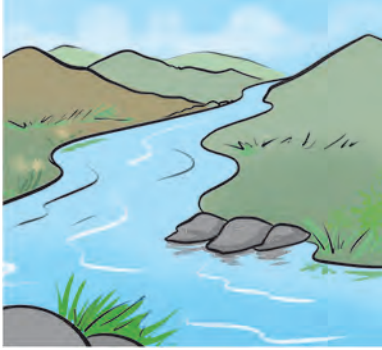
Where do we get water for use at home from?

From the time you wake up in the morning until you go to bed at night, note the various uses of water in your home in the box given below.



Let's Understand

The places from where we get water are called **sources of water**.



Let's Understand

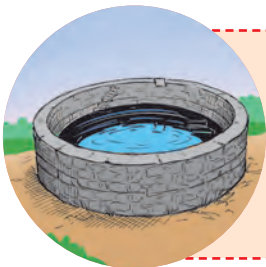
Water is very important for us, for plants, and for animals. Therefore, it is necessary to use water carefully and store it.

Water is stored in large quantities to supply potable water, for farming, and for animals.

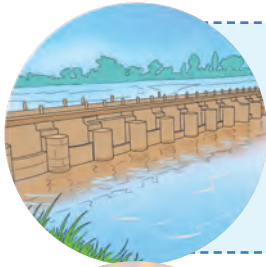
Storage of Water in Large Quantities



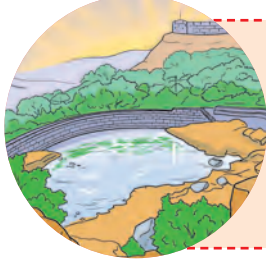
Lake - Water collected in a low-lying areas of land is given definite shape by constructing sturdy structures around it is called a lake. A lake is also known by other names such as pushkarni, vapi, and vapika.



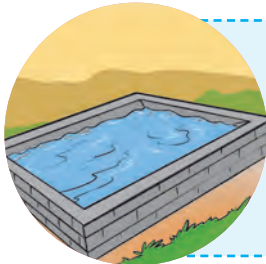
Well - Some rainwater seeps into the ground. We get the underground water through well. Wells are usually circular in shape. Aad, barav, and budki are some of the types of wells.



Bunds - Bunds are built up of stones or soil to stop the flowing water of a river. Bunds are also built to stop the flow of a stream or to store water in the fields.



Pond and tank on Forts - In earlier times, stone pond and tanks were dug on forts for the people living there. The water stored in them was used throughout the year.



Old tank (haud) - In earlier times, Old tank (haud) was used to store water. In some places, such Old tanks (haud) are still in use today. The water stored in them is used for drinking, farming and construction.



Do You Know?

There is a historical 'Baramotichi Vihar' at Limb in Satara district. This is the best Shivkal architectural example. Stone construction, many steps and a huge palace like structure are the characteristics of this well. Many tourists often visit this well.



Observe

Pictures of various water storage containers are shown below. Identify which of these containers are used in your home to store water. Write the name of each container below the picture.

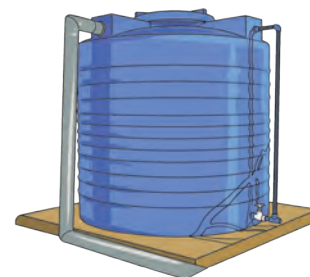












Instruction for teachers - Give pictorial information of various methods of water storage.



Observe

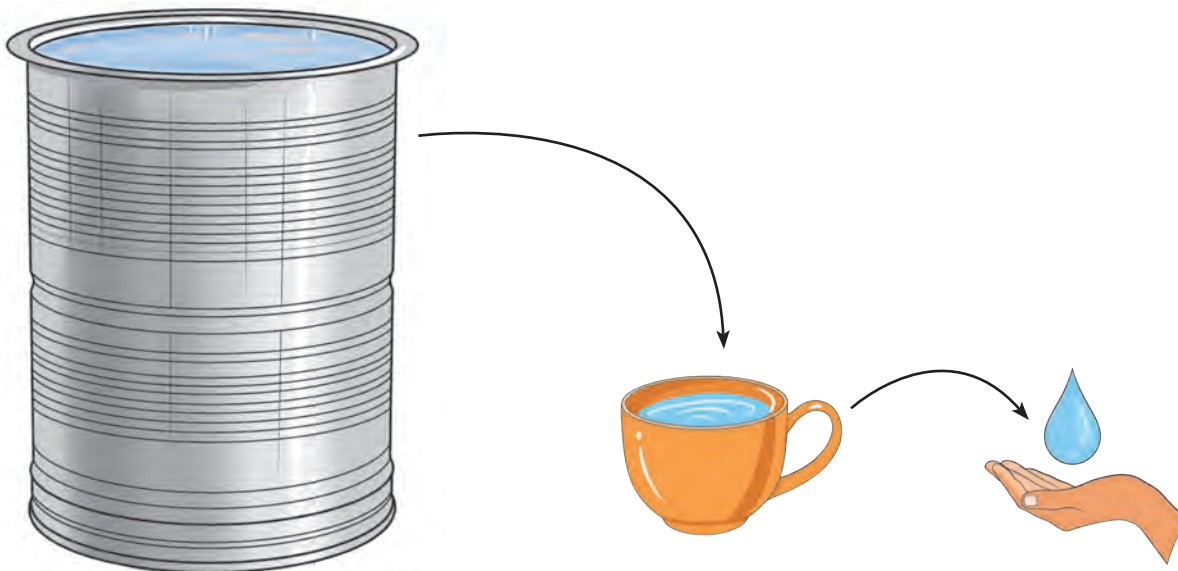


- What did you realize after observing the above pictures?
- What will you do to prevent the wastage of water?

Let's Understand

Approximately 71% portion of the Earth's surface is covered by water. Most of this water is contained in oceans and seas. Some water exists in a frozen state, while some is found underground. Very small amount of water is potable.

Imagine all of Earth's water fits into a single barrel. From that total, fresh water would only fill a cup, and the available potable water from sources like rivers and wells would be just a single drop.



**Total Water Available
on Earth**
(Water from oceans, seas,
groundwater, and surface
water.)

Fresh Water
(Water in a
frozen state
groundwater, and
surface water.)

Potable Water
(Surface water
sources.)

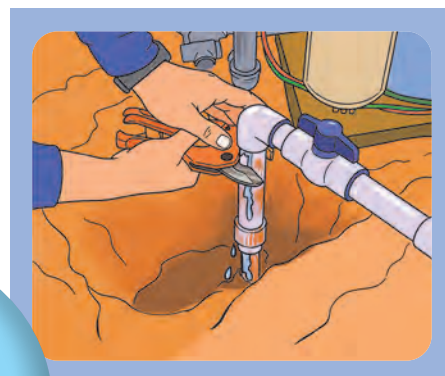
From this, we realize that very little water is available for drinking. Therefore, we must use this water appropriately without wasting it.

‘Water is precious.’ Everyone should be aware of its proper use. We must not waste even a single drop of water.



Try This

Make a list of various activities inside or outside your home that lead to water wastage. Additionally, discuss with your elders and friends how we can avoid the wastage of water, write it in your notebook.



Ways to Save Water



There is no substitute for water in daily life. Water is very important for our health. No living being can survive without water; therefore, water is called ‘**Life**’.



Always remember

- * Use water sparingly.
- * Conserve water wherever possible.
- * Recycle water whenever possible.
- * Water stored for drinking, general use at home does not go 'stale'.



|| Let's Understand

Used water should not be wasted; it should be reused. For example, water from washing vegetables, fruits, water left after drinking can be used for plants, water left after washing clothes can be used to clean toilets. This is called **reuse** of water. Water that does not endanger our health in any way when we drink it is called **safe drinking water or potable water**. Such water is clean and safe for drinking. Drinking such water prevents diseases like stomach ache and diarrhea. Our body remains healthy.

Write correct or incorrect.

‣ The stored drinking water on previous day has become stale, so it is poured out and the container is refilled.

‣ To get drinking water, it is necessary to make the water safe.



Do you know?

Many years ago, people used natural and traditional methods to purify drinking water. They did not know large filters or chemicals like today. They used neem, tulsi, coriander leaves, amla, jamun, nirmali seeds to purify water.

|| Let's Understand

Methods to Make Water Safe

‣ **Filtration** - Water should be filtered using a cloth or a strainer. Because of this soil particles and trash gets separate.



‣ **Settling** - Swirling alum in water causes soil particles and other debris to settle at the bottom, making the water clear.



‣ **Boiling** - Boiling water for 10 to 15 minutes kills the germs present in it.



‣ **Disinfection** - Bleaching powder or chlorine tablets/drops are added to kill germs in the water.



Think

Would you use river water as it is for drinking? Give reason.

Soapy water, plastic, fertilizers, Plaster of Paris (POP) idols, chemicals, etc., contaminate water. This is called water pollution. Such factors are harmful to the health of living beings.

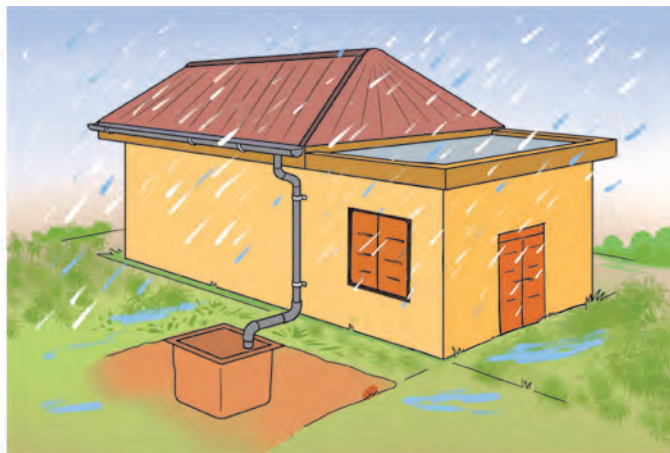


Do You Know?

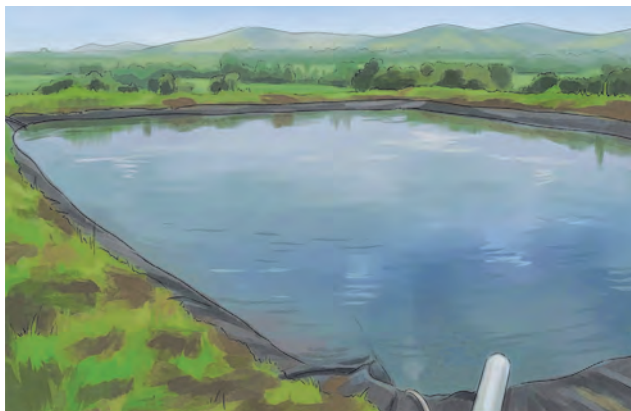
The Government of India launched the 'Namami Gange' project in June 2014 to stop the pollution of the Ganga River. This is helping clean the Ganga water. In this project, activities like purification of waste water, cleaning riverbanks, planting trees and protecting and conserving aquatic animals in the Ganga river are carried out.

Let's Understand.

Water is an important natural resource. We receive rain water during the monsoon season. To fulfill our water needs throughout the year, rainwater is stored. In some places, farm ponds are dug to ensure crops do not face water shortage. To increase groundwater levels, trenches are dug on hill slopes. These methods result in **rain water conservation**.



Rainwater harvesting



Farm pond



Trenches on hill slope



Observe

In which of the following pictures does the water NOT flow away? Why?



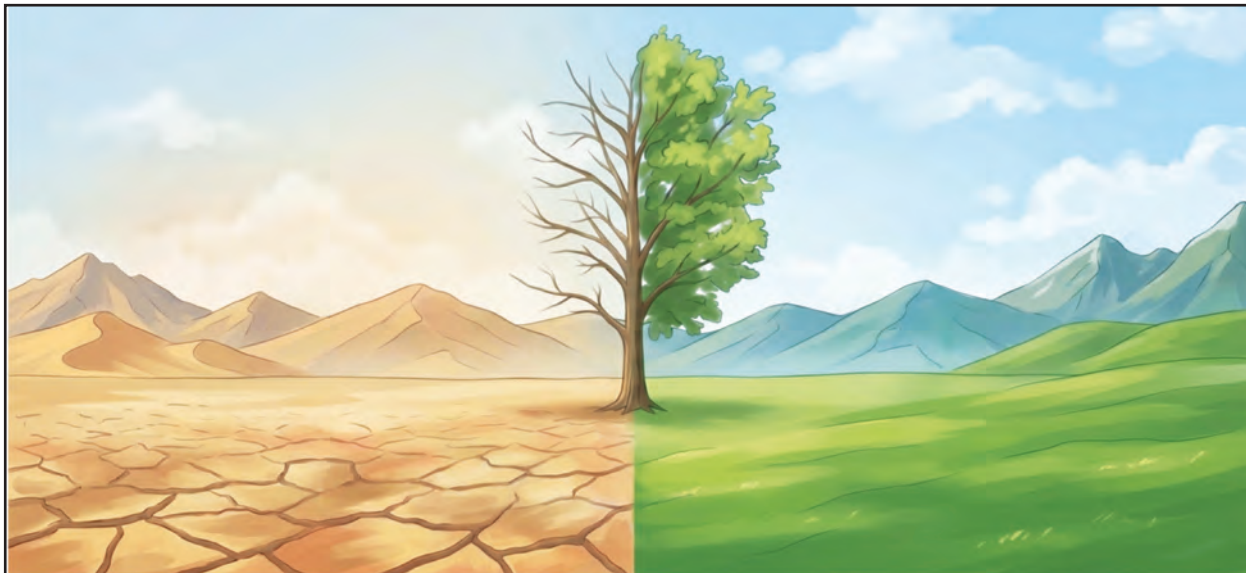
Rainwater flows away over rocks and pebbles, but it seeps into the soil, as soil has the capacity to hold water. This is useful for water conservation. Just like water, soil is an important natural resource.

Let's understand.

It takes many years for soil to form. The top layer of soil is fertile. It is important to protect it. Soil erosion is reduced when plants, grass, trees, and shrubs are grown on the land. This process helps in the conservation of soil.



Think



A Barren and Destructive Future

A Lush Green and Prosperous Future

► Why is soil conservation necessary?



Let's Recall

Name the objects in your house or surroundings that are made from soil.

|| Let's Understand

Various types of soils are found in Maharashtra. For example: alluvial soil, black soil (regur soil), red soil, laterite soil (soil from laterite rock), mountainous soil, marshy soil, peat soil, shadu soil (clay), etc.

Various types of soils are found in our surroundings.

(1) Sandy Soil -

- This soil contains a high proportion of sand.
- Water drains through this soil very quickly, causing it to dry out fast.



(2) Clayey Soil -

- This soil is very sticky and soft.
- Its particles are very small and tightly packed together.
- This soil easily retains water.
- It is used for growing crops and making various articles.



(3) Loamy Soil -

- Loamy soil is formed from a mixture of sandy soil, clayey soil, and silt.
- This soil retains water, which helps land to remain moist.
- It is useful for the growth of crops.





Try This

Collect samples of different types of soil from your surroundings. Wet the soil and make balls out of them. Observe them and complete the table below.

Sr. No.	From where soil is collected?	Colour of the Soil	Characteristics of the Soil	Can soil balls be made? (Yes/No)
1.				
2.				
3.				



Observe



The excessive use of chemical fertilizers, pesticides, as well as the mixing of toxic substances and waste from factories into the soil, reduces its fertility and makes it contaminated. This is called **soil pollution**. We must take care to ensure that such substances do not mix with the soil. In the fields, organic fertilizers should be used instead of chemical fertilizers. Organic fertilizer is prepared from animal waste and decomposed dry leaves.

Instruction for Teachers – Provide additional information of organic fertilizers and chemical fertilizers to students.



We have studied this



- Water is important for all living beings; therefore, water should be used carefully.
- The water we get comes from different places such as rivers, wells, lakes, and dams. These places are called sources of water.
- Water is stored in large quantities in lakes, wells, check bunds, tanks on forts, and old haud.
- Every drop of water is important. So, it is necessary to reuse water.
- Filtering, settling, boiling, and disinfection are methods used to make water safe.
- The process of storing rainwater to increase the groundwater level is called rainwater harvesting.
- It takes many years for soil to form; therefore, its conservation is essential.
- Sandy soil, clayey soil, and loamy soil are various types of soil.
- The excessive use of chemical fertilizers, pesticides, as well as the mixing of toxic substances and waste from factories into the soil, reduces its fertility. This is called soil pollution.



Let's Revise

(A) Select and write the sources of water found in your area from the list below:

Lake, Sea, River, Dam, Well, Aad, Hand-pump, Barav, Stream, Spring, Waterfall, Reservoir.

(B) Guess who I am.

- (1) I am sticky and soft. I hold water easily.
- (2) I am like sand. I cannot hold water.
- (3) I am made up of sandy soil, clay soil and silt.

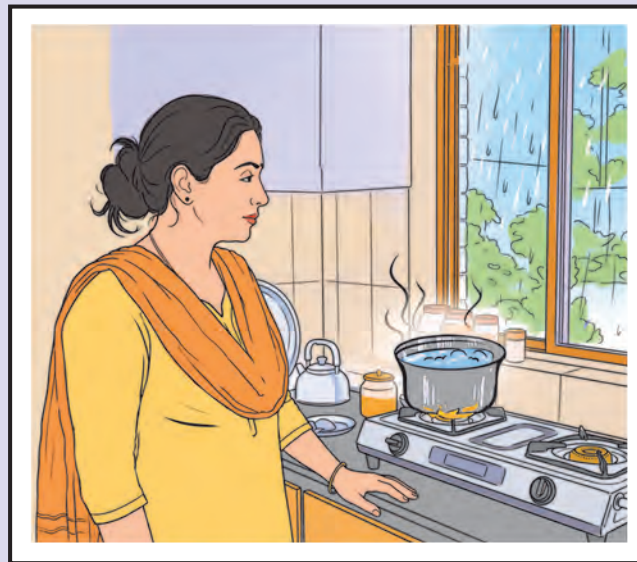
(C) Answer the following questions.

- (1) Write the uses of soil.
- (2) Write the causes of soil pollution.
- (3) What is meant by safe (potable) water?
- (4) What are the causes of water pollution?

(D) Find the containers used to store water at home in the word puzzle given below. Draw a box around those words.

c	b	u	c	k	e	t
l	m	h	i	a	a	a
a	e	k	q	x	t	n
y	t	l	e	d	h	k
p	a	d	r	r	e	z
o	l	e	s	u	n	s
t	p	f	t	m	p	f
p	o	t	u	y	o	g
h	t	g	v	h	t	i

(E) Observe the picture given below. Answer the following questions based on it.



- (1) Which method of water purification is being used in the picture?
- (2) For how long should water be boiled to make it safe?
- (3) Why does water become safe to drink after boiling?
- (4) What other ways can be used to purify water?

(F) Choose the correct option from the given alternatives for the following questions and write the answers.

(1) Which of the following is NOT a source of water?

- (a) River (b) Forest (c) Lake (d) Well

(2) What causes soil pollution?

- (a) Planting trees in the soil
- (b) Throwing waste and plastic in the soil
- (c) Saving water
- (d) Washing cattle in the soil

(3) What is the most important use of water?

- (a) For mopping the floor
- (b) For playing
- (c) For drinking
- (d) For washing vehicles

(G) Write what you will do.

- (1) To ensure that water on the roof is not wasted...
- (2) To prevent water pollution...
- (3) To prevent soil pollution...
- (4) While walking on the road you see a water tap left running...
- (5) Due to the rain, muddy water is coming out of the tap at home...

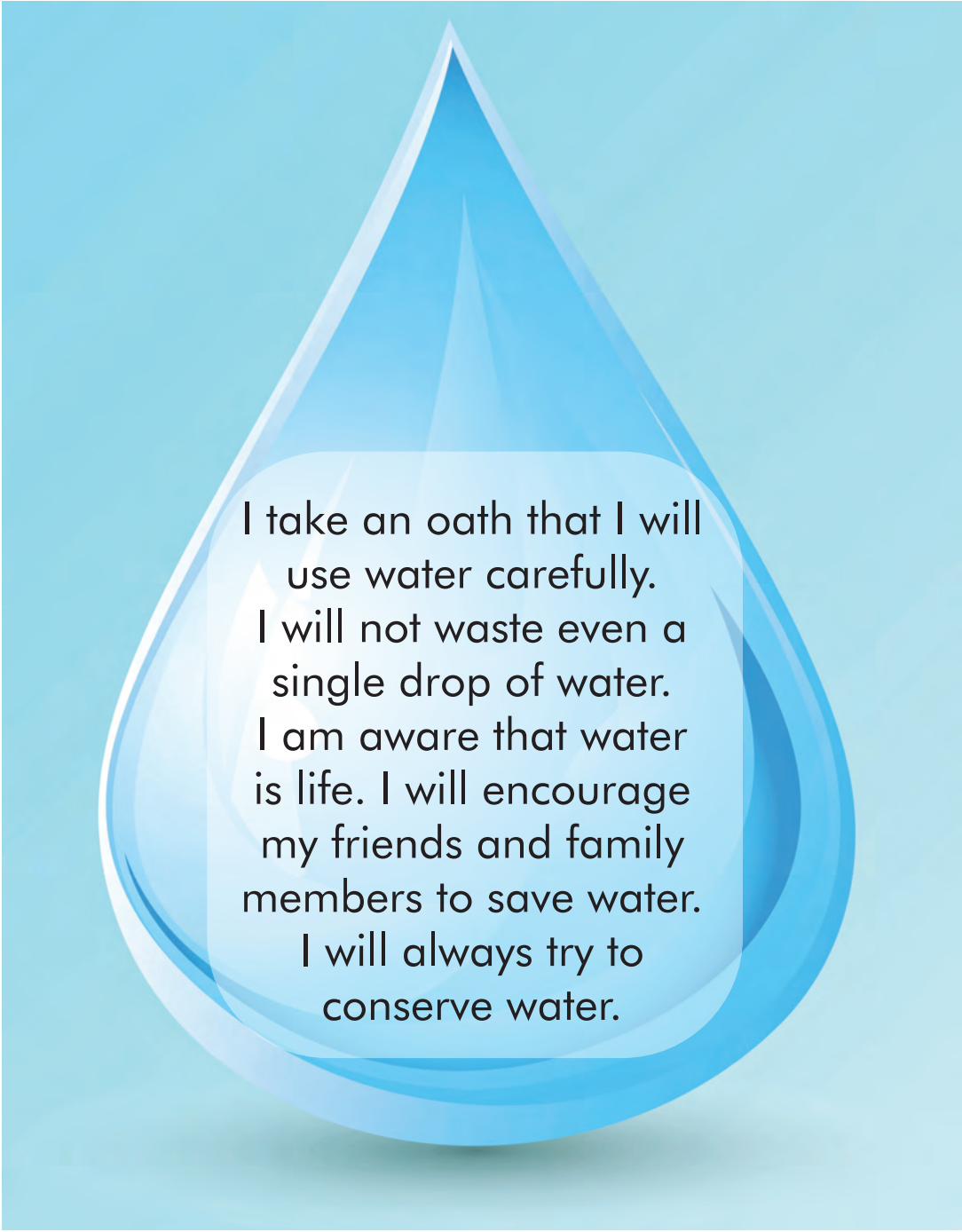
(H) Note down how much water is used in your house for the following actions in one day. Compare your notes with those of your friends.

Sr. No.	Action	Approximate Amount (Bucket/Pot)
1	For Bathing	
2	For Washing Clothes	
3	For Washing Dishes	
4	For Drinking	

Activity

- * Make models of various objects or animals using soil.
- * Gather information about methods for harvesting rainwater from rooftops and prepare a poster.

'Every Drop of Water is Important'



I take an oath that I will
use water carefully.
I will not waste even a
single drop of water.
I am aware that water
is life. I will encourage
my friends and family
members to save water.
I will always try to
conserve water.

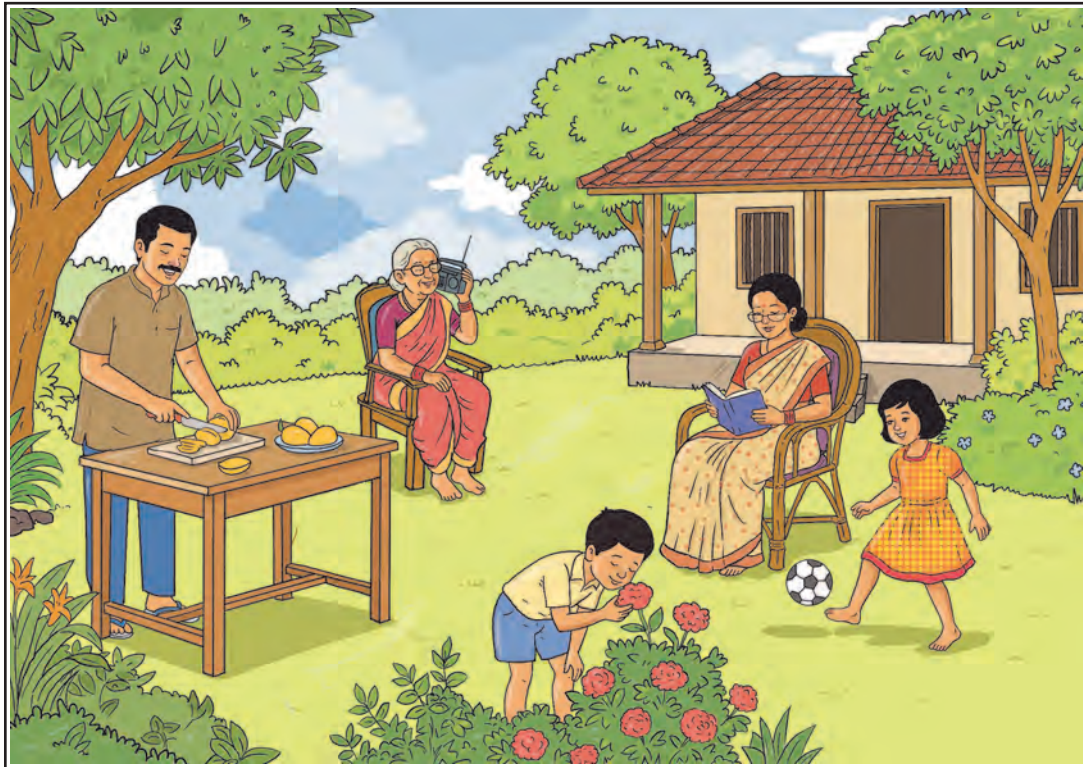
Instruction for Teachers - Conduct this pledge in class with the participation of students.

2 Our Body



Observe

Which major body parts are being used while performing the activities in the picture below?



We can see our body parts like hand and legs. The organs located outside of the body are called **outer organs**. Outer organs are also called as **external organs**.

To pick up objects, walk, run, move, and perform many other daily tasks, we use our hands and legs. Therefore, hands and legs are called **motor organs (Karmendriya)**.

The organs with the help of which we become aware of our surroundings are called **sensory organs**. Eyes, ears, nose, and skin are our sensory organs. They are also external organs. The tongue is also a sensory organ.

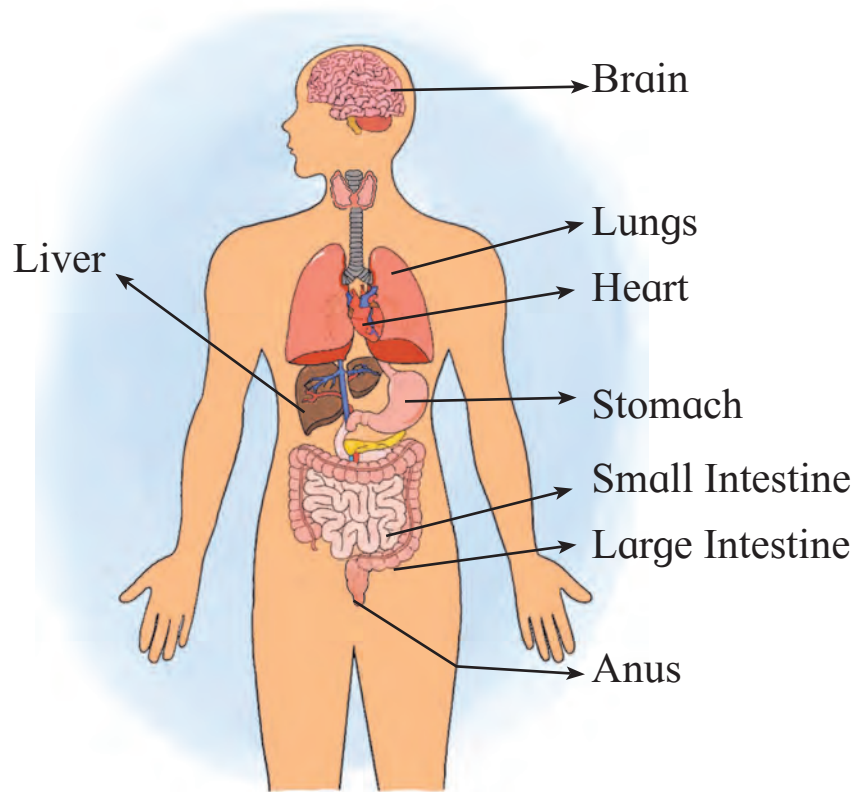


Think

Is the tongue an external organ?

|| Let's Understand.

Organs that are inside the body and cannot be seen from the outside are called **internal organs**.



- (1) **Brain:** The brain is located inside our skull. The skull protects the brain. Information received from our sensory organs is processed and stored in the brain. This information is used from time to time. We experience emotions like anger, joy and sorrow through the brain.
- (2) **Heart:** The heart is located slightly to the left of the centre of the chest. It is about the size of our closed fist. It works like a pump. The heart keeps circulating blood through the blood vessels throughout the body.
- (3) **Lungs:** There are two lungs in our chest. The lungs supply oxygen to the entire body. The functions of the heart and lungs are dependent on each other. Oxygen from the air is required to purify the blood which is supplied by the lungs. Both these organs are located in the ribcage of the chest. The thin, flat bones of the cage are called ribs.



- (4) **Stomach:** The long tube that carries food eaten through the mouth is called the oesophagus. This food is delivered to the stomach through the oesophagus. The stomach is a bag-like internal organ where food is churned. The liver helps in the digestion of this food.
- (5) **Small Intestine:** There is a long tube connected to the stomach called the small intestine. In this, the digestion of food is completed. Nutrients and water from the food are absorbed in the blood.
- (6) **Large Intestine:** The large intestine is a broad tube connected to the small intestine. Water from undigested food is absorbed in the large intestine. The last part of the large intestine is called the Rectum. Waste products (feces) produced during digestion are stored here for a while and later expelled through the Anus.



Can you Tell?

Name the internal organs in our body other than the ones studied above.



We have studied this



- Organs that are inside the body and cannot be seen from the outside are called internal organs. Internal organs perform different functions.
- The brain, heart, lungs, liver, stomach, oesophagus, small intestine, large intestine, rectum, and anus are our internal organs.



Let's Revise

(A) Match the following.

- | | |
|---------------------|---|
| (1) Brain | (a) Churning food |
| (2) Heart | (b) Storing information |
| (3) Stomach | (c) Absorption of nutrients |
| (4) Small Intestine | (d) Keeping blood circulating throughout the body |

(B) Answer the following questions in one sentence.

- (1) What are external organs?
- (2) What is the function of the heart?

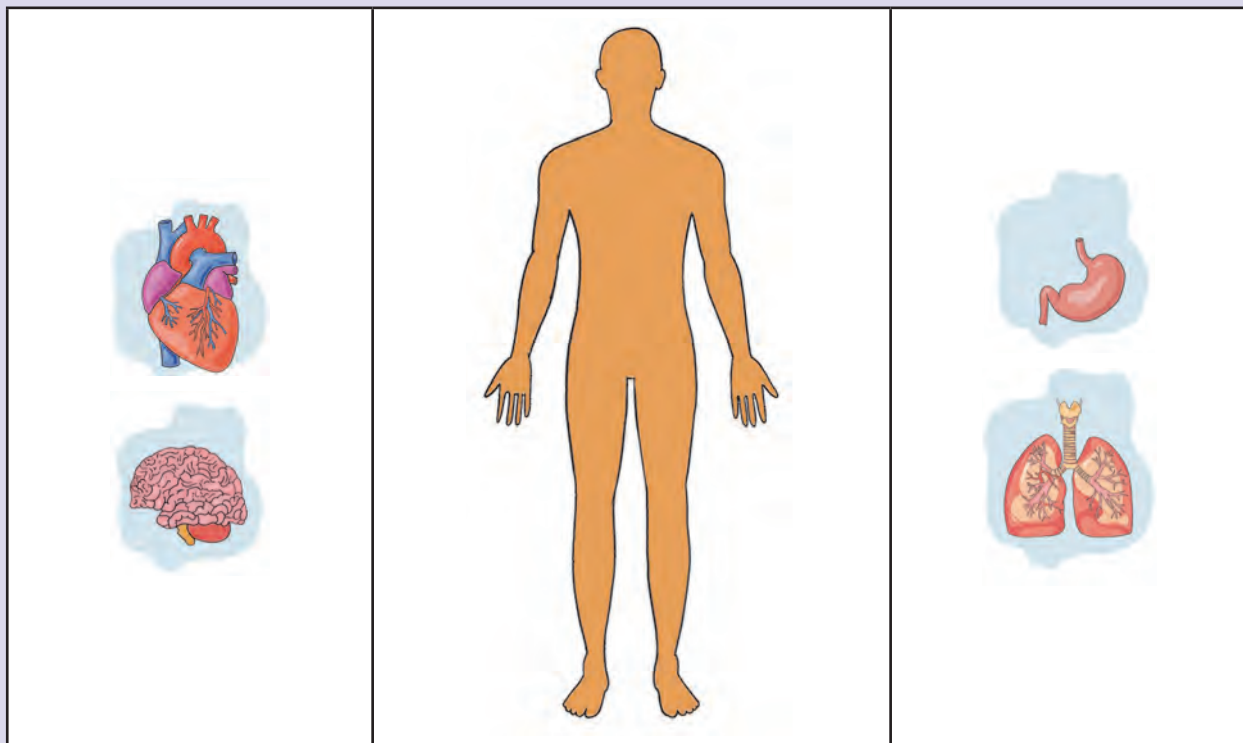
(C) Which is the odd word out in the group? Why?

- (1) Nose, Ear, Eyes, Lungs
- (2) Heart, Lungs, Liver, Eyes
- (3) Hand, Leg, Eyes, Stomach
- (4) Ear, Oesophagus, Small Intestine, Large Intestine

(D) Classify the following into External and Internal Organs.

Nose, Brain, Eyes, Stomach, Tongue, Heart, Ear, Large Intestine, Skin, Small Intestine, Liver, Rectum, Oesophagus, Anus

(E) Using lines, connect the given organs to their correct position in the human body diagram.



Activity

Create a cardboard or clay model showing the external and internal organs of the human body..



Planets And Stars



Observe



Observe the picture and write the answers to the questions.

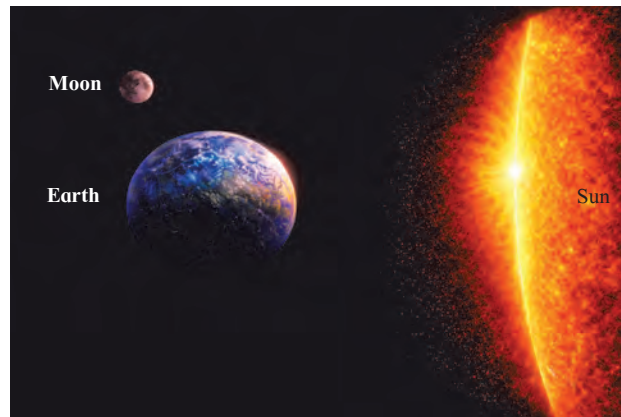
- What is the teacher showing the children in the picture?
- Have you ever observed the sky like this?
- Why is sky observation always done in the evening or at night? Understand this with the help of teachers.
- Where the teacher and students are standing in the picture?
- What color does the sky look like at night?



Let's understand

- The small objects that sparkle in the sky are called 'stars'. The objects that do not sparkle are called 'Planets'.

- Planets do not have their own light. Stars are self-luminous.
- The Sun is a star, while our Earth is a planet. The Moon, which revolves around the Earth, is a satellite of the Earth.



Let's understand

The Earth is a planet that revolves around the Sun. There are seven other planets that revolve around the Sun and rotate around themselves. There are many such objects in the solar system. Some of them revolve around specific planets, they are called satellites. Apart from our Solar system, there are many such planetary systems in space.



Observe





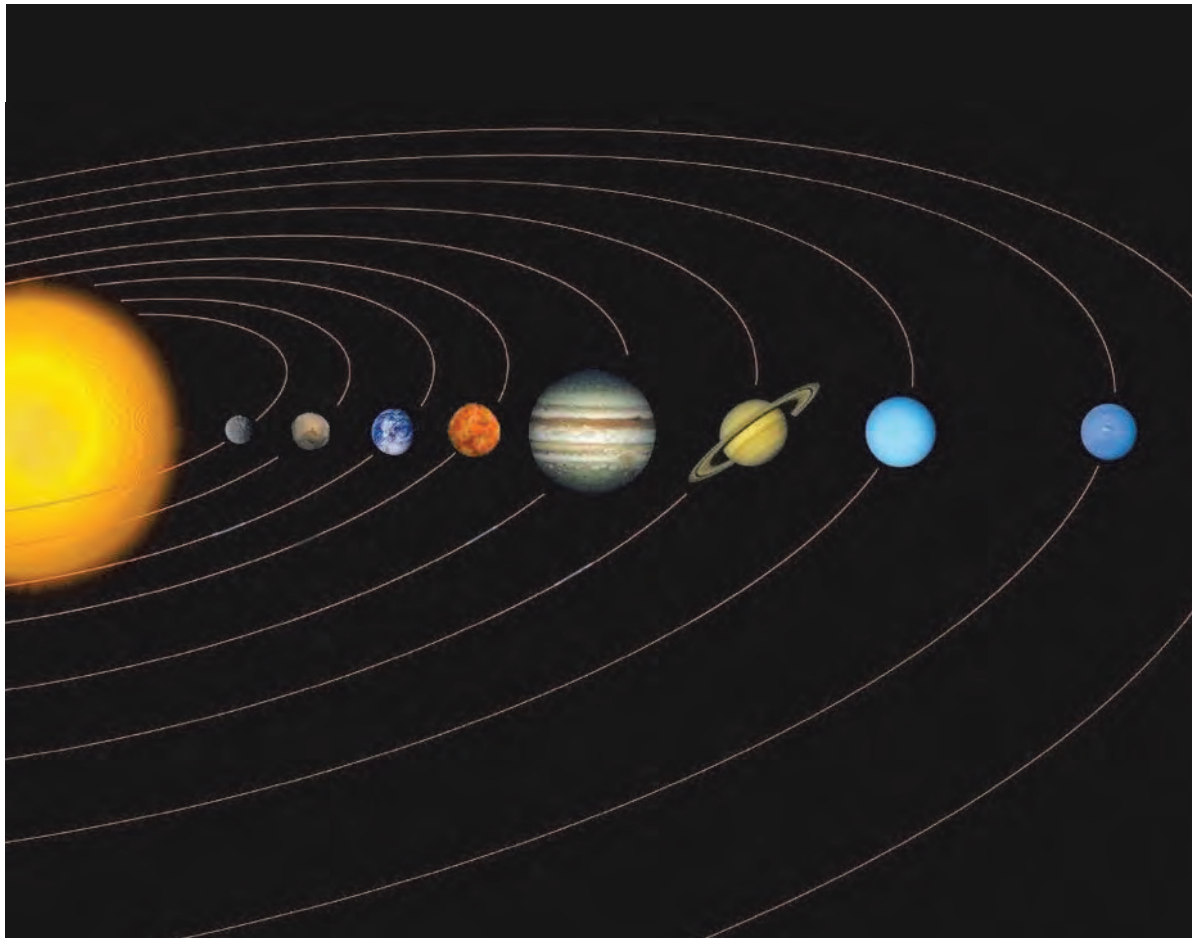
Let's understand

The teacher came to the class and said to the children, 'Children, let's play a fun game.' The teacher took the children to the playground. Eight ellipses were made there. Rajesh was asked to stand in the centre, as shown in the picture. Around him, eight children were asked to stand on eight different ellipses. such as Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Each one was asked to circle around Rajesh, while moving around themselves.

The teacher told the rest of the children, 'Just as the children are revolving around Rajesh, the planets revolve around the sun in the sky. We can see them with the help of a telescope. Each planet revolves around the sun in an elliptical orbit. Therefore, during one revolution of the planet, its distance from the sun keeps changing. Now let's understand the solar system.'



Observe





Let's understand

Our solar system is made up of a total of eight planets, including the Earth, satellites, asteroids, dwarf planets, comets, and the Sun. Let's learn about the components of the solar system.

Planets:

There are a total of eight planets in the solar system. Their sequence, based on distance from the Sun, is as follows. (AU: Astronomical Unit)

Picture	Name of the planet	Characteristics
	Mercury	• The closest planet to the Sun. • The axis is inclined by 2.0° (degrees). • Distance from the Sun 0.387 AU → 44 million km.
	Venus	• The planet is second from the Sun. • Its axis is inclined by 177° (degrees). • Distance from the Sun 0.723 AU → 104 million km.
	Earth	• The third planet in the solar system. • Its axis is inclined by 23.5° (degrees) • Distance from the Sun 1.000 AU → 149 million km. • There is life on planet Earth.

 Mars	• Its axis is inclined by approximately 25° (degrees). • Distance from the Sun 1.524 AU $\longrightarrow$ 224 million km. • It is the only planet to which humans have sent a Mars probe.
 Jupiter	• The fifth and largest planet in the solar system. • Its axis is inclined by 3° (degrees). • Distance from the Sun 5.203 AU $\longrightarrow$ 777 million km.
 Saturn	• The sixth planet in the solar system. • Its axis is inclined by 36° (degrees). • Distance from the Sun 9.539 AU $\longrightarrow$ 1405 million km. • It has rings around it.
 Uranus	• The seventh planet in the solar system. • Its axis is inclined by 98° (degrees). • Distance from the Sun 19.182 AU $\longrightarrow$ 2,867 million km.



Neptune

- It is the eighth planet in the solar system and the farthest planet from the Sun.
- Its axis is inclined by 29° (degrees).
- Distance from the Sun 30.058 AU
→ 44,850 million km



The Moon

Satellite :

There are some planetary bodies that revolve around different planets, they are called satellites. For example, the moon that revolves around the Earth is a natural satellite.



Asteroids

Asteroids:

In the solar system, a belt of numerous small celestial bodies has formed between the planets Mars and Jupiter. The bodies in that belt are called asteroids. Asteroids orbit the Sun together.



Dwarf planet

Dwarf planet:

There are some small objects that orbit the Sun independently, which do not orbit any planet but only revolve around the Sun, they are called dwarf planets. They are small in size. For example - Pluto



Comet

Comet:

Celestial objects made of ice, dust, and rock that orbit the Sun are called 'comets'. Comets are at great distances from the Sun. Comets appear in the sky after a long period of time.

For example, Halley's Comet appears after every 76 years.



Do you know?

- The average distance of the Earth from the Sun is one astronomical unit.
 - The average distance of the Earth from the Sun is 149 million kilometers.
 - This distance is considered as one unit.
 - This distance is used to measure other distances in the space.
- Planets are divided into inner planets and outer planets. The planets from the Sun to the asteroid belt are called 'inner planets'. The inner planets have a crust. It is rocky. Mercury, Venus, Earth and Mars are inner planets.
 - Planets beyond the asteroid belt are called 'outer planets' or exo-planets. Exoplanets are large and gaseous. Jupiter, Saturn, Uranus and Neptune are exo-planets.



Sun

Sun :

Sun is the only star in the solar system. The sun is considered to be the centre of the solar system. It is made up of very hot gasses. For all other objects in the solar system the sun is the only source of light and heat. The sun is immensely important for the living world on the Earth.



Perform the activity

- The teacher asked a girl to move in a circular motion around herself, as shown in the adjacent picture and asked her friends to write down how long it took her while spinning around.

- The teacher asked the same girl in the class to circle around her friend while spinning around herself as shown in the picture on the side, and asked her friends to write down how long it took.

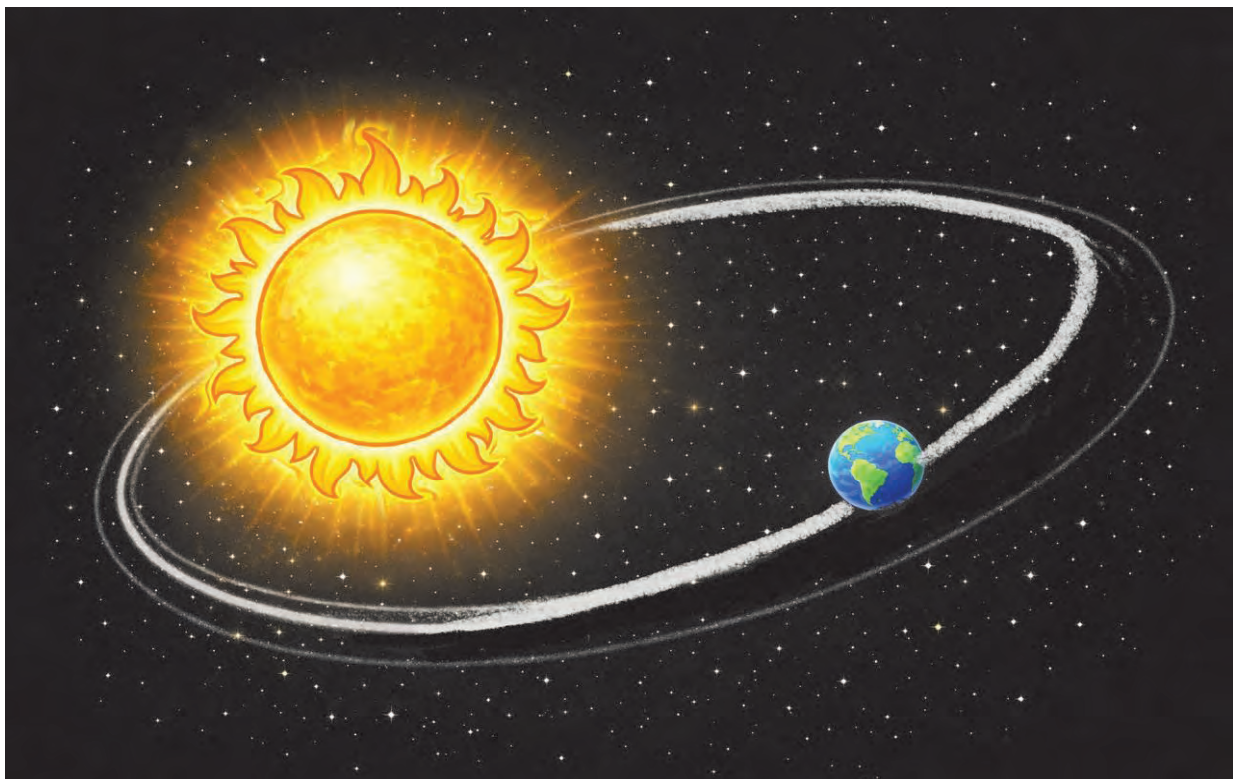


Let's understand

- The teacher told the children, “It took you less time to spin around yourself; but it took you longer to revolve around your friend. The Earth also takes less time to spin around itself. But it takes longer to revolve around the Sun.”



Observe



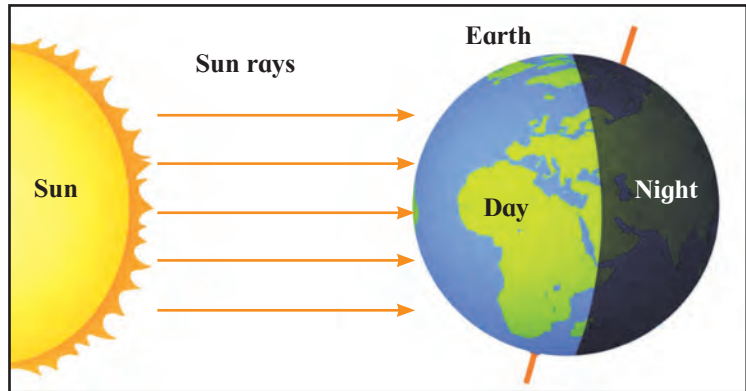
Let's understand

- The time it takes for the Earth to complete one rotation around itself is called a day. Humans have considered one day as 24 parts. Each part is called an hour. The time it takes for the Earth to complete one rotation around itself is called ‘diurnal motion’ or ‘rotation’.



Let's understand

- Because the earth is spherical at any given point of time only half of the earth receives sunlight and the other half is dark.
- In the illuminated part of the Earth there is a day, while in the dark part it is a night.
- The time from sunrise to sunset when we get sunlight is called a 'day'.



The time after sunset when it is dark until the sun rises again is called a 'night'. Day and night together make up a day.

- The Earth completes one spin around herself in a day, which is called 'Rotation'.
- The Earth's movement around the Sun while spinning on its own axis is called Revolution.
- It takes about 365 days for the Earth to complete one revolution around the Sun, which is called a year. This speed of the Earth's revolution around the Sun is called the 'annual motion'. We have divided the year into twelve months.



Perform the activity

- With the help of parents, observe and draw the illuminated part of the moon as it decreases from full moon.



Let's understand

A grandfather and his grand daughter, Anita, are discussing their studies.

Grandpa: Anita, you have been observing the shapes of the moon with me for a week.

Anita: Yes, Grandpa.

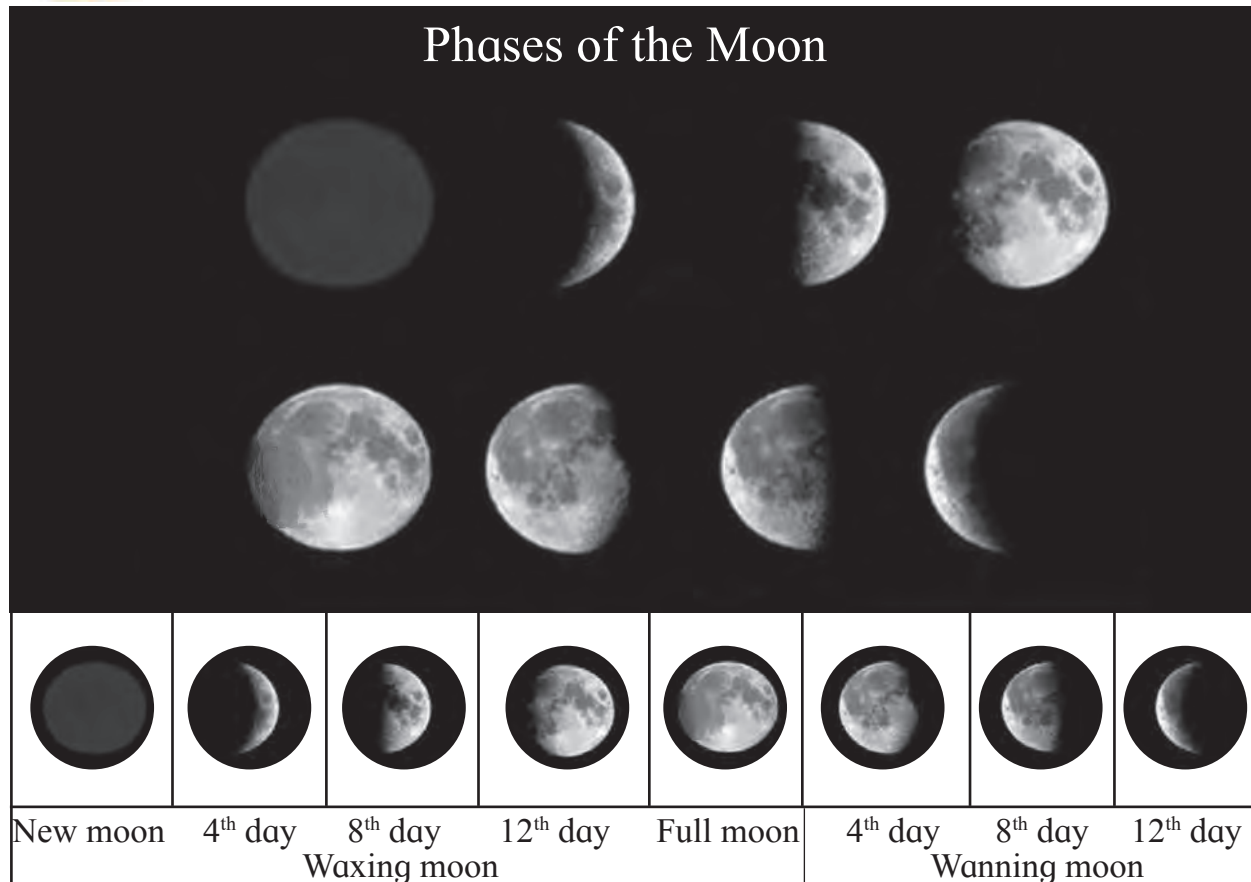
Grandpa: Did the illuminated part of the moon appear to decrease or increase over the course of the week?

Anita: The illuminated part of the moon has decreased.

Grandpa: Right, the illuminated part of the moon decreased. You saw the crescent moon one day. On the full moon day the moon appeared to be a full circle. The shape of the moon appears to change every day. Such changing shapes of the illuminated part of the moon are called 'Phases of the Moon'. Today, let's learn about Phases of the Moon.



Observe



Let's understand

- The Moon is a satellite of the Earth. We use the motion of the Moon around the Earth to measure the time period of a month.
- As the Moon rotates, the side facing the Sun is illuminated and the side facing away from the Sun is dark. The Moon takes approximately the same amount of time to rotate around itself and revolve around the Earth. This is why only a certain part of the Moon is visible from Earth.
- Since the Moon orbits the Earth, the position of the Moon as seen from Earth is always changing.
- We see the shape of the illuminated parts of the moon changing every day. Those shapes are called lunar phases.

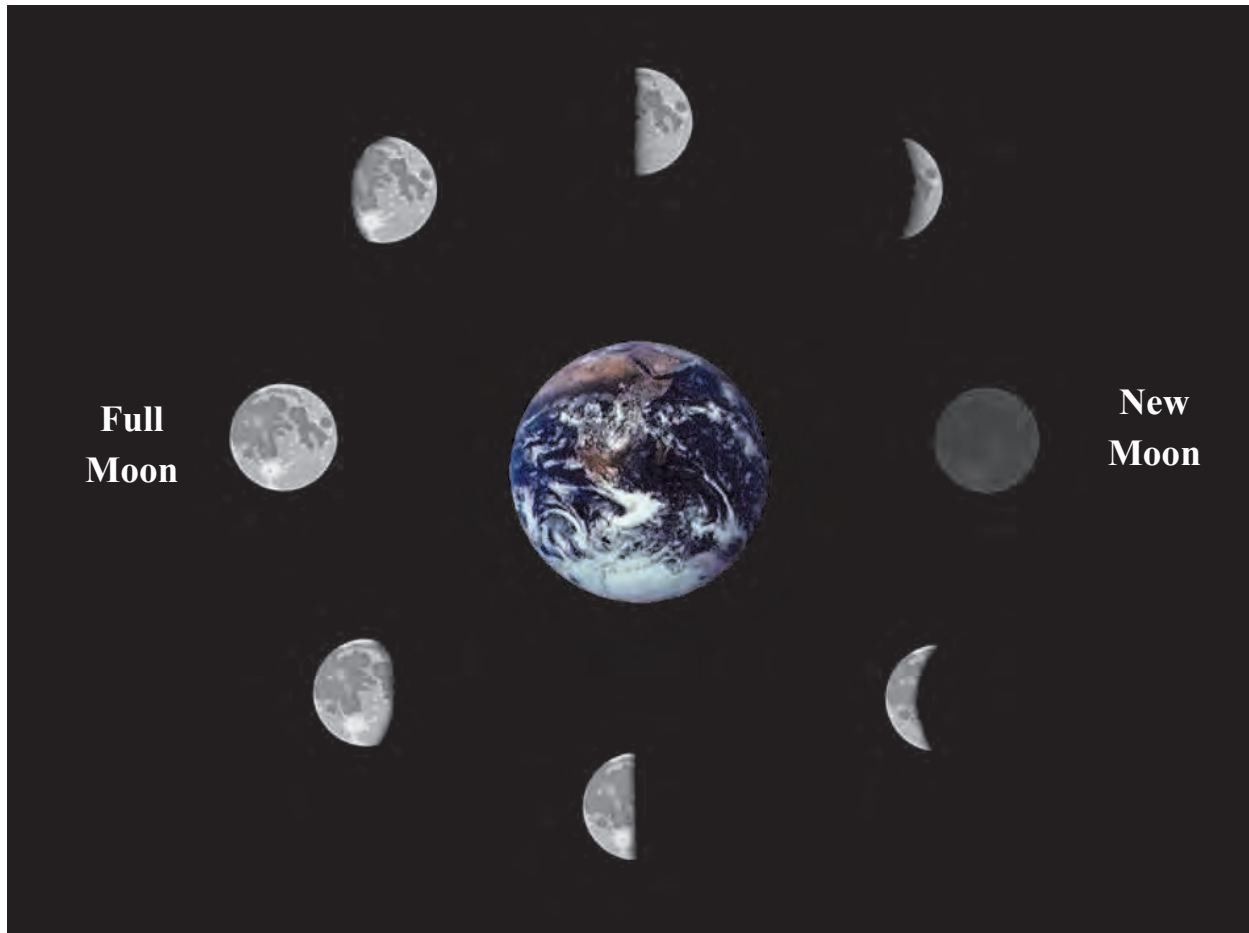


Perform the activity

The picture shows some phases of the moon and their names. With the help of the teacher, write the names of the phases of the moon.



Observe



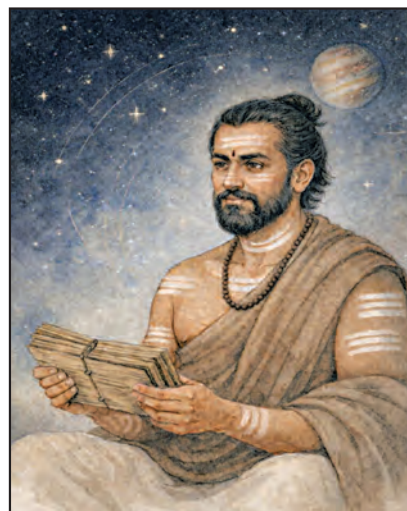
Let's understand

Observe the diagram above. From it you will understand that no matter what the position is, half of the moon is always illuminated. However, when viewed from the Earth, we do not see the entire illuminated part. We can see only a certain part of it. From the new moon to the full moon, the illuminated part of the moon is seen increasing. This period is called the 'Shukla (pure) Paksha'. It is a period of waxing moon. From the full moon to the new moon, the illuminated part of the moon is seen decreasing. This period is called the 'Krishna (dark) Paksha'. It is a period of wanning moon. We do not see the moon on the new moon day, even though it is in the sky.



Let's find out

In ancient India, there was a lot of progress in astronomy. In this, special mention must be made of Varahamihira. He lived in the 6th century BCE. Varahamihira had knowledge of astronomy. This is mentioned in his books Panchasiddhantika and Brihadashamhita. He described the structure of the universe stating that the Earth revolves suspended in space.



We have studied this



- While studying the structure of the solar system, we learned that the Sun is considered to be the centre of the solar system and that the planets revolve around it.
- Understood the difference between planets and stars.
- Understood the sequence of the planets in the solar system.
- Could note the characteristics of planets and also studied the concepts of satellites, asteroids, dwarf planets and comets.
- Understood 'day and night' concept of phases of moon and difference between new moon and full moon.



Let's Revise

(A) Write the correct word in the blank.

- The objects that sparkle in the sky are called
a) Planets b) Stars c) Comets d) Dwarf planets
- is the closest planet to the Sun in the solar system.
a) Mercury b) Venus c) Saturn d) Mars
- The Earth completes one spin around itself in one day which is called motion.
a) Annual b) Weekly c) Diurnal d) Monthly
- Daily changing shape of the moon is called
a) Crescent b) Phase of the moon
c) Planet d) Asteroid

(B) Write the answers in one sentence.

- (1) Which is the satellite of the Earth?
- (2) What are comets ?
- (3) What are the phases of the moon ?

(C) Write short answers.

- (1) Write the difference between planets and stars.
- (2) Write the names of any two inner planets in the solar system.
- (3) Write why the phases of the moon change every day.

(D) Draw the diagram of the any three lunar phases in the box given below and label it.

--	--	--

(E) Tell me!

- (1) What colour does the sky take at sunset? Make an observation and write down about it.
- (2) Think about how day and night occur on Earth and write about it.

(F) With your parents, observe the changes in the phases of the moon in the sky for a month. Make a chart of it and write about it.**(G) With the help of your teacher, create a geographical slogan, song or story on the topic 'Our Solar System'.****Activity**

- With the help of the teacher, perform a role play based on the elements of the sun, moon, planets, and stars.
- Create a replica of 'our solar system'.





Our Green Companions



Let's Recall

Identify the plants from the descriptions given below. State whether they are a **Tree, Shrub, Herb or Climber**.

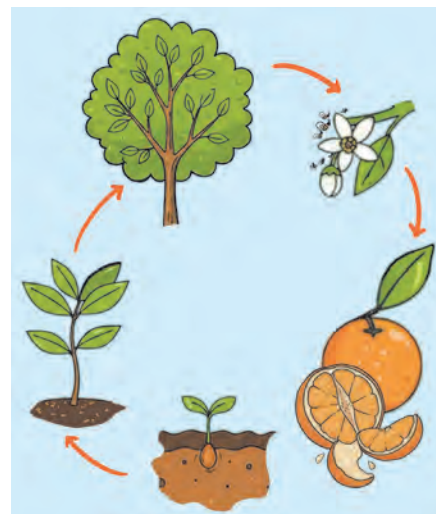
- (1) I don't grow tall. My stem is hard, has thorns on it. I am called the king of flowers.
- (2) I am a leafy vegetable. My leaves taste sour. I don't grow tall. My stem is green and soft.
- (3) My stem is delicate. Therefore, I need support. I grow green fruits. My fruits are bitter.
- (4) I grow tall. My stem is hard I have aerial roots and I bear small, red fruits.

Let's Understand.

A flower bud transforms into a flower. A fruit is formed from a flower. Fruits contain one or more seeds. A seed germinates in the soil; a sprout and a root emerge from it, and a small seedling grows. The seedling grows to become a tree. Some plants are autotrophic, some are



heterotrophic, while some are insectivorous.

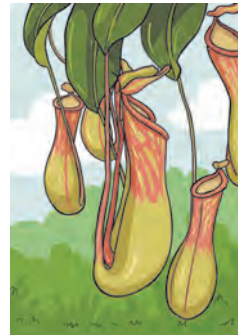


I am a Mango tree. I prepare my own food; I am **autotrophic**.

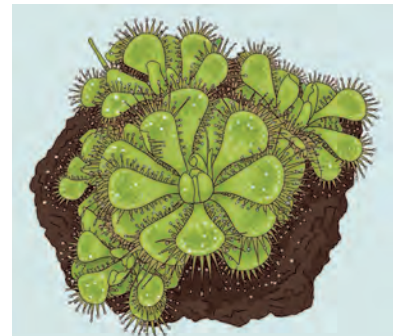


I am Dodder. I grow with the support of big trees and absorb some of the food they prepare. I am called **heterotrophic**.

We are **insectivorous**; insects are our food!



Pitcher Plant



Sundew



Think

- Does the tree on which the Dodder grows suffer any harm from it ?
- Which autotrophic plants do you know?

Help we get from plants -

This is a room in Rashmi's house. List the items that are made from plants and complete the table below.



Name of an object	Which part of the plant is it made from?



Think

Tree helps us, so how can we help tree?



Let's Recall

Complete the paragraph by writing appropriate words in the blanks.

Roots,, and stems are organs of plants. Roots absorb and..... Leaves use.....,, and air to prepare food. Some plants bear Fruits are formed from New grow from the inside the fruits.

The journey from a plant's seed to fruit is given below in the jumbled order. Give them the correct order.



Let's Understand

There is diversity in every organ of shrubs, herbs, climbers, and trees in our surrounding. Diversity is seen in the shape, colour, texture, and edges of plant leaves. Similarly, flowers of different plants have different shapes, colours, and fragrance. Flowers like Hibiscus, Periwinkle have five petals, while flowers like Rose, Jasmine have many petals.



Rose



Periwinkle



Try this

Collect information about different leaves and flowers in your surroundings. Make a collection of their pictures.

|| Let's Understand

Types of leaves

(1) Simple Leaf - Only one leaf is attached to the stem.

Examples: Mango, Lemon, Hibiscus, Banyan, Peepal, etc.



Guava leaf

(2) Compound Leaf - Many small leaflets are attached to the stem. Examples: Tamarind, Gulmohar, Coconut, Drumstick, Neem, Touch-me-not, etc.



Tamarind leaf

Collect fallen leaves from trees in your surrounding. Prepare a table in your note book of the types of these leaves and other information.

Sr. no.	Name of leaf	Figure	Type	Texture
1	Lemon leaf		Simple	Soft
2				
3	Night Jasmine (Parijatak)			Rough



Try This

The Peepal Leaf of Memories

Take one Peepal leaf. Soak it in a wide bowl of water for 15 to 20 days. Change the water every 3 to 4 days. After 20 days, wash the leaf gently. Use the gauzy leaf as a bookmark.



|| Let's Understand

With the help of air, sunlight, and the water and nutrients absorbed by the roots, green plants prepare their own food. This is known as '**Photosynthesis**'. This activity mainly takes place in the leaves of green plants. The food prepared by plants is useful for all living beings.

Some nutrients from soil dissolve in water. Water and these dissolved nutrients are absorbed by the roots. These nutrients reach the stem and the leaves. Roots hold the soil firmly, which gives support to the plant.

Types of Roots

(1) Taproot - A thick main root with small branches growing from it is called taproot. Trees like Mango, Peepal have taproots.



(2) Fibrous Root - Many fibre like roots growing from the base of the stem are called fibrous roots. Plants like Wheat, Maize, Grass, and Coconut have fibrous roots.



Pictures of some plant parts are given below. Identify them and find information about their root types.



Lifespan of Plants

Each plant has some approximate lifespan. Plants have a specific life cycle. Some plants live for a very short time, while others live for many years. Plants like Marigold, Wheat and Spinach live for few months. On the other hand, plants like Rose, Orange, Jujube (Bor) and Pomegranate live for several years. Trees like Peepal, Tamarind, Coconut, Drumstick, Hadga and Breadfruit live for many years, while some species of Banyan can sometimes live for hundreds of years.

Identify the plants that bear seed, flower, fruit, root shown in the pictures given below. Write their approximate lifespan in your notebook.



Observe

Identify whether the action shown in the picture is right or wrong. Colour the 👍 symbol green for the right action and the 👎 symbol blue for the wrong action.



Kshitij has a small terrace garden. However, Kshitij and his family have to go out of town for 15 days. What solutions would you suggest to Kshitij so that the plants in the terrace garden stay alive during this time?





Try this

Seed Balls

On a happy Saturday, Seema Tai gave the children a favourite task, “Come on, today we will make seed balls!” The children had stored seeds of various trees they had collected and seeds from fruits they had eaten. They mixed fertile soil from the garden, cow dung, a little water and the seeds together. They made lemon-sized balls of the mixture and dried them in the sun.



After the rain started, the children took the prepared seed balls and scattered them in open spaces in the surrounding. They decided to take care of the saplings that grew from them after a few days.

For the protection of the environment, each one of us should plant and nurture as many as trees as possible in our surrounding, courtyard and school premises every year.

Let's Understand

Uses of Plants

There are various types of plants around us, in fields and in forests. From these plants, we get food, clothing, shelter, shade and medicines.

Food



Observe

- Write the names of the items in the accompanying picture.
- From which plants are those items made?





Do you know?

Rice is of white, red, black, purple, and brown colours. Red and black rice are more nutritious. Rice has a hard outer shell called the 'husk' (toos). This husk is removed in a rice mill. Afterward, the rice is polished; however, this process removes the nutritious bran. Therefore, rice should not be over-polished.



White rice

Red rice

Black rice

Purple rice

Brown rice.

Clothing

Clothes are made using fibres from plants like cotton and jute.



Shelter



- Which animals in the pictures are using trees for support?
- Which birds nests have you seen in the trees around you?

- Which parts of plants have been used to build the house shown in the picture?



Birds build nests in trees. Animals like monkeys live in trees. At night hens roost on tree branches or take shelters in tree branches. Humans use wood to build huts. Also, walls are made of wattle (kuda) and bamboo. Wood is used to make doors, windows, and rafters for houses. The upper floors of many houses are built from wood. Wood from trees such as

teak (Sag), Sissoo (Shisham) and Jackfruit (Fanas) are used for building houses. Houses built using natural materials like coconut leaves (zavalya), hay (pendha), grass (gavat), wattle (kud), bamboo, wood and cow dung are airy, cool and inexpensive to build.

In this way, humans, animals, and birds use plants for shelter.

Shade

Trees provide shade. Humans, animals, and birds get relief from heat in the shade; therefore, trees have been planted on both sides of roads for many years.



In these various ways plants are useful to humans, animals, and birds. They are our friends and companions. Therefore, we must plant trees and take care of them.

Medicinal Plants

Lemongrass, Adulsa, Basil, Aloe Vera, Five-leaved chaste tree (Nirgudi), Gulvel, Shatavari and Neem are various medicinal plants.

Many medicinal plants are found in forests; however, their numbers are decreasing because they are being used for medicines on a large scale. Therefore, there is a need to cultivate these plants. The government provides help for the cultivation of medicinal plants.



Do you know?

Our country has a tradition of Ayurveda for thousands of years.

Vaidya Parshuram Khadiwale was a famous Vaidya from Pune. He studied Ayurveda and prepared various medicines. He wrote books on the cultivation of medicinal plants, methods of preparing medicines, methods of treatment. He used to tell everyone to develop medicinal gardens in every village and in their backyards. For this noble work, the Government of India honored him with the 'National Dhanvantari Award'.





We have studied this



- * Flowers produce fruits and new plants are grown from the seeds within those fruits.
- * Many plants are autotrophic. Some are heterotrophic and some are insectivorous.
- * Simple leaf and compound leaf are the two types of leaves.
- * Taproot and fibrous root are the two types of roots. Each plant has some approximate lifespan.
- * Plants are used for food, clothing, shelter, shade and medicine.



Let's Revise

(A) Select the correct option for the following questions.

- (1) What are plants that grow tall and have a hard stem called?
a) Herb b) Vine c) Shrub d) Tree
- (2) What are plants called that grow on other plants and absorb some food from them?
a) Autotrophic b) Heterotrophic c) Insectivorous d) Vine
- (3) What is the use of the colour and fragrance of flowers to the plant?
a) To prepare food b) To attract insects
c) For self-protection d) To absorb water
- (4) What does a floral bud transform into?
a) Fruit b) Seedling c) Flower d) Seeds
- (5) By which process do plants prepare food?
a) Respiration b) Photosynthesis
c) Digestion d) Absorption
- (6) What is the main function of roots?
a) To produce flowers b) To absorb water and nutrients
c) To produce seeds d) To produce fruits

(B) Answer the following questions in one sentence:

- (1) The small branches grow out from a main root, which type of root is it?
- (2) Which part do plants mainly use to prepare their food?
- (3) Which are the essential things needed by plants for photosynthesis?

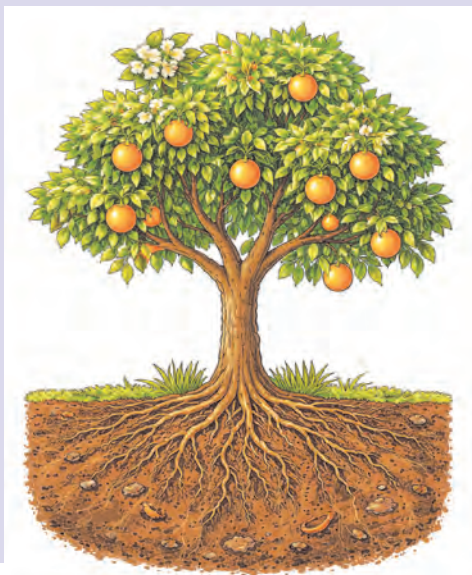
(C) Find and write the names of plants in the crossword puzzle below.

b	a	m	b	o	o	s
h	m	a	i	z	e	p
k	l	n	x	g	r	i
z	a	g	c	a	i	n
r	o	o	t	q	b	a
d	r	u	i	t	s	c
c	r	o	o	m	d	h

(D) Write the answers of the following questions.

- (1) Why should medicinal plants be cultivated in the house or in backyard?
- (2) How do trees in the forest grow large even without given water or fertilizer?
- (3) What are the benefits of houses built using parts of plants?

(E) Observe the picture and write the names and uses of the parts of plant.



Activity

- * 'My Medicinal Garden' – Planting medicinal plants like Basil, Mint, Coriander in small pots. Note the date of planting. Note changes in leaves, height, colour.
- * Get information about industries that perform various processes on medicinal plants in your area.
- * Get information about where and what efforts have been made for the conservation of trees in Maharashtra.
- * Collect various fallen leaves, flowers, and seeds of different trees from the ground.

5

The Fun of Changing Seasons

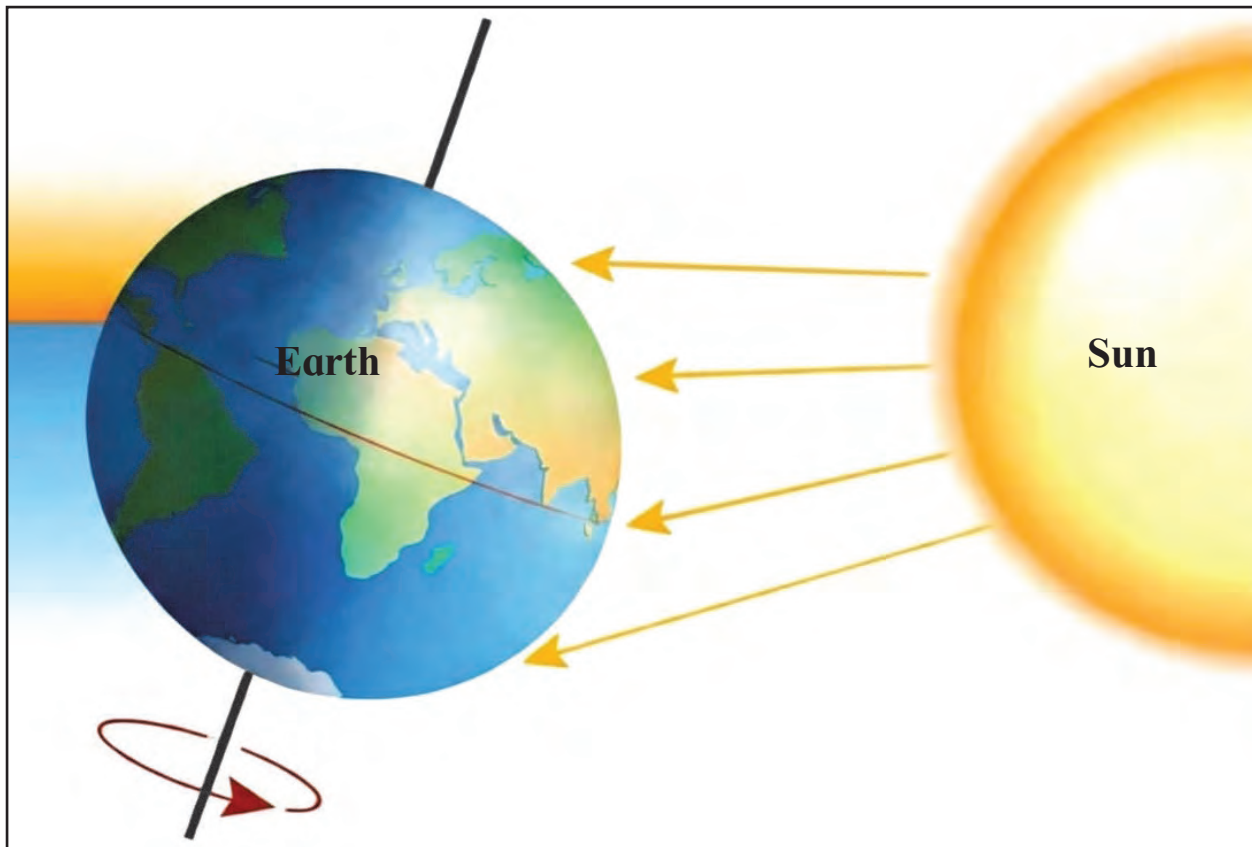


Observe



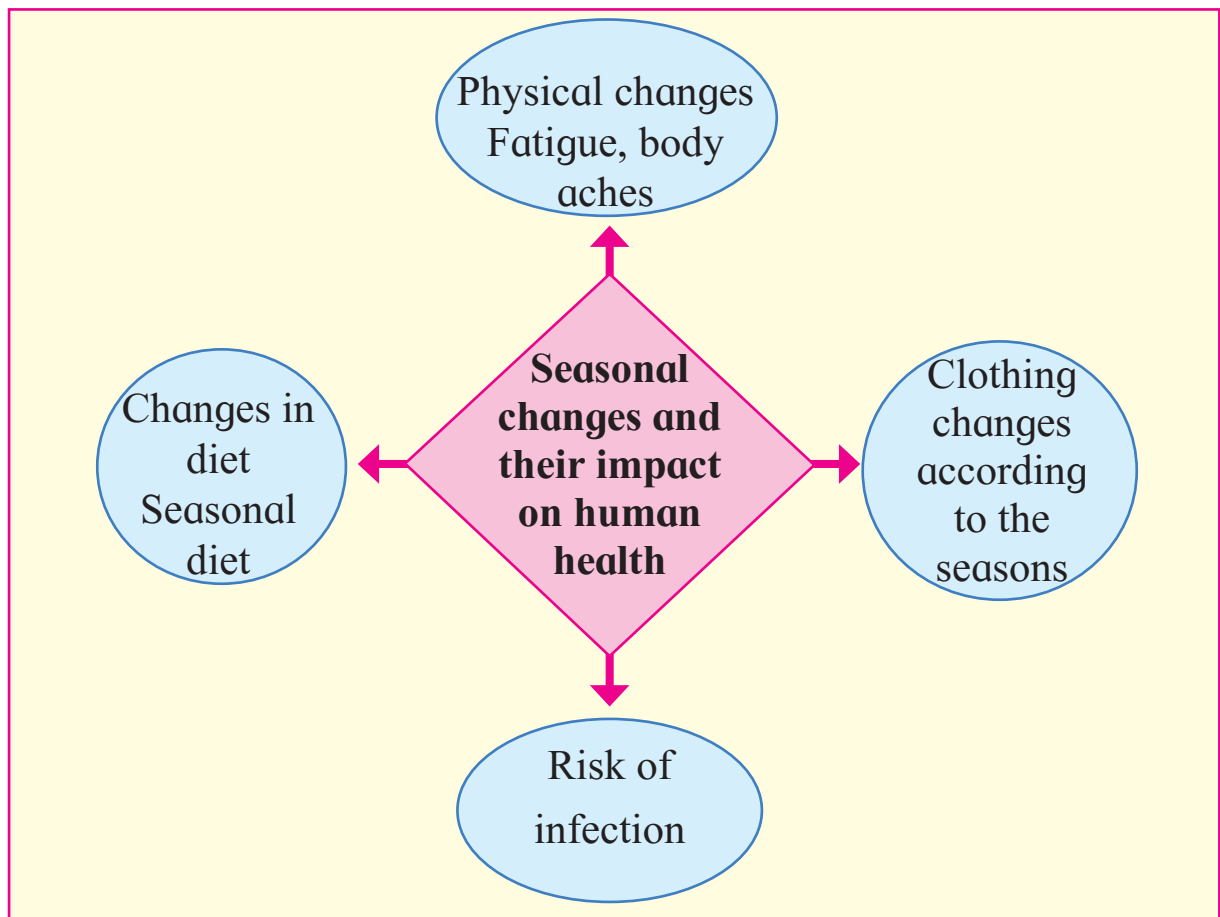
Observe the pictures above. Discuss with your teachers, parents and friends and find the answers to the following questions.

- In what season does mango blossom?
- Which fruits do we eat in winter?
- What kind of work do farmers do during the monsoon?
- When do we need watermelon, cucumber and other cold drinks?
- In which season is it beneficial for health to eat dry fruits?
- How do animals protect themselves in the rain?



Let's understand.

While the Earth rotates around itself and revolves around the Sun, its axis remains tilted by $23^{\circ} 30'$. While revolving around the Sun, both poles of this axis face the Sun at different times. As the North Pole faces the Sun, the duration of the day in the Northern Hemisphere increases. Due to this, the temperature increases in the Northern Hemisphere and summer begins. At this time, the duration of the day in the Southern Hemisphere decreases. Therefore, the temperature in that area is low and winter begins there. Temperature change in both the hemisphere lead to changes in air pressure. The hemisphere which experiences summer season at the same time the winter is experienced in opposite hemisphere. This leads to generation of winds that blow from high pressure areas to low pressure areas. Winds containing moisture blow from the ocean. Such winds cause rain. In our country, rain occurs due to seasonal winds. The amount of rain varies depending on the geographical conditions in the region. Seasons are formed due to the changing temperature on the Earth's surface. For example, summer, monsoon and winter. Let us learn about the effects of these seasonal changes on human health.

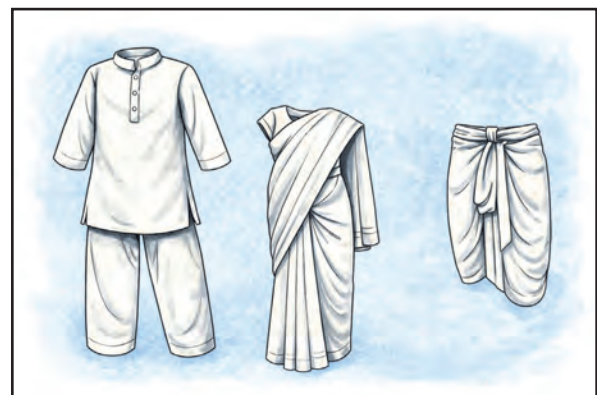


The three major seasons, summer, monsoon, and winter affect living things. Due to this, we experience many changes in the environment.

Seasonal changes are caused by the Earth's revolution around the Sun and the tilt of the Earth's axis. Weather consisting of temperature and precipitation changes during different seasons. The effects of these changes are visible on nature and human health during different seasons. For example, climate change affects plant growth, animal behavior, crop production and even human health.

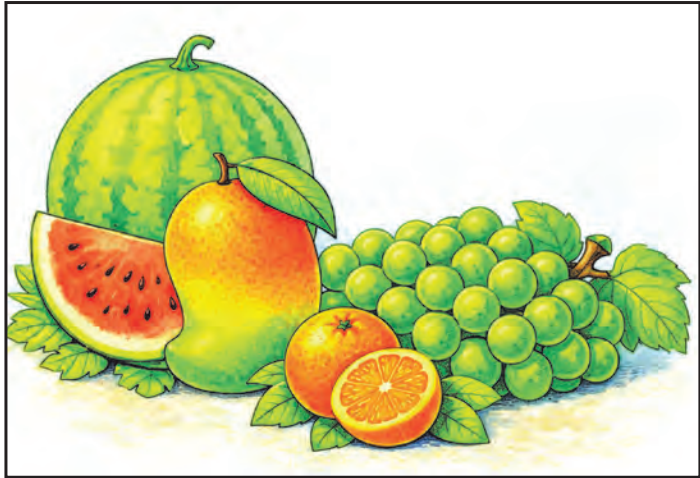
Our diet and clothing change with the seasons.

Summer season - In summer, the weather is very hot. Therefore, we wear loose and cotton clothes. Drink water and cold drinks frequently. Avoid going out in the Sun if possible. If necessary, use an umbrella, suncoat and handkerchief etc.



In summer, fruits like mangoes, watermelons, oranges, grapes etc. are abundant in the market and we enjoy eating them too. The cashew season also begins in Konkan.

Like humans, animals also change their daily routines. Animals like snakes, frogs, etc. usually do not come out in the summer. Some animals live in trees and in cool places.



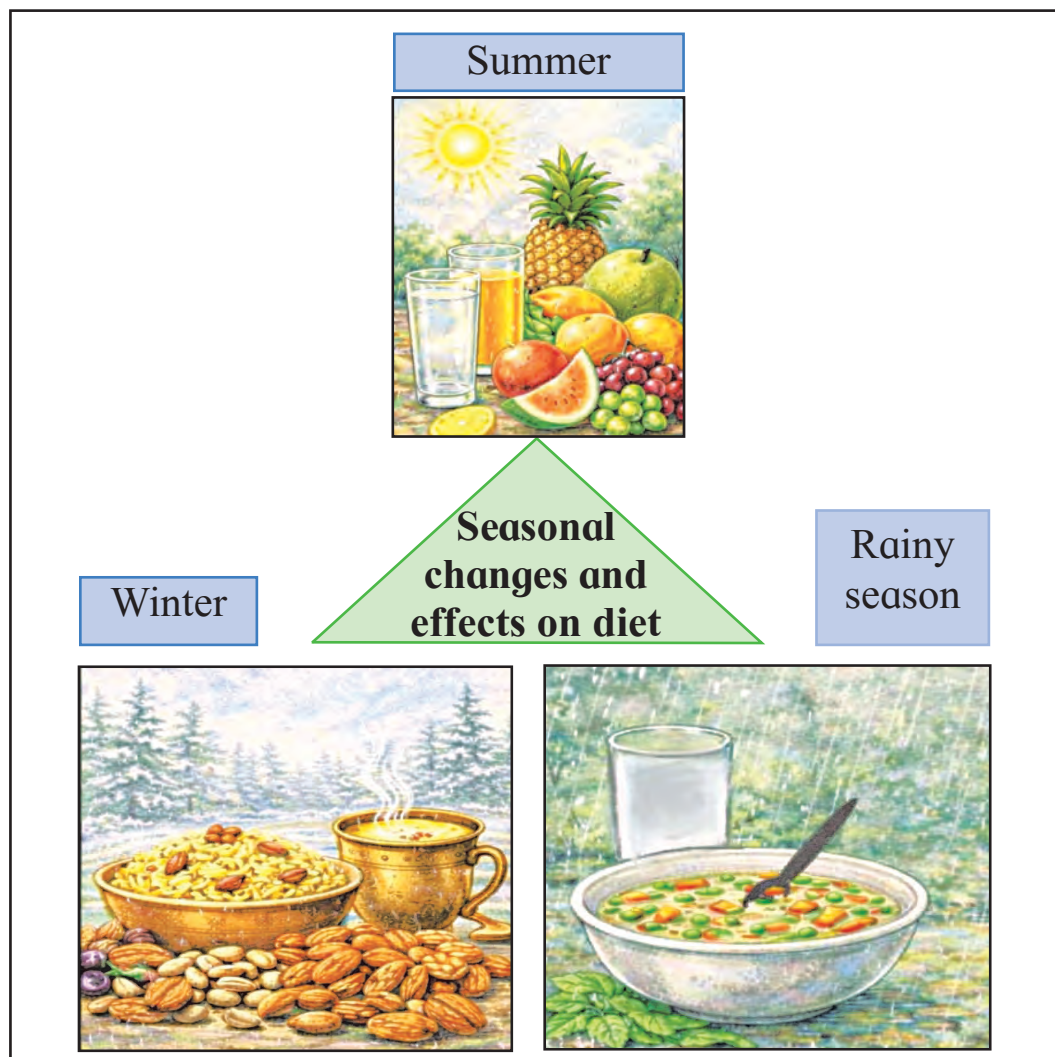
Rainy season - After summer, the monsoon season arrives. The rains start from the month of June. Greenery starts appearing everywhere. Farmers start sowing. Some people take various measures to protect their houses from rainwater. Various types of fruits are available in the market. Various types of wild vegetables are used in the diet.

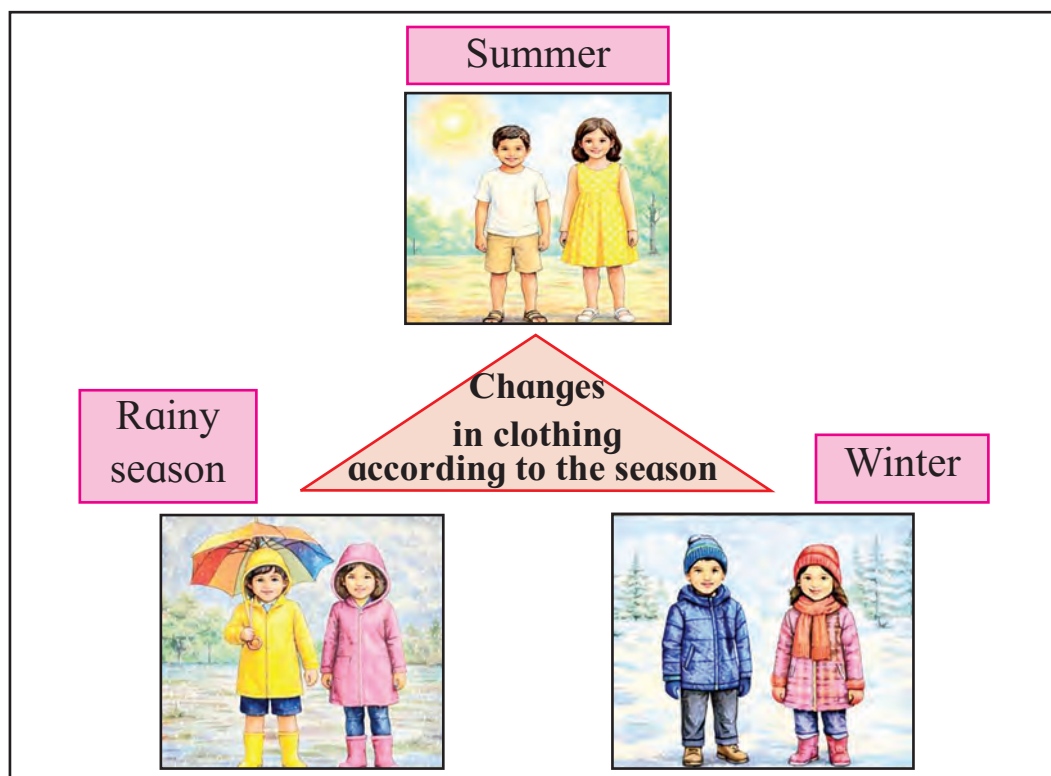
We use umbrellas, raincoats, blankets, etc. to protect ourselves from rain. We also take proper care while traveling. For example, if rivers and streams flood, we do not cross the flood waters. We use alternative roads. Animals are also seen taking care of themselves to protect from rain.





Winter Season - After the monsoon season ends, winter sets in. The air feels chilly. The cold air starts blowing. We wear warm clothes to protect ourselves from the cold. In winter, fruits like guava, jujube etc. are available. We eat such fruits. We also have Diwali holidays in winter. At the end of the winter season, the leaves of the trees start falling.





Do you know?

Bird migration: All living things change as the season changes. Some animals move from one place to another, which is called migration. Birds are the largest among migratory animals in numbers. Birds migrate for some time (seasonally) due to weather changes, availability of food and raising their young ones. Some birds come to India from other countries and some go from India to other countries. Most of the birds come to India in winter. Birds migrate by traveling thousands of kilometers. After a few days, when the weather changes, they return to their region. Get information about such bird migration places in Maharashtra. For example, Mayani Bird Sanctuary in Khatav taluka of Satara district.





Let's find out

Tree plantation week is organized at various places after the onset of the monsoon season. Tree plantation week is celebrated from July 1 to July 7. During this time, many types of trees are planted by people together.

Forest Festival is also organized during the monsoon. Various activities are also carried out in this, e.g. Countless or one billion tree plantations, 'एक पेड माँ के नाम' (*Ek Ped Maa Ke Nam*).



Perform the activity

Observe the picture above and write information about it in four to five lines.



We have studied this



- We understood that seasonal changes are caused by the Earth's revolution around the Sun and the tilt of axis.
- We understood that the change of seasons affects human life.
- We understood that seasonal changes result in diversity in clothing.
- The diet changes according to the seasons.



Let's Revise

(A) Write the correct word in the blank.

- (1) There are major seasons in India..
a) two b) three c) five d) six
- (2) Eat food that provides more energy during the season.
a) Summer b) Monsoon c) Winter d) Spring
- (3) are caused by the Earth's revolution around the Sun and the Earth's tilt.
a) Season b) Water cycle c) Festivals d) Day and night
- (4) Duration of each main season is of months.
a) four b) three c) two d) five

(B) Write the answers in one sentence.

- (1) By how many degrees is the Earth's axis tilted?
- (2) What season is there in our country from June to September?
- (3) In which season should we drink more of the drinks like juices and buttermilk?

(C) Write short answers.

- (1) Write down the effects of seasonal changes on human health.
- (2) How are seasons formed? Write in two-three sentences.

(D) Complete the table diagram below.

Season	Festival	Clothing
Summer		
Rainy season		
Winter		

(E) Discuss in class what effects it will have on our daily life if we do not change our routine and diet according to the seasons.

Activity

- Make a list of the food items that are prepared seasonally in your home.
- Prepare drinks like lemonade, kokam sharbat, and raw mango drink with the help of household people.
- Use the Internet to find out about the changes in people's clothing according to the seasons.



6 Food and Shelter



Amit and Swara were sitting down to eat. Mother served the plate and said, “Take as much as you need, but don’t waste food.”

Amit : Mom, why do you tell us this every day?

Mother : To avoid wasting food.

Swara : Why?

Mother : Because, we get it when a farmer works hard to grow grain.

Amit : Mom, do you know, how farmers cultivate grain?

Mother : Yes.

Swara : Then tell us too.

Mother : Yes, I will.



Let's understand.

Mother : The farmer does the work of tilling the fields. He ploughs the land using a pair of oxen or by attaching agricultural implements haked to a tractor. When it rains in summer then farmer sows the seeds after preparing the land. After sowing, the crops start to grow after a few days. The crops grow vigorously on the available water. The crops start to fill the grains. After the grains are fully filled, they have to be harvested. Harvesting means cutting and collecting all the ears of corns. Then threshing and winnowing are done.

Swara: What is threshing, Mother?

Mother: Threshing is the process of crushing corn of ears and separating its grains.



For this, they use a bullock. A stake is erected in the middle of the threshing floor, and the bullock is tied to it. The bullock walks around the stake. The ears of corn are arranged in such a way that they fall under bullocks feet. When the bullocks start walking on the ears of corn, the grains fall off under their weight.

Amit : How do you do a winnowing?

Mother : They stand on a slightly elevated place for winnowing. They take the threshed grains in a basket and drop them on the ground. The wind blows away the husks and light debris. The grains fall closer together and form a pile. Now a days winnowing is being done by machines. Machines do the work faster but require effort and expense.

Swara : Then what happens to pile of grains?

Mother : After winnowing the grains are filled in jute bags care is taken to ensure that it does not get damaged by insects, rats, or rodents. Farmers keep enough grains to last it for a year. They load the ramaining sacks into carts and carry them to market for sale. Traders buy the grains there.

Amit : But where is the bread made?

Mother : Oh yes. Listen, traders buy grains from farmers and people buy them from the shops of those traders, separate them, clean them. Then we





grind the grains and make flour. Then while cooking, we make bread from that flour. Only then the bread comes to your plate.

Food is produced with the efforts of these many people. Is it good to waste that food?

Swara, Amit; No. Now we will never waste food.

Mother : Very good children!



Perform the activity

- With the help of your teacher, discuss with your friends how food travels from the farm to your plate.
- Get pictures showing the journey of food from the farm to the home and paste them in your notebook.



Let's understand

Food should never be wasted. We always say, 'Food is Purna Bramha' meaning that food is Bramha (God) in itself. That is, food is sacred, worshipable and the basis of our life. Friends, the energy required for our body to function is produced from food. If we eat the right food at the right time and in the right quantity, our body remains healthy and strong.



Complete the chart

- We prepare food at home every day. We use various grains, vegetables, and fruits in our food.
- With the help of your teacher, prepare a list of foods made from food grains in various regions of the state in the following table.

No.	Food	A dish made in the region				
		Konkan	Khandesh	Western Maharashtra	Marathwada	Vidarbha
1.	Rice					
2.	Wheat					
3.	Jowar					
4.	Pulses					

Show your prepared list to your friends and record the items that are not on your list but are on their list in the table below.

No.	Food items on a friend's list	Different substances made up
1.	Rice	Bread, rice, dosa, modak, idli
2.	Wheat	
3.	Jowar	
4.	Pulses	



Let's understand

The diversity of food grains in Maharashtra is evident in the variety of food items prepared from wheat, rice, jowar, bajara, oilseeds, various pulses and vegetables. The diversity of food grains is also evident according to regional and seasonal factors. For example, rice and fish are prevalent in Konkan, while jowar and bajara products are prevalent in Vidarbha and Marathwada.

- Including a variety of foods in your daily life provides a balanced and nutritious diet.
- The diversity of food grains is mainly based on climate, geographical conditions and local factors.

You will notice that sometimes different dishes are prepared from the same food grain. For example, different food items are made from the staple food grain rice. There is diversity in food grain production in our country.



Perform the activity

- Draw a diagram of any two food items you like in the box given below.

Activity

- With the help of teachers, study videos and pictures of food items prepared in various states of India and during their festivals and celebrations with the help of the internet.



Let's find out

Agriculture is practiced everywhere in our country. Agriculture mainly depends on rainwater. Rainfall does not occur evenly everywhere, so crops like rice, nachani, varai, coconut are grown in high rainfall areas. Wheat, tur, soybean are grown in moderate rainfall areas. Similarly, crops like jowar, bajra, moong, and matki are grown in low rainfall areas. Improved seeds, fertile land, sufficient sunlight, and sufficient water are necessary for good crops. In our country, there is diversity in food grains and vegetables according to the seasons.

Activity

- With the help of teachers, study videos and pictures online that provide information about food crops in India.



Observe



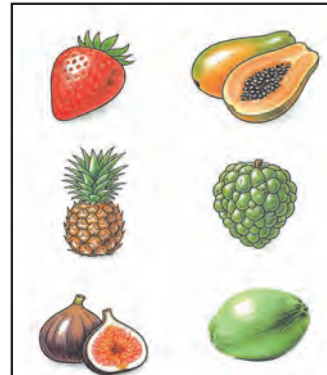
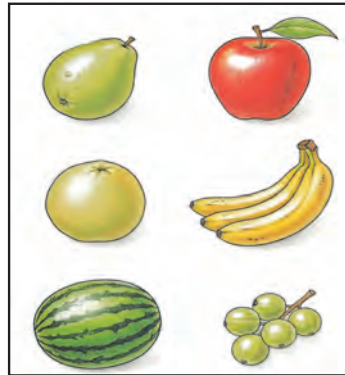
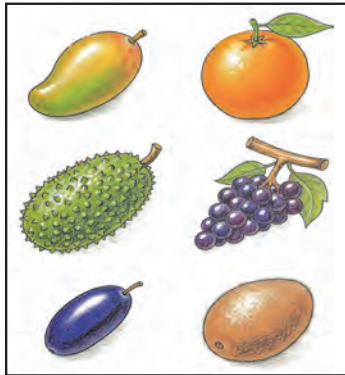
Can you Tell?

- Name the fruits that are kept for sale in fruit shops.
- What fruits are available for sale throughout the year in your area?
- Which fruits are in abundance in the winter season?
- What fruits are for sale in the summer season?

The availability of fruits varies depending on the season and there is seasonal variation.



Observe



Observe the pictures and record the fruits available according to the seasons in the table provided.

Summer	Rainy season	Winter
.....		
.....		
.....		



Observe

Observe the picture and answer the questions.



- Which tools are used in farm work?
- What kind of work does a farmer has to do?
- What problems one has to face while doing agricultural work?



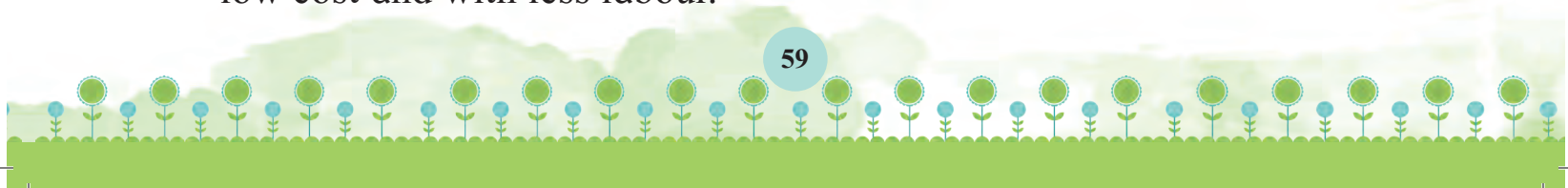
Let's find out

- Humans perform various tasks to fulfill their needs. Farmers play an important role in fulfilling the need for food.
- Farmers have been fulfilling the need for food for a long time. Farmers do many tasks in the field such as preparing the land, sowing, harvesting, threshing, winnowing, packing the grain in sacks and transporting it to the market.
- Farmers work hard in the fields to grow grains, fruits, flowers, vegetables, pulses, oilseeds, etc. for all of us. Agricultural production depends on factors such as land, water, climate and sunlight.
- The main crop grown in any region is used to make various dishes in that region. For example, In Maharashtra, Solapur district has highest production of jowar and here Solapur district is known as the 'storehouse of jowar'. Jowar is grown in large quantities in the plateau region. In this area, jowar is used to make dishes such as hurda, lahya, bhakri, ghugra, papad, sandage, ambil, dhapate etc.
- In Konkan, rice and coconut are used more in the coastal areas. In Central Maharashtra, jowar, bajara, groundnut, soybean, sesame, mustard etc. are used in large quantities. Also, in tribal areas, bread is made from millets like nachani and varai.



Let's understand

Organic farming is a method of growing crops using natural fertilizers. In this, farming is done without using chemical fertilizers. For example, dung, compost fertilizer, vermicompost and leaf mold are used in agriculture. Natural measures are taken to control pests and diseases in agriculture. Therefore soil's fertility is maintained and the food produced is healthy and nutritious. Recently, the use of modern technology in agriculture has increased the productivity of agriculture. Various agricultural works are carried out with the help of machines at low cost and with less labour.





Observe

Observe the picture.



- Why is heat needed to cook food?
- What items do we eat without cooking?
- What are the traditional and modern tools used to cook the food in the pictures? Write them.



Let's understand

Various tools are used to cook food. For example, hearth, stove, solar hearth, solar cooker, gas grill, etc. People prepare food according to their taste in their daily diet. Various items are used to prepare food. For example, wheat, rice, jowar, dal, vegetables, fruits. There are different methods of preparing food such as roasting, cooking, boiling, steaming, frying, etc. Cooking food makes it soft and easy to digest. It becomes more tasty and appetizing. We eat some foods raw. For example, fruits, cucumber, tomatoes, etc.



Complete the chart

Read the above passage and write the methods of food preparation on the table.

Foodstuff	Methods of preparation
Bread	To roast
Idli	
Bhaji (Pakoda)	
Rice	
Modak	



Let's understand

- Wash fruits and vegetables before eating.
- Vegetables cut should not be soaked in water for a long time, as their nutrients and vitamins dissolve in water.
- Cooking food for too long, reduces its nutrients.
- Do not eat uncovered foods.
- Do not immediately put cooked food in the fridge.



Perform the activity

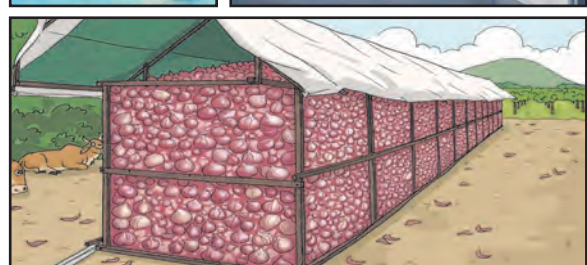
Collect pictures of famous food items from different parts of Maharashtra and write information about them.



Let's find out

There are traditional methods of food preservation. Such as drying, preserving with preservatives, salting, storing grains by mixing them with neem leaves. We constantly need grains like wheat, rice, jowar, pulses. We have to preserve such grains throughout the year. For example, wheat, jowar, pulses, etc.

Some common methods of food preservation include sun drying, storing in a well-ventilated area (for example, onions, potatoes), which prevents food from spoiling, making it last longer. These methods of food preservation makes it safe to eat.



It is important to store food properly. This ensures that it is free from insects or fungus.

Activity

- Find out about food storage methods in your area.



Try it.

Do the following with your parents.

Recipe for preserving raw mango.

Ingredients - Glass jar, knife, spoon, coriander, salt, chili powder, coriander pickle seasoning (pickling ingredients - oil, mustard, turmeric, asafoetida)

Method - Clean and dry the jar. Cut the raw mango into thin slices with a knife. Fill the slices in the jar and add the pickle masala, chili powder, and salt. Stir this mixture well with a dry wooden or steel spoon. This will mix all the ingredients. Then add cooled oil after it is boiled then add mustard seeds. Tie a clean cloth tightly over the mouth of the jar and cover the jar.

Preservatives - Certain substances are added to pickles and marmalades to preserve them. Therefore, substances that make these foods last throughout the year are called preservatives (chemicals that preserve substances).

E.g. Salt, asafoetida (*hingh*), mustard, cooking oil.

- Care should be taken to ensure that there is no water left in the food.



Can you Tell?

1. Why are grains, pulses, papads, etc. dried in the sun before storing?
2. Observe and tell the difference between the fresh cut and salted pieces of raw mangoes.

Activity

- Visit a dairy farm in your area with your teacher.
- Using the internet find out how grains were stored in forts during the time of Chhatrapati Shivaji Maharaj.



Can you Tell?

- 1) When do we say that a food is stale or has gone bad?
- 2) In which season do foods spoil quickly?
- 3) Why food items stored in air tight bags should not be eaten?
- 4) What are the foods that spoil the fastest?



Let's find out

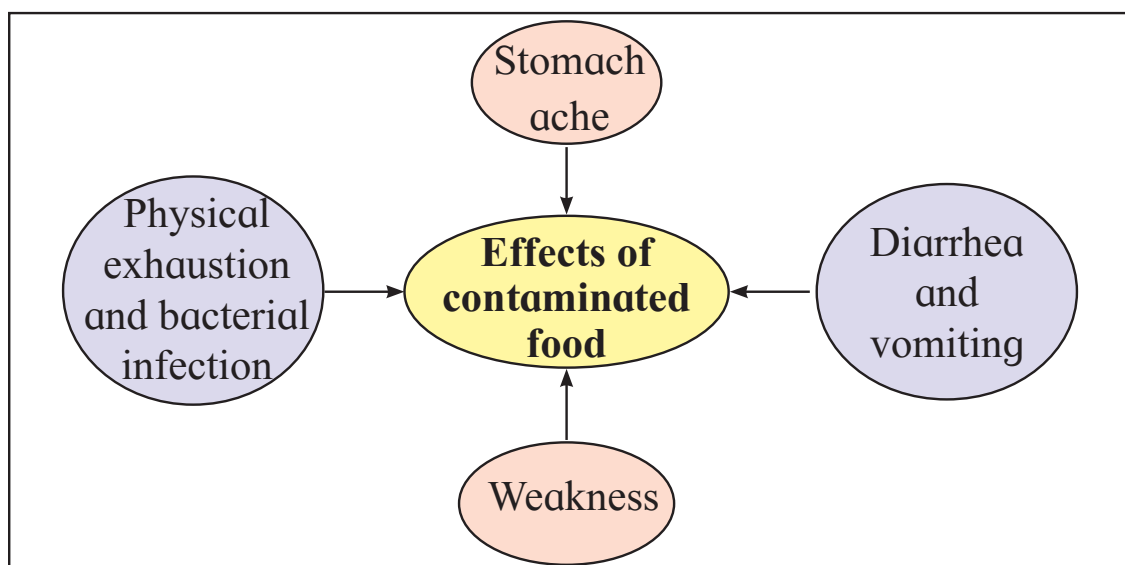
Contaminated food is that food which is spoiled, poisoned, or spreads diseases. Contaminated food is spoiled by pathogens. These pathogens are harmful to our health.

Causes of food contamination

- 1) Food becomes contaminated due to contact with microbes, chemical toxins, polluted air and unclean water.
- 2) Food is contaminated by physical substances such as glass fragments, metal particles, plastic and soil mixed into food.
- 3) Food gets contaminated by using unclean utensils, unwashed vegetables or fruits.
- 4) Food gets contaminated by being kept open.
- 5) If food is kept for a long time, it becomes stale and contaminated.

Effects of Contaminated Food

Consuming contaminated food has its side effects.





Let's find out

Food is considered contaminated if it looks very bad, old, rotten, or moldy. If food smells bad or is sticky, it should be considered contaminated.



What to do?

Contaminated food is harmful to our health. The following steps should be taken to prevent food contamination.

- 1) Food should be covered.
- 2) Avoid wastage of food.
- 3) Use clean water to prepare food.
- 4) Eat fresh and healthy food.



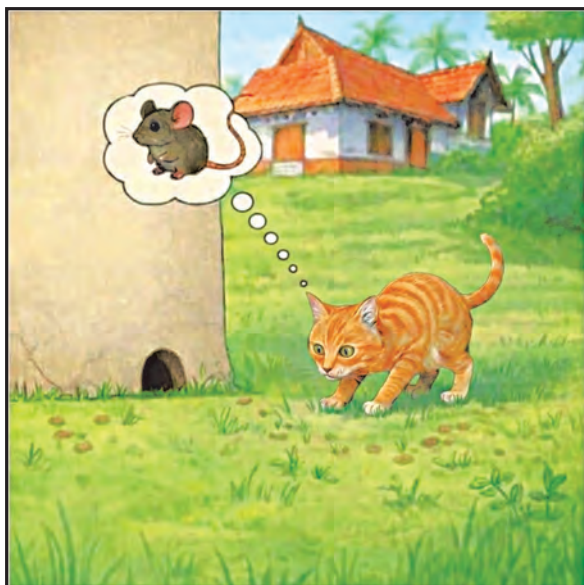
Observe



This girl became very weak during her illness. She got proper food (diet) she took rest and as a result, after a few days, she recovered. We need food to keep our body functioning properly. Like us, all living beings need food.



Can you Tell?



- Why is the cat lurking?
- Where are the eggs of the bird? Why is the cat looking at the nest?

Why do you need a house?

We suffer from severe cold, biting wind, scorching heat and heavy rain. To protect ourselves from them, we stay indoors. Like us, animals also need homes. Some animals build shelters for themselves while some animals seek shelter in safe places in the area.



Animals and birds that build shelters for themselves

You must have seen the nests of various birds. The nest built by a bird is a shelter it has built for itself. Birds need a safe place to lay their eggs. Chicks hatch from the eggs. Some animals eat the chicks. The chicks are not strong enough to protect themselves. Birds build nests because nests protect their chicks. Birds choose high and convenient places for their nests.

Some insects also build their own homes. Bees build their hives in trees, in the crevices of mountains. Rats and Bandicoot rats live in burrows underground.



Perform the activity

List the animals and birds that seek shelter in nature in your area and write down their shelter.

A natural shelter	Animals and birds



Observe



Some people keep animals. They build shelters for the animals. Tell me what kind of shelter the animals have in the picture above.



What to do?

A sparrow has built a nest near the window of Amit's house. What should be done to prevent damage to the nest?



Can you Tell?

- Do all living things eat the same type of food?
- Will a cat eat grass just because a cow eats grass?
- Just because a cat likes to eat mice, will a goat like to eat mice?

Every living being needs food. But everyone's food is not the same. Some living beings eat leaves and grass from forest trees. Some predators eat small animals. Plants make their own food.



Perform the activity

Get pictures of different bird nests you have seen in your surroundings and write the information in two or three sentences.



A shelter is a safe place to escape from dangers and a place to protect from heat, wind and rain. Humans live in groups. There are generally two types of human shelters: urban houses and rural houses.

Observe the picture above and answer the questions below.

- 1) Houses in rural area are made up of which material?
- 2) Houses in urban area made up of which material?



Let's find out

Rural Houses:

In Maharashtra, most of the population lives in rural areas. They have to build houses using the available resources in the surrounding area. Also, the design of the houses is influenced by the weather, rainfall and geographical conditions. For example, in the high rainfall region of Konkan, there are houses with sloping roofs. In the plateau regions of the state with average rainfall, houses are thatched and made of mud. In tribal areas like Vidarbha and Nandurbar in the state, houses with thatched roofs are found. Generally, rural houses are made of mud, bamboo, grass, stone and coconut leaves. Most of these houses are kutcha houses.



Urban Houses:

In recent times, cities are growing at a tremendous pace. Urban areas are densely populated. There are multi-storey buildings in cities. These houses are generally of durable type.

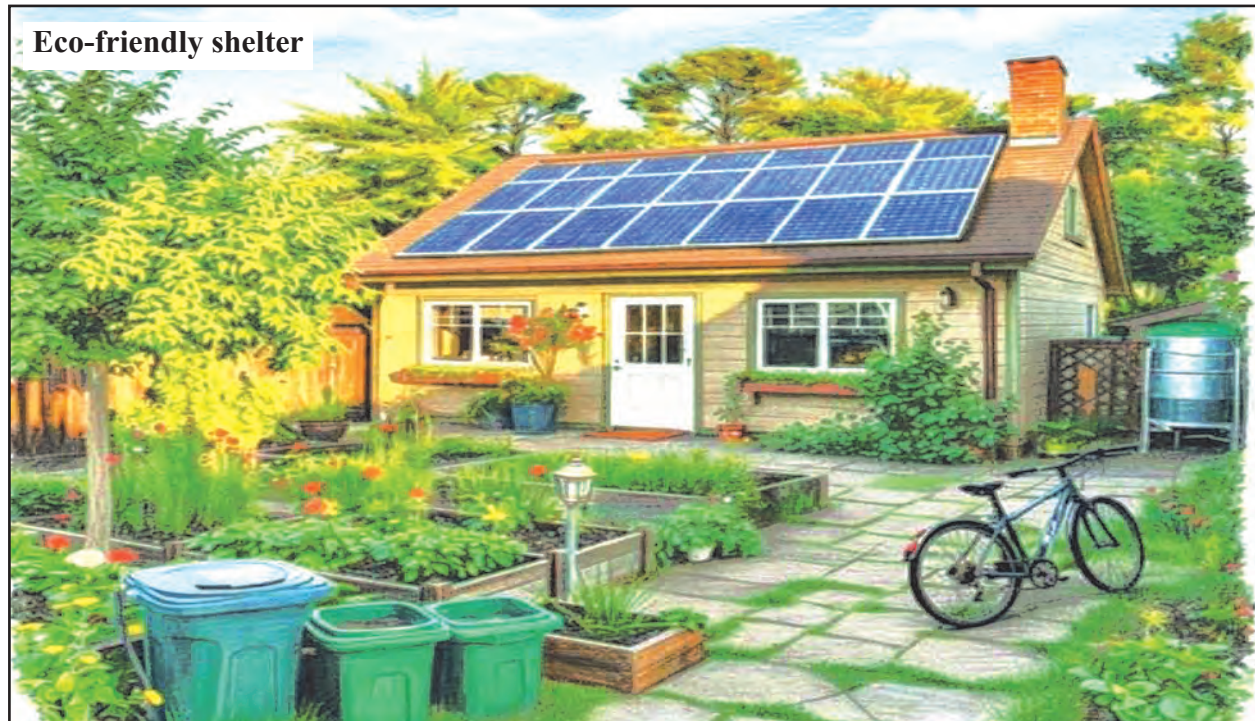
Materials like cement, sand, concrete, iron, bricks, steel, etc. are used to build houses. Urban houses are equipped with amenities.

Houses in rural areas are built using natural resources.





Let's find out



As the population increases, the number of settlements and houses also increase. The huge growth of urban settlements is becoming harmful to the environment. Most of the houses in rural areas are made from the materials available in the area. Soil, cow dung, bamboo, wood, grass, and stone are used in this.

Eco-friendly homes: The material used in building these houses does not harm the environment. They take care of environment. Their characteristics are-

- 1) Natural materials are used more in an eco-friendly home.
- 2) These homes make extensive use of non-conventional energy sources such as wind energy, solar energy, and biogas.
- 3) Water is recycled.
- 4) Items that are waste are recycled.
- 5) Such houses are designed to allow natural light and air to circulate.



Discuss

Divide students into two groups and discuss the characteristics of eco-friendly homes.



We have studied this



- The processes that occur on food as it travels from the farm to the home.
- The relationship between food and lifestyle of people in different regions.
- The role of the farmer in food production.
- Food storage methods and food preparation methods.
- The side effects of contaminated food.
- The food and shelter of animals and birds.
- The differences between types of shelters and eco-friendly shelters.



Let's Revise

(A) Write the correct word in the blank.

- (1) The farmer does as the first work in the field.
a) Threshing b) Farm preparation c) Winnowing d) weeding
- (2) crop is taken in heavy rainfall area.
a) Rice b) Jowar c) *Bajara* d) Wheat
- (3) Technology is used to increase agricultural production.
a) Traditional b) Modern c) Vedic d) Natural
- (4) The energy required for smooth functioning of our body we get from
a) Food b) water c) air d) market

(B) Write the answers in one sentence.

- (1) What does agriculture mainly depend on?
- (2) What are the methods to increase agricultural production?
- (3) What are the methods of preparing food?
- (4) What is 'contaminated food'?

(C) Write short answers.

- (1) Write the characteristics of a healthy diet.
- (2) What measures are being taken to ensure food security throughout the year?

- (3) Write the importance of eco-friendly houses.
- (4) What are the effects of eating contaminated food on the body?
- (5) Write the benefits of organic farming.

(D) Complete the table.

The names of grains are given in the table below. Write the dishes prepared from those grains.

Grain	Dishes prepared
Ragi	
<i>Bajra</i>	
Gram	
Peanuts	

- (E) Discuss the importance of eco-friendly houses and list the issues.**
- (F) Today, everyone needs healthy food and shelter. Considering the increasing population, many physical diseases are being caused due to contaminated food intake. What can be done to prevent this?**
- (G) With the help of a teacher or parent, discuss the harm caused to humans and animals by eating food in plastic bags.**

Activity

- Find pictures of eco-friendly houses and write about them.
- List modern technologies for agricultural production and write information about them.
- With the help of the teacher, present a role-play based on the element of food processing.





Awareness is Safety



Raju and his family saw a terrible scene while returning from their village. Due to a landslide, the entire village was buried under soil. Houses, fields, trees everything was destroyed. This incident happened due to a natural calamity. Such calamities come suddenly and have a serious impact on people's lives.

Read the News

The Irshalwadi Tragedy



Raigad: July 19, 2023, proved to be a tragic day for the people of Irshalwadi in Khalapur taluka. While Irshalwadi was fast asleep, a shocking incident

occurred. Due to extreme rainfall, a landslide suddenly occurred around eleven o'clock at night. Many people died in it. Some survived the incident. The bodies of those who died in this tragedy were buried under the piles of soil on the hill.



Think

Why did this tragedy happen?

Let's Understand

A **disaster** means a sudden calamity that causes immense damage. Due to disasters, there is a large-scale loss of human life and financial loss.

Disasters is either natural or man-made. Disaster that occurs naturally is called '**Natural Disaster**'. These include floods, earthquakes, droughts,

storms, hailstorms, heavy rainfall and landslides etc. Disaster that occurs due to human errors and greed, which cause immense damage to nature, is called '**man-made disaster**'. These include Fire, Accidents, War and Pollution etc.

Let's Understand

A drought refers to a water shortage caused by insufficient rainfall. During such times people, animals and agriculture do not get enough water.

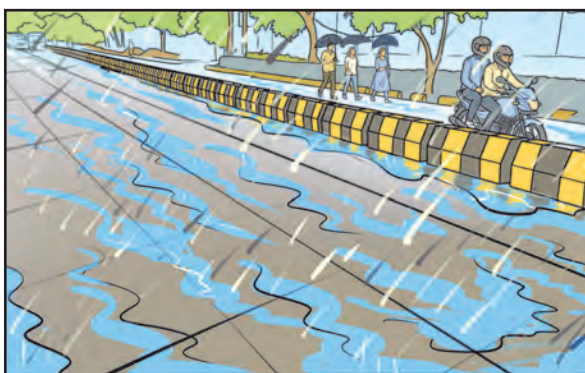
Causes of Drought



Lack of Rain or rain not falling on time



Deforestation



Water not percolating into the ground due to concretization



Wastage of water

Effects of Drought



Proper planning of water is very necessary to overcome drought. For example, water can be stored by building lakes, bunds and dams. Water is saved by using drip and sprinkler irrigation for crops. Rainwater harvesting, planting trees and growing crops that require less water are also some of the ways of overcoming drought.

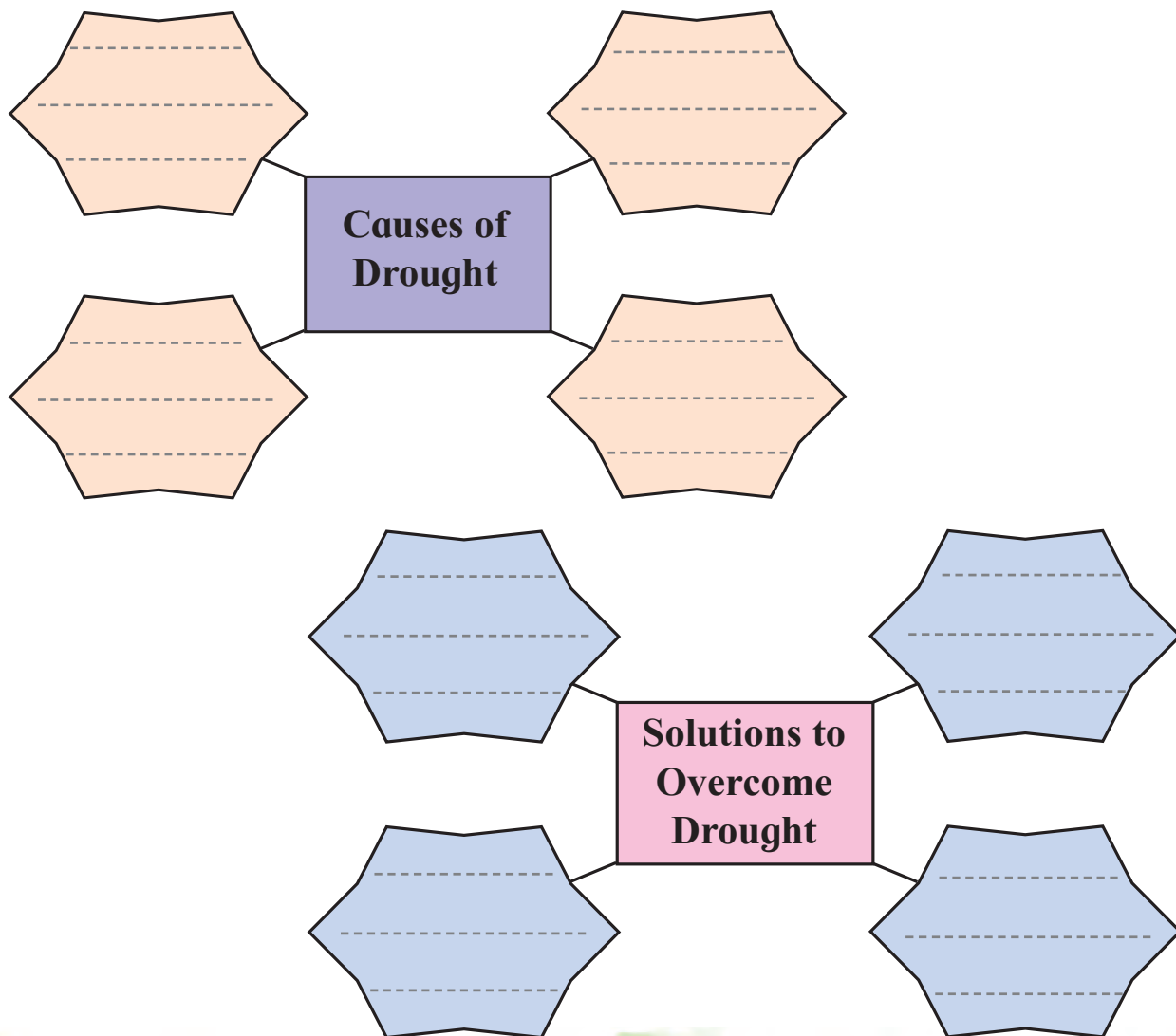


Drip Irrigation



Sprinkler Irrigation

Write the information in the blank spaces.





Observe

Read the news, understand it, and write the answers.

Breaking News

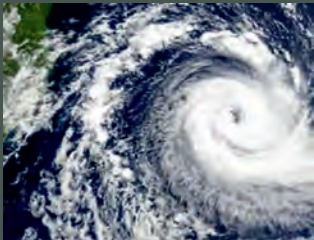
Warning of weather department

Risk of cyclone

Alert issued for Raigad, Ratnagiri, and Sindhudurg districts. An appeal to fishermen not to go into the sea. Advice to citizens to stay safe.

Live Broadcast

(Alert issued to Raigad, Ratnagiri, and Sindhudurg districts.....)



- (1) What warning has the weather department given?
- (2) Which districts have the danger notice (alert) been issued?
- (3) What appeal has been made to the fishermen?
- (4) What care have citizens been asked to take?
- (5) What solution will you suggest to tackle the electricity failure and water shortage in the village due to cyclone?

|| Let's Understand.

During a cyclone at sea, winds blow at very high speed. Heavy rainfall and high waves are created in the sea.



Effects of a Cyclone

To protect from a cyclone, it is very important to listen to messages given by the weather department, stay in a safe place, and avoid unnecessary travel. The government keeps an emergency system ready to help people.

Excessive Rain

Excessive rain means very heavy rainfall. Because of it, rivers and streams overflow, floods occur, a great damage is caused to houses, crops, trees, animals etc. Therefore, we should move to a safe or high place along with animals.



Think

- What are the effects of excessive rain on the surrounding?
- What can we do to reduce the damage caused by excessive rain?

Let's understand

Understand the meaning of the following safety symbols.

Draw different safety symbols you have seen other than this in your notebook. Colour and understand their meaning.



Try this

Let's prepare a life-saving bag. If a disaster occurs in our area or home, we should leave from home. Prepare a list of things you should take with you. Pack all those things in a bag. For example, a water bottle, dry snacks, a torch, regular medicines etc.



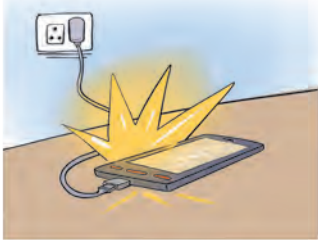


Do you know?

‘National Disaster Management Day’ is celebrated every year on October 13th. This practice started in 1989. On this day, guidance is provided on how to protect oneself and others during emergency situations.

Raju learned what precautions to take during natural disasters. But a question arose in his mind “Can such incidents happen inside the home too?” If you feel the same as Raju, let’s see what disasters can occur in the home due to our mistakes.

Observe the following pictures and discuss.

		
Catching Fire	Short Circuit	Gas Leakage
		
Mobile Explosion	Accident	Improper use of Electric Heater

Apart from these, make a list of disasters that happen in the home.

To stay safe at home, it is very important to take care of ourselves. Our home is the safest place, but for that, we need to take care of certain things.



Caution

- **Precautions in Kitchen :** Never play near the gas stove when it is in use. Always turn off the stove button and the regulator whenever not in use.



- **Don't Play with Fire:** Items like candles, lighters, or matchsticks are dangerous. Do not play with them.



- **Precautions to be taken while handling Electrical Appliances:** Do not touch broken electrical wires or damaged switches. Never touch electrical appliances with wet hands. Adults should use rubber gloves and slippers while repairing electrical appliances.

- **Stay Away from Dangerous Chemicals:** Do not play with medicines, pesticides, or chemicals used for cleaning found in the house. If you accidentally touch them, wash your hands thoroughly with soap.



- **Care at Heights:** Do not rush when climbing up or down stairs; walk slowly. Hold the railing for support. Avoid leaning out of windows or off balconies and avoid going to the terrace alone.



- Use the elevator only with an adult.

We can stay safe in our homes by taking care of these little things. Staying safe means taking care of ourselves and our family.

The picture shows safety measures for electricity and actions that can cause danger from electricity. Mark safe activities with ☒ and dangerous activities with ☐.

 ☐	 ☐	 ☐
 ☐	 ☐	 ☐

Instruction for teacher : Ask students to give a presentation on precautions to avoid disasters at home.



Think

Write what you will do in the following situations.

 	 	
--	---	--

Let's Become Safety Guards.

Inspect your home or school. Identify the dangerous places there. Note them as shown below.

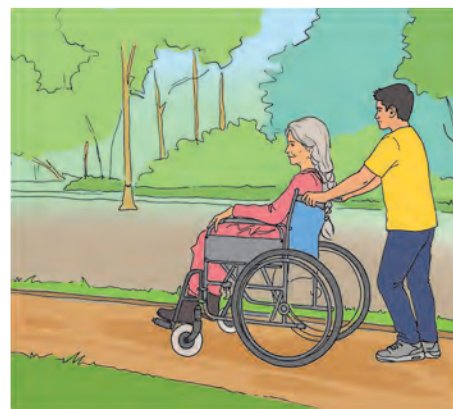
Sr. No.	Dangerous places
1	A leaking tap, with water accumulated on the floor.
2	Toys lying on the stairs
3	
4	
5	
6	
7	

Tell in class and family the information about dangerous places and their effects.

Let's Help

We should take care of ourselves along with young children, elderly people like grandparents and differently abled persons.

- Tell young children to play in a safe place (Away from roads or stairs).
- Help elder people like grandparents while walking or walk with them.



- Help specially-abled friends to reach their classroom and to pick up their books.
- Help small children and specially-abled persons to cross the road.



|| *Let's Play a Game*

Vision-Friend

Let's become 'Vision-Friend' to understand how to help visually impaired people.

- (1) Form pairs with your friends.
- (2) Tie a light strip over the eyes of one student in each pair (so that he / she cannot see anything). This student should play the role of a visually impaired person. The other student should act as the 'Vision-Friend'.
- (3) The 'Vision-Friend' should wander the partner safely around the classroom by holding hand or giving him support. While wandering, it is his/her responsibility to avoid tables, chairs, and other obstacles.
- (4) The 'Vision-Friend' should provide proper guidance to the partner by giving instructions like 'turn right', 'take one step forward', or 'there is a chalk below now; cross it and move ahead'.
- (5) After five minutes, both should swap their roles. Now the student who was the 'Vision-Friend' should blindfold himself/herself and experience it.

Just as we take care of our family, friends, and other close ones and keep them safe, it is also our responsibility to take care of and protect the environment around us.

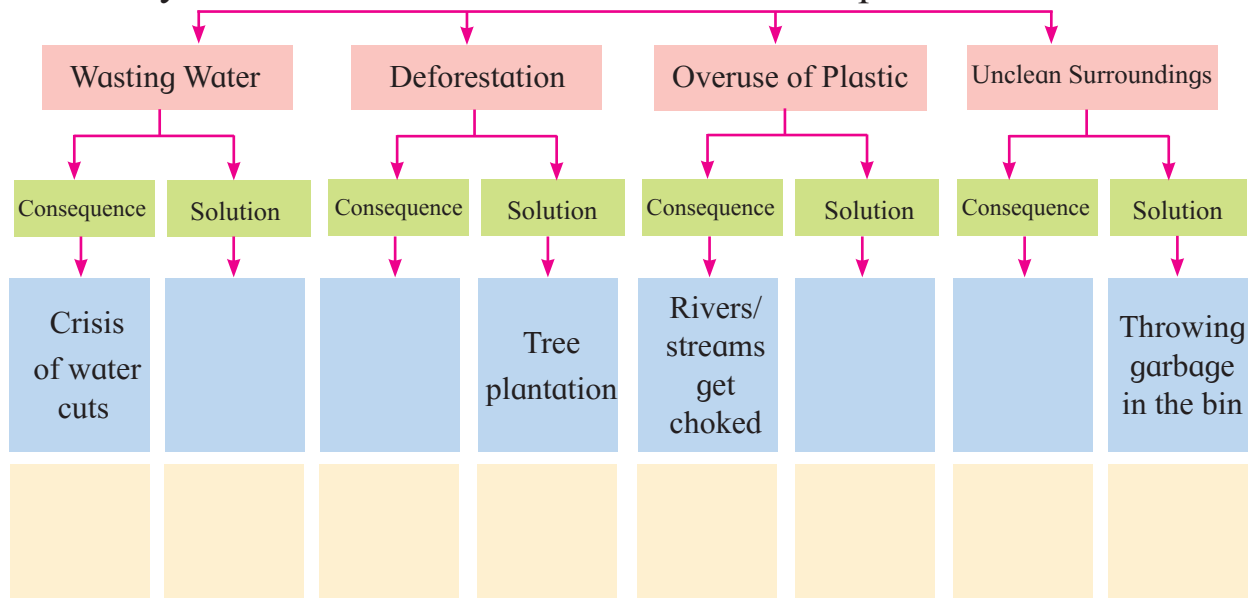
Like our homes, we must keep rivers, streams, and public places clean. We must protect the environment by planting trees, saving water, and reducing waste. If any damage occurs to the environment (for example, increased pollution), it is our responsibility to try to reduce it and improve the environment.

In short, instead of considering the environment as something separate, it should be considered a part of our family. Our lives and the health of the environment depend on each other. Therefore, it is important to protect the environment just like our loved ones.



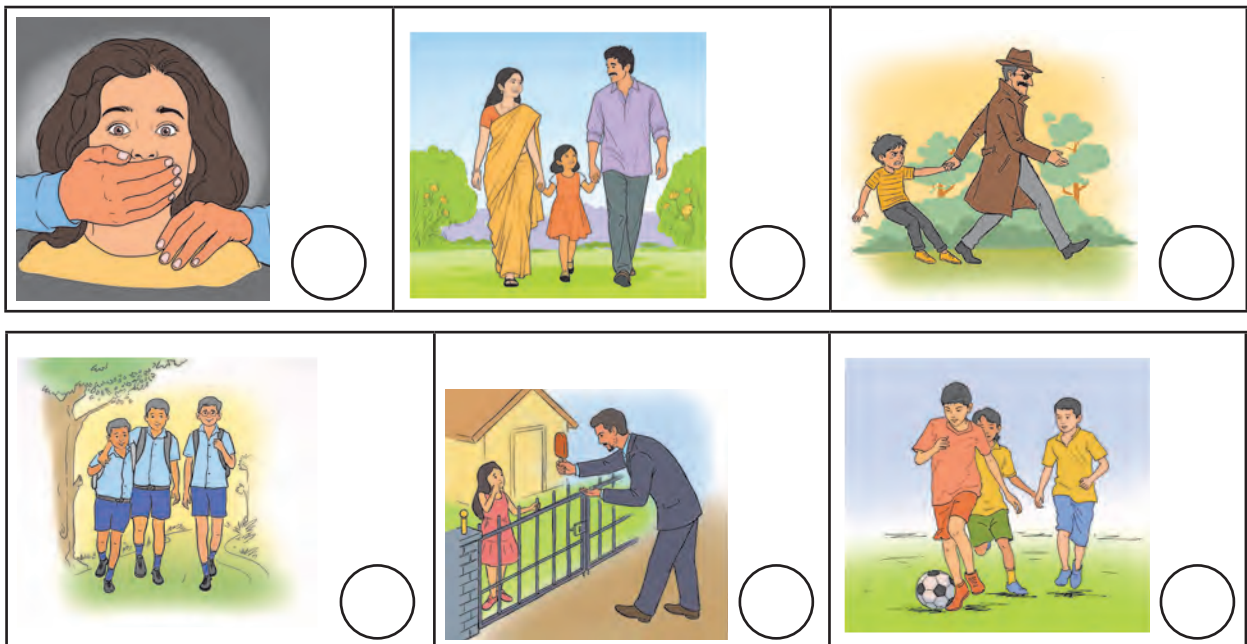
Think

Write in your notebook what all we can do to keep our Earth safe.



Let's Understand.

Observe the following situations and identify which you feel safe or unsafe. Colour the ○ for a safe situation green and the ○ for an unsafe situation red.



Self-safety is our first and most important responsibility. Let's remember some important things that will help us stay safe from strangers.

If an unknown person tries to give you snacks or any object, say “**No**” immediately! There is no need to talk to them or even stay near them. Leave that place at once.

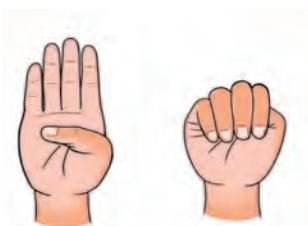


If someone tries to catch or pull you by force, do not be afraid.



At such a time, do not remain quiet; instead, shout loudly to draw everyone's attention to you. For example, “**Help! Let me go! Save me!**” At the same time, struggle with your hands, kick and push to escape the grip. Once you are free, run immediately to a

crowded place, a shop, or a police station. Tell your parents or teachers about the incident immediately. They will never be angry with you; in fact, they will be proud of you.



If it is not possible to shout for help in some situations, use hand signals quietly and secretly, or write a note saying “**SOS!**” (Save Our Soul) or “**Save me.!**” Remember, a good person takes care of the environment, themselves, and the people close to them. Such good habits keep us healthy and happy.



Do You Know?

You can get immediate help by calling on the following numbers:

- * Police Help - 100
- * Fire Brigade - 101
- * Ambulance - 108/ 102
- * Women & Child Care Help - 181
- * Child helpline no - 1098
- * Disaster Management Cell - 1077



We have studied this



- A disaster is a calamity that occurs suddenly and causes immense damage.
- Disasters that occur naturally are called 'natural disasters'.
- Disasters that occur due to human errors and greed, causing immense damage to nature, are called 'man-made disasters'.
- Precautions must be taken for certain things to stay safe from disasters occurring at home.
- Along with ourselves, we should also take care of small children, grandparents and differently abled persons.
- Taking care of our environment and protecting it is our responsibility.
- Stay away from unknown persons.



Let's Revise

(A) ☐ the number of the correct option.

1. What is the most important identity of a disaster?

- (1) It comes with prior notice.
- (2) It happens in a limited space.
- (3) It only causes economic loss.
- (4) It occurs suddenly and causes immense damage.

2. What can cause a massive fire?

- (1) Due to keeping the doors of the house closed.
- (2) Only due to natural events.
- (3) Due to heavy rain.
- (4) Due to mistakes like leaving the gas on, short circuits, or burning garbage.

3. Which of the following things should be kept away from small children?

- (1) Pencil and eraser.
- (2) Medicines, insecticides and chemicals.
- (3) Toys and books.
- (4) Water bottle.

4. Why is it important to avoid the use of plastic?

- (1) It pollutes the environment and can spread diseases.
- (2) It is not easily available.
- (3) It is heavy.
- (4) It is very expensive.

(B) Write answers to the following questions.

- (1) What is meant by a man-made disaster?
- (2) Write two causes of short circuits.
- (3) Why should we give a seat to 'grandparents' while we are travelling in a bus?

(C) Think and write the answers.

- (1) Some students in your class bring their tiffin in a plastic bag every day. What new ideas would you suggest them to avoid the use of plastic?
- (2) Suddenly someone touches you in a way that makes you feel uneasy. What will be your first reaction at such a time and why?
- (3) Radha loves chocolates very much. An unknown person gives her a chocolate outside the school. What should Radha do? Why?
- (4) While Sameer was at home, his younger sister got a small injury. Write how he should provide first aid.

(D) Prepare a Safety Rules Bookmark.

- (1) Take a rectangular piece of paper.
- (2) Write safety rules to be followed at different places on it and draw pictures. For example: On the road-cross the road using the zebra crossing, follow the signal.
- (3) Make the bookmark attractive by colouring it with coloured sketch pens, using stickers or decorating it.
- (4) Gift these bookmarks to friends. This will help them remember the safety rules.

(E) Come, let's have some fun

Swaraj wants to go to the swimming pool to practice swimming. Help him to find the necessary equipment.



Activity

Choose any one disaster. Based on it, prepare a slogan or an emergency symbol and present it in the class.



8 My Clean Surroundings



Observe

Observe the following picture. Discuss based on the incidents in the picture.



Think

What will happen if garbage is not reduced?

If garbage is left lying around us like this, a foul smell will spread everywhere. Diseases spread because houseflies sit on the garbage and carry germs. Living in such places is harmful to health. Keeping our surroundings clean is our responsibility. Everyone should try to ensure that garbage is not generated. Even so, the garbage that is produced must be disposed of in the proper way. Garbage should be collected and segregated properly before disposal.

|| *Let's Understand*

Waste such as vegetable stalks, dry leaves, fruit peels and eggshells that rot and decompose is called '**Wet Waste**'. A green dustbin is used for this type of waste.

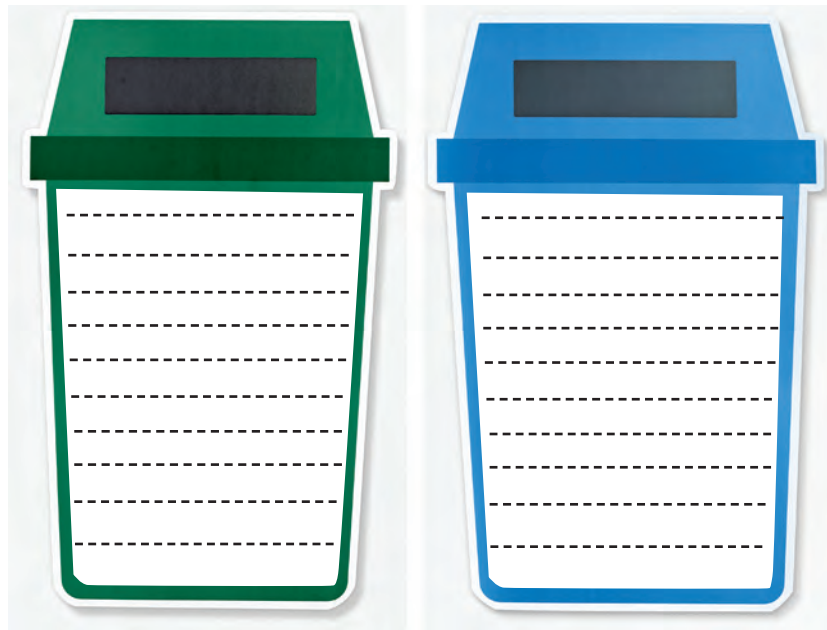
Waste such as nails, plastic toys, pieces of metal sheets and glass pieces that do not rot, do not decompose, stay as they are for many years they is called '**Dry Waste**'. A blue dustbin is used for this type of waste.



Try This

Identify the wet and dry waste from the list below. Write their names on the correct dustbin.

(Vegetable stalks, plastic bags, wafer wrappers, fruit peels, peanut shells, plastic bottles, crumpled paper, cotton wicks, cardboard, fruit seeds, old toothbrush, damaged charger)



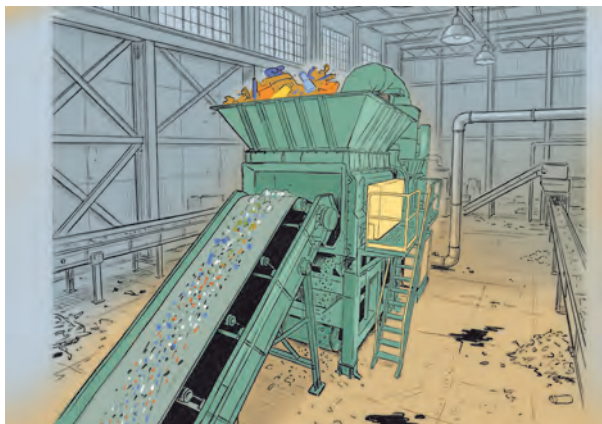
Think

What will you do with the wet and dry waste produced at home instead of giving it to the garbage truck?

Wet and dry waste collected in large amount are kept separate. Wet waste is decomposed to prepare compost fertilizer. Dry waste is sent to factories to create new products from it.

Let's Understand

Garbage truck collects both wet and dry waste, what happens to this waste afterwards?



Plastic Recycling Project



Compost Fertilizer Production

Compost Fertilizer – Wet waste rots in a few days and fertilizer is formed. It is called compost fertilizer. By decomposing wet waste from our home and school, we can make compost fertilizer from it. Come on, let us prepare compost fertilizer.

Let us make compost fertilizer

Dig a pit with the help of teacher in the corner of school or keep a large container



Put wet waste in it every day.



Put a little soil and wet waste in it.



Sprinkle water on it and cover it.

After 4–6 weeks, the compost fertilizer will be ready. That can be used for plants in school garden.





Do You Know?

Farmers have been making cow dung manure for a very long time. They use animal waste and leftover fodder from cattle sheds to make this manure. This manure is added to the soil to help crops grow strong and healthy.

Let's Understand

Every day dry waste is produced in our homes, surroundings and schools. If we do not dispose of this waste properly, heaps of waste will accumulate in the surroundings. Therefore, reducing waste (Reduce), reusing (Reuse) and recycling (Recycle) these 3R are very important.

Reduce

Use products that will generate less waste. For example, instead of using plastic or paper cup use steel cup, use cloth handkerchief instead of tissue paper. Don't throw the pencil if it becomes small, use it upto last.

Reuse

Use old things again. For example, use blank paper from your notebook for rough work, to draw pictures. Keep toys or pencil in empty icecream box.

Recycle

Make new things from dry waste such as plastic, paper, nails, pins. For example- Old news papers are recycled to produce new paper. New plastic items are made from used plastic bottles and containers.

By following 3R mentioned above waste is reduced. The surroundings remain clean and beautiful. Plants and animals stay safe.



Always Remember

- By categorizing waste into wet and dry, it can be converted back into useful new items.
- Buy toys, objects, footwear, clothes, etc., only as per your need. This will prevent the generation of waste on a large scale. Items that are not in use but are in good condition should be given to needy.



Try This

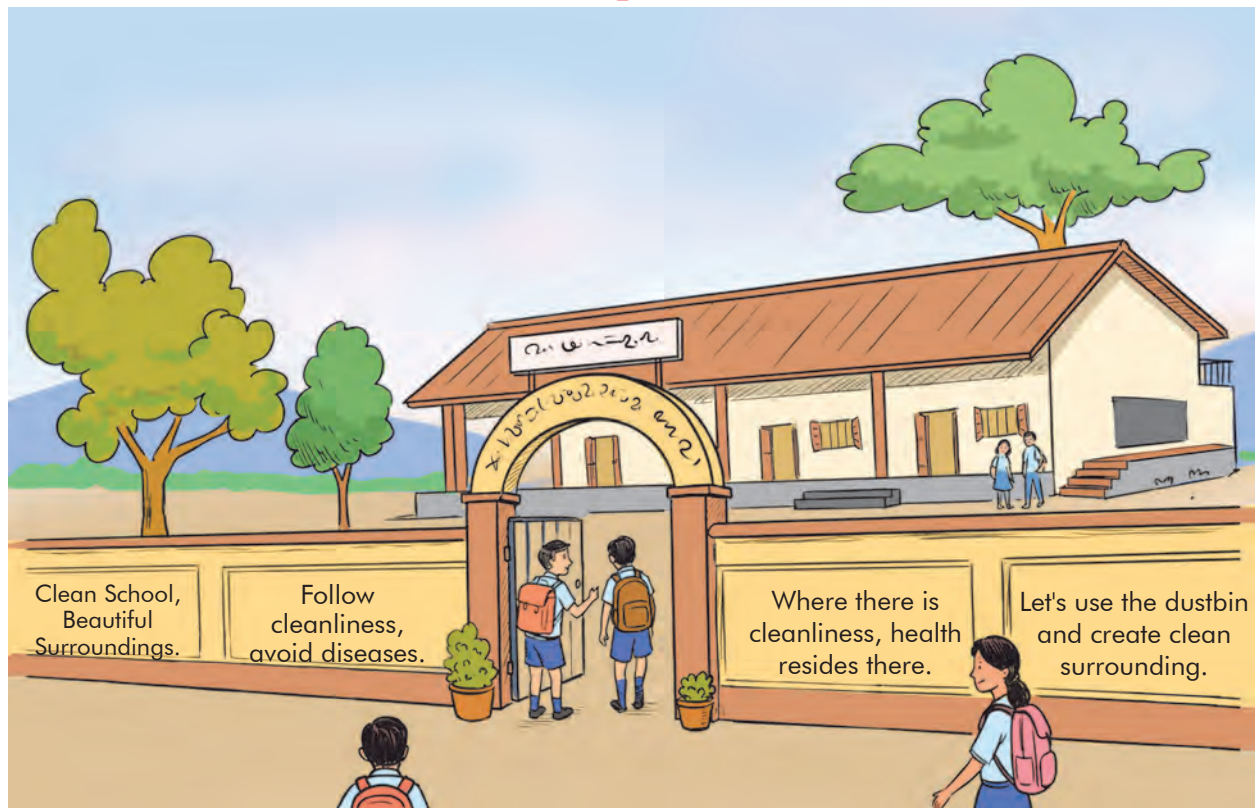
- (1) Make a greeting card by pasting different shapes of pencil shavings formed while sharpening a pencil.
- (2) Create a picture by pasting paper balls of various shapes.

|| Clean School, My Responsibility

It is very important for all of us together to keep our surroundings and school clean. Let's start the preparation to clean the school and the school premises.



Let's make the school and school premises clean and beautiful.



Always Remember

- Always throw garbage in the proper dustbin only.
- Do not throw paper, pieces of erasers or pencil shavings on the floor in the classroom.
- Throw leftover food from your tiffin into the green dustbin only.
- Do not scribble or draw pictures on the walls, tables, or chairs.
- Do not waste water. If a tap is left running, close it immediately.
- Follow the rules of cleanliness. Do not feel ashamed to do cleaning work.

Instruction for teachers - Organize a “Clean Classroom” competition.



We have studied this



- * Waste that decomposes/rots and turns into compost is called wet waste.
- * A green dustbin is used to store wet waste.
- * Waste that does not decompose or rot and remains as it is for many years is called dry waste.

- * A blue dustbin is used to store dry waste.
- * The fertilizer produced from decomposing wet waste is called compost fertilizer.
- * By separating waste into wet and dry categories, it can be converted into new reusable items.
- * If cleanliness is maintained, our surroundings look clean and beautiful.



Let's Revise

(A) Answer the following questions.

- (1) What is dry waste?
- (2) What is compost fertilizer?
- (3) What will you do to keep your house clean?

(B) Find the words in the word puzzle related to the following words. Draw a box around them and write those words in the given space.

- (1) Wet waste
- (2) Blue dustbin
- (3) My school
- (4) Fertilizer obtained from wet waste

c	o	m	p	o	s	t
l	g	z	a	d	x	b
e	r	a	p	p	l	e
a	e	n	e	q	a	k
n	n	g	r	a	s	s
h	b	g	l	a	s	s
k	i	f	r	u	i	t
t	n	a	i	l	m	w

(C) Classify the following items into Wet Waste and Dry Waste.

Broken bangle pieces, tree leaves, nails, paper, spoiled food, pieces of chalk, empty pen refill, pen cap, banana peels.

(D) Observe the picture given below. What will you do to keep the surroundings clean?



(E) Mark the good habits with ☒ and the bad habits with ☐.

Sr. No.	Habit	Mark
1	Putting vegetable stalks and fruit peels in the green dustbin.	
2	Throwing an empty plastic water bottle on the roadside while on a trip.	
3	Taking a cloth bag from home when going to the market.	
4	Putting broken plastic toys in the green dustbin.	
5	Tying spoiled vegetables in a plastic bag and putting them in the green dustbin.	

(F) Write the meaning of 3R in your own words.

Activity

Create “Best out of Waste” items. Compare the items made by your friends based on their usefulness and neatness. Note this in your notebook.



In the Wonderful World of Animals.



Observe



Where have you seen the things shown in the picture?

Arya, Yasmin, Sameer, and Rajveer are ready to go to the hill with their Ramatai. Today, they are going to the hill and will have a great time roaming around all day. Come, let's go to the hill with them too!

Ramatai asked the children to make a note of the animals seen there.

However, Sameer made some mistakes while making the notes. Find those mistakes, correct them, and write them down.

1)	Animals that feed milk to the young ones	- Monkey, Dog, Bat
2)	Birds	- Butterfly, Sparrow, parrot
3)	Insects	- Dragonfly, praying mantis, spider
4)	Animals with eight legs	- scorpion, dung beetle
5)	Animals with many legs	- Ant, centipede, millipede

Ramatai said, “Every tree, animal, and insect has its own unique characteristics. To understand the finer details, it is necessary to observe them calmly.” Ramatai then asked the children to observe birds based on the following points:

Observation Points

- Name of the Bird: Kingfisher (*Khandya*)
- Date: July 3
- Time: 8:00 AM
- Size: Larger than a sparrow and smaller than a crow
- Beak Shape: Long and thick (stout)
- Beak Colour: Reddish-pink
- Colour of Head: Brown
- Colour of Neck area: White
- Colour of Back: Blue
- Colour of Feet: Reddish-pink
- Structure of Feet: Short legs
- What was the bird doing at the time of observation?: The bird was sitting on a branch eating a fish..



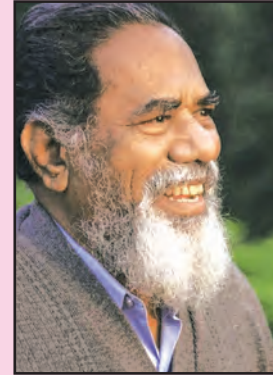
Write

Observe the birds in your surroundings. Write down information based on the observation points mentioned above. Draw their pictures and colour them.



Do You Know?

Maruti Chittampalli was an internationally renowned bird expert and wildlife researcher. He made significant contributions to the development of Karnala Bird Sanctuary, Navegaon National Park, Nagzira Wildlife Sanctuary and the Melghat Tiger Project. The world of birds was very close subject to his heart. Because of this, he became widely known as the **Pakshiveda Manus**. He authored the book Pakshikosh. He is affectionately called the 'Aranyarushi'.



Ramatai asked, "Which body parts are the same in all birds?" Rajveer replied, "Beak, legs, wings, feathers, etc." Ramatai said, "But their food, habitats and ways of flying are different." The eagle flies very high in the sky. The sparrow and pigeon fly at lower heights. To gather more information like this, one must observe birds and insects properly. Various types of specimens must be collected. However, there is one rule you must always follow, never touch birds, eggs, nests, small insects. To make a collection, use only the specimens that have fallen on the ground.

Discuss the unique features of each bird given below.



Purple Sunbird



Spot-billed Duck



Shikra



Baya Weaver

|| Let's Understand

Various types of insects are found around us. Some live on land, some on trees, some deep in the soil, and some live in water. Even though insects are small in size, their numbers are vast, and they are important for keeping the environment clean.



Insects like termites help make soil from the dried parts of plants by decomposing them.



Many insects help plants in the process of producing fruits from flowers.



Insects are food for many birds and animals.

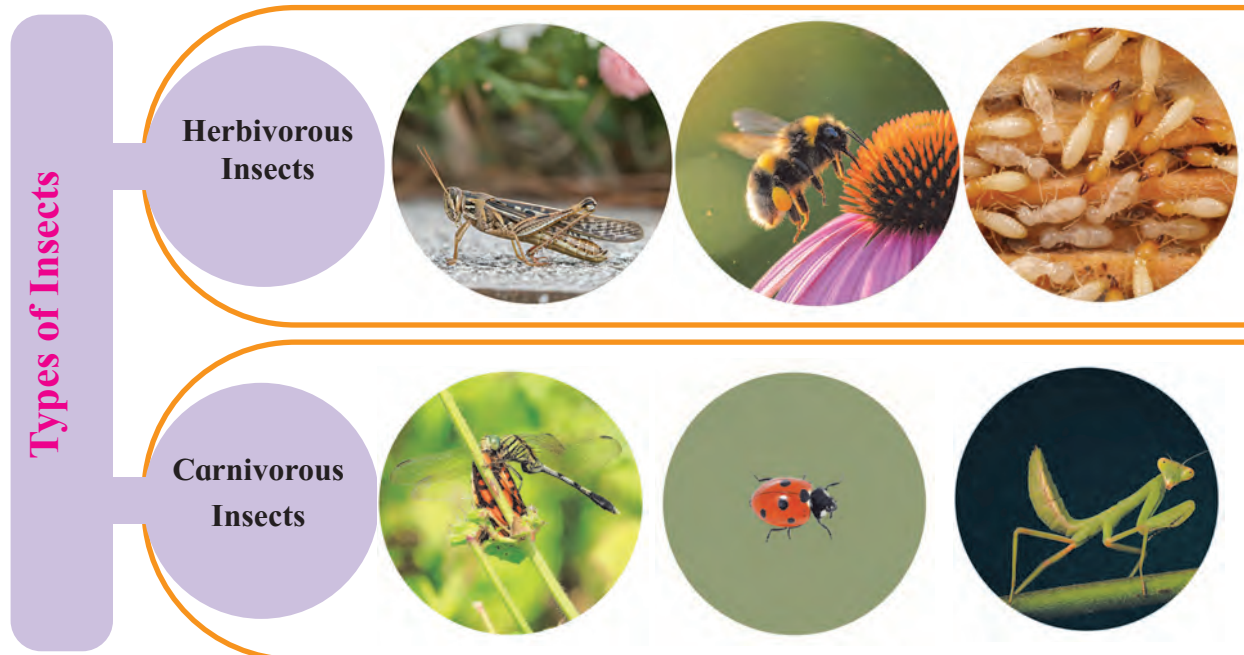


Do You Know?

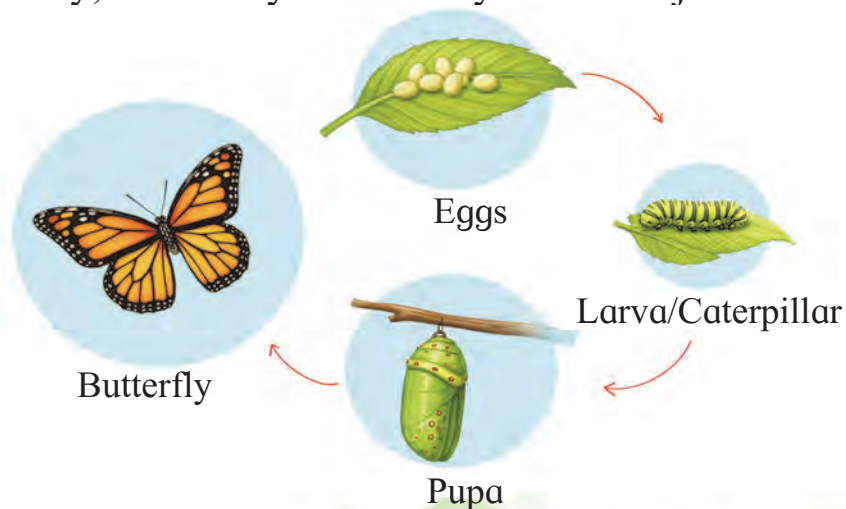
The Doctor of honey bee – V.J. Joseph from Kerala took training in honeybee keeping. However, he noticed that honeybees fall very ill during the rainy season. Therefore, after conducting experiments for 10 years, he discovered a medicine for this illness. For this achievement, he was honored with a national award by the 'National Innovation Foundation'.



Arya saw many half-eaten leaves on a tree. She asked, “Tai, who has eaten these leaves?”. Ramatai replied, “Many insects live by eating the leaves, flowers, fruits, roots of trees. On the other hand, some insects live by eating these herbivorous insects”.



Yasmin said, “Tai, look what I found! What is this?”. Tai replied, “Oh wow! These are butterfly eggs”. Rajveer asked, “Do butterflies lay eggs?”. Ramatai said, “Not just butterflies, but all insects, birds, reptiles, fish, and frogs hatch from eggs; therefore, they are called **oviparous**. Whereas humans, cats, dogs, cows, donkeys give birth to young ones; therefore, they are called **viviparous**”. Arya said, “Tai, I like fireflies very much. Does a firefly also lay eggs like this?”. Ramatai replied, “Yes! Just like a butterfly, the female firefly lays eggs. The life cycle of a firefly is like that of a butterfly; the life cycle of many insects is just like this”



Rajveer said, “Wow Tai! Now I have really started to like insects.” Yasmin said, “We get honey and wax from honeycombs.” Arya said, “I have heard that we get silk thread from silkworms.” Ramatai said, “Correct, there is one more substance that we get from the lac insect, it is called Lac (**Lakh**). Lac is used for making bangles and jewelry, as well as for sealing important documents.”



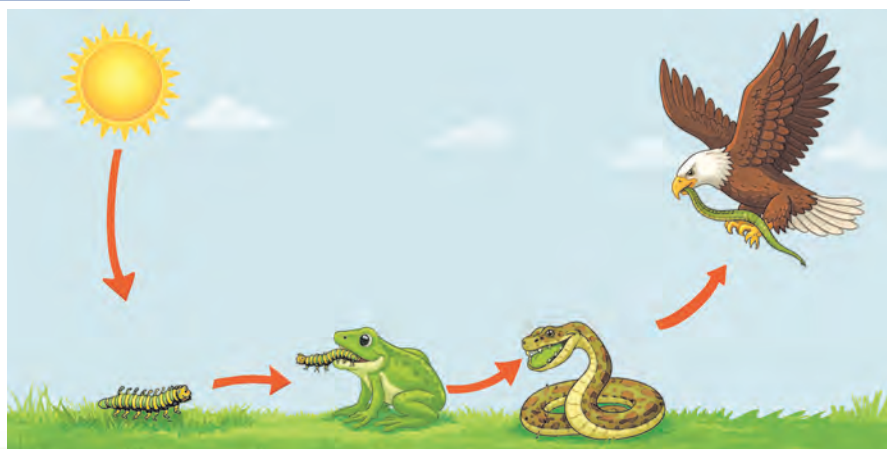
Think

What would happen if there were no insects in this world?

Sameer saw some birds circling in one place. Sameer said, “Tai, why are these birds circling in one place?” Tai said, “You asked a good question, all of you look carefully, what else do you see there?” Rajveer said, “Yes Tai, many insects are also visible there.” Sameer said, “So the birds have crowded there to eat these insects.” Tai said, “Tell, why would these insects have come here?” Aryan asked, “Have they come to get their food from the purple-coloured flowers?” Tai said, “Correct, all living things in nature are dependent on each other for food. Using sunlight, air, water, and nutrients from the soil, plants prepare their own food”. Grasshoppers, butterflies and many such insects, as well as large herbivorous animals like deer, cows and buffaloes, depend on plants for food. There are many other carnivorous animals that eat such herbivorous animals. For example, a caterpillar eats leaves. A frog eats the caterpillar. A snake eats the frog, while an eagle eats the snake. A chain formed in this way is called a **food chain**.



Observe





Can you tell?

- (1) Which animals do you know that depend on plants for food and are found all around you?
- (2) Which birds do you know those who eat insects?
- (3) Name animals that eat only meat.
- (4) Name animals that eat both plants and animals.

Yasmin said, “Tai, when we came in the morning there weren’t these butterflies, now many butterflies are visible.” Tai said, “Correct, Yasmin, you have made a good observation, Many insects start their work as soon as the sun comes out in the morning.” Many birds start chirping very early in the morning. Birds like the Coppersmith Barbet sing in the afternoon; their ‘puk-puk-puk’ sound is heard many times during the afternoon. Animals like dogs, deer, cows and buffaloes go out during the day to find food. These animals are **diurnal**.

Animals like rabbits come out in the evening to find food. Before sleeping in the evening, birds chirp again. Many insects like moths come out after sunset. Bats go out at night and eat flying insects. Animals like foxes, wolves, owls, leopards, bats, pangolins, wild cats and various types of snakes in the forest are **nocturnal**.



Try this

Many sounds of nocturnal animals can be heard in the surrounding all around us at night. When the sounds of the T.V., mobile phone, and fan in our house are turned off, identify which sounds can be heard. Also identify the sounds coming from inside the house and from outside the house.

Arya said, “Tai, look how these tiny ants are carrying away an insect.” Tai said, “Look, this is possible because they all work together. Many animals live in groups. Birds fly in flocks, many fish swim together, elephants, deer, sheep, goats, and horses live in herds. Honeybees live in hives, while insects like ants and termites live together in thousands in anthills.”

Living in groups helps animals find food, take care of their young ones, recognize danger, and protect each other.





Observe

From the animals in the picture below, make two groups: animals that live alone and animals that live in groups.

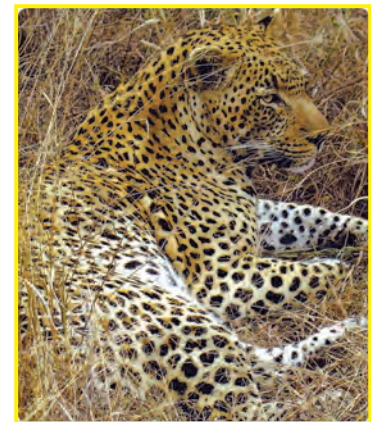


Animals that live alone

Animals that live in groups

Rajveer said, “Tai look, how is this stick moving?” Tai said, “This is an insect called a stick insect. Animals have the colour and shape of their bodies to match the environment in which they live. Many animals blend in with their environment in this way and protect themselves.”

Animals that blend with the environment





Can you tell?

- (1) How do other animals like leopards blend in with their surroundings?
- (2) Name animals you see around you that blend in with the environment.

Yasmin said, “Tai, I have a question, what would be the lifespan of insects, animals, birds?” Tai said, “The entire period of a living being from birth to death is called its 'lifespan'. Every animal's lifespan is different. Some animals live for a few hours, some for weeks, while some live for many years”.

The following table gives the approximate lifespan of some animals:

Butterfly	1 to 2 weeks	Peacock	10 to 25 years
Housefly	15 to 25 days	Wolf	13 to 14 years
Sparrow	3 to 5 years	Cat	13 to 20 years
Crow	6 to 10 years	Buffalo	15 to 20 years
Dog	10 to 14 years	Elephant	60 to 70 years
Tiger	10 to 15 years	Human	80 to 100 years



Do You Know?



State Bird: Hariyal



State Butterfly: Blue Mormon.



State Animal: Shekru



State Fish: Silver Pomfret.



Try this

Draw a picture of an insect you like. Paste that picture on a piece of cardboard. Decorate it using coloured beads, stones, seeds, etc. While doing this, take the following precautions:



Caution

- (1) Handle tools like scissors, knives, and needles carefully so that no injury occurs.
- (2) Use these tools under the supervision of elders.
- (3) After using these tools, put them back at their original place.



We have studied this



- Every animal and insect has its own characteristics.
- Insects are important for keeping the environment clean.
- Animals that hatch from eggs are called oviparous.
- Animals that give birth to young ones are called viviparous.
- Many insects have a life cycle of egg – larva – pupa – adult.
- Most insects are useful to other living beings.
- One living being depends on another for food; this is called a food chain.
- Some animals blend in with their surroundings due to the shape and colour of their bodies.
- Every animal has a different lifespan.



Let's Revise



(A) Fill in the blanks with the appropriate words from the brackets.

(carnivore, evening, herbivore)

- (1) Grasshoppers, honeybees and termites are insects.
- (2) Dragonflies, Ladybird beetles are insects.
- (3) Rabbits come out in the to find food.

(B) State whether the following actions are Right or Wrong.

- (1) Bringing a bird's nest home and keeping it as a decoration.
- (2) Keeping a bowl of water in the courtyard for birds during summer days.
- (3) Throwing a stone at a honeycomb.

(C) Who is my pair?

Group 'A'	Group 'B'
Honeybee	Colourful insects.
Dragonfly	Eat small insects.
Lac	Collects nectar.
Firefly	For sealing.
Butterfly	Light-emitting insect.

(D) Classify the following animals given in brackets.

(leopard, deer, turtle, fish, lizard, elephant, giraffe, parrot, ant, honeybee)

Animals
those live alone

.....

.....

.....

Animals
those live in
groups

.....

.....

.....

Oviparous

.....

.....

.....

.....

Viviparous

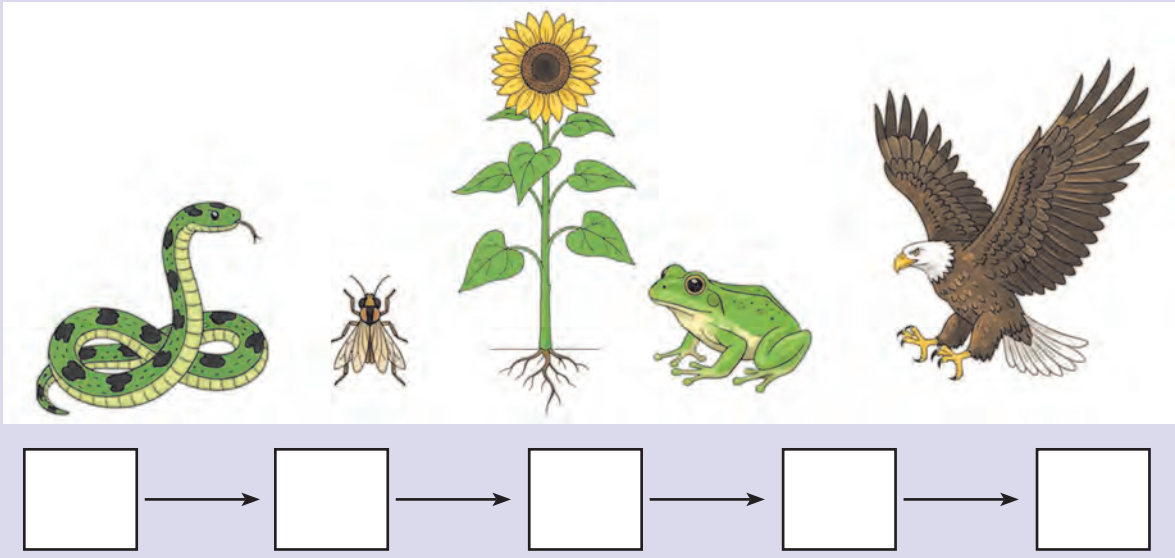
.....

.....

.....

(E) Write the uses of silkworms, honeybees and beetles.

(F) The food chain given below is in jumbled order. Give the correct numbers in the boxes to arrange it in order.



Below the organisms are five empty boxes for numbering, connected by arrows indicating the sequence of the food chain:

□ → □ → □ → □ → □

Activity



1. Create a picture of a bird using stamps/ impressions of different vegetables.

2. Collect feathers of various birds that you find and make a fan out of them.



10 Let's Learn the Map



Observe

Observe the picture below and answer the questions given below.



- How many rows and how many columns of boys and girls are there in the picture? Write it.
- In which row and column of children the student not in uniform is standing? Write it down.



Let's understand

As shown in picture, rows and columns are used to indicate the location of any object or person.



Let's find out

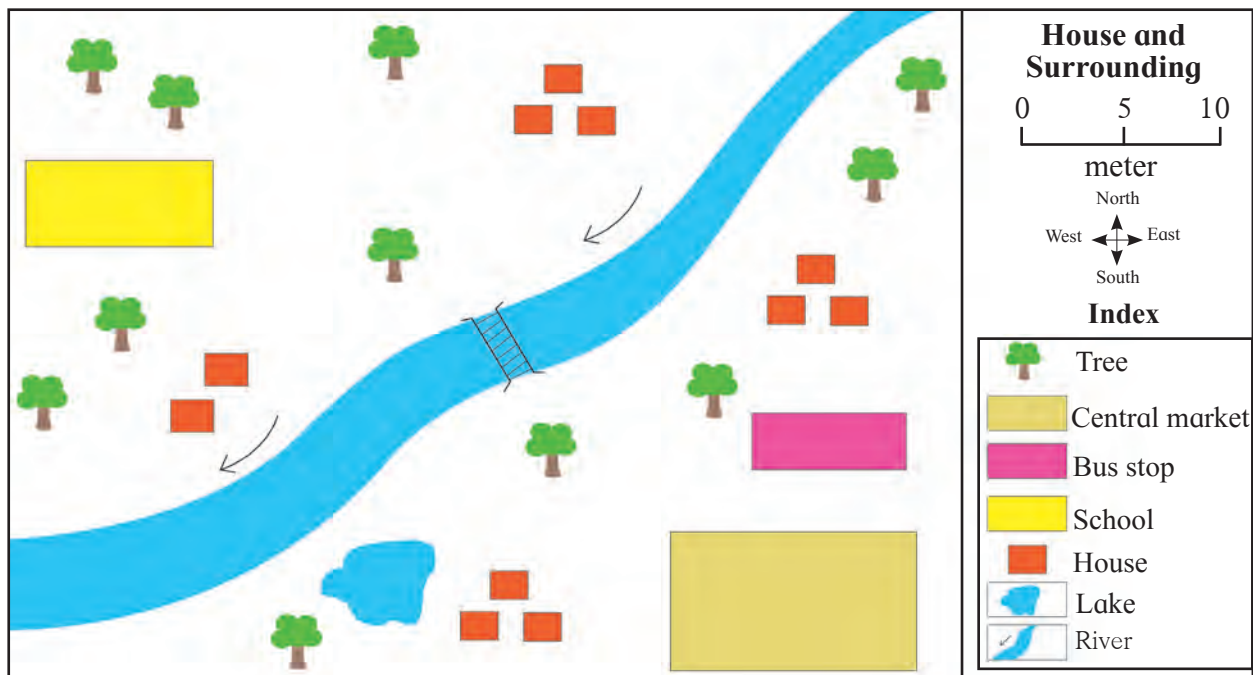
- A 'map' is a proportional drawing of the entire earth or a part of it. In making such a drawing, directions, conventional signs and symbols, projections and scales are used.

- A small picture of something is a 'sign'. For example, pictures of temples and mosques are used as signs. Some specific geometric shapes or English initials are used in mapping, they are called 'symbols'. For example, PO = Post Office, Spring = +



Perform the activity

A map of the house and the surrounding area is given below. Observe the signs and symbols in it.



Identify the natural and man-made items shown on the map. Classify them in the table below.

Natural items	Man-made items

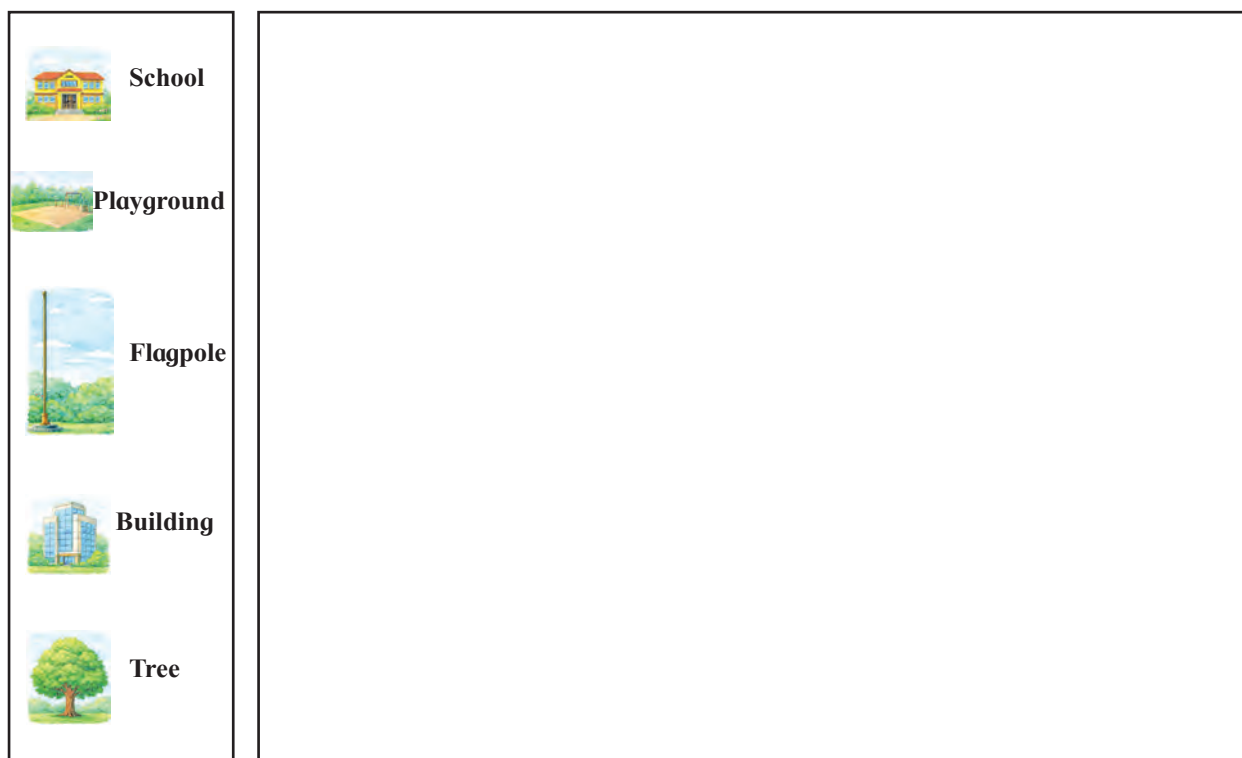


Perform the activity

With the help of your teacher, prepare a map of your school premises based on the list given below. Use the colors that are used in the maps.

Index

Layout of school premises



Let's understand

We used various signs, symbols and colors while creating the school campus plan. To create a map of this plan, it is necessary to provide direction, index, title and scale.

Teacher: If the length of the classroom is 10 meter and the width is 5 meter, then we can draw lines of length 10 cm and 5 cm to show the walls of the classroom. So what did we do? We reduced the distance on the ground by a few times and showed it on a paper. This means that we took a scale to show the distance on the ground. It is necessary to take such a scale while drawing any map. Tell us the scale you took?

Student: We showed a wall 10 meter long by 10 cm.

Teacher: Correct! When telling the ratio, first we tell you one unit of distance on the map and how many units of distance it represents on the ground. We showed the distance on paper in centimeters and measured the distance on the ground in meter.

10 cm : 10 meter, that is, 1 cm : 1 meter. Now write this ratio on the map and show other things, after doing this, your map will be complete.



Observe



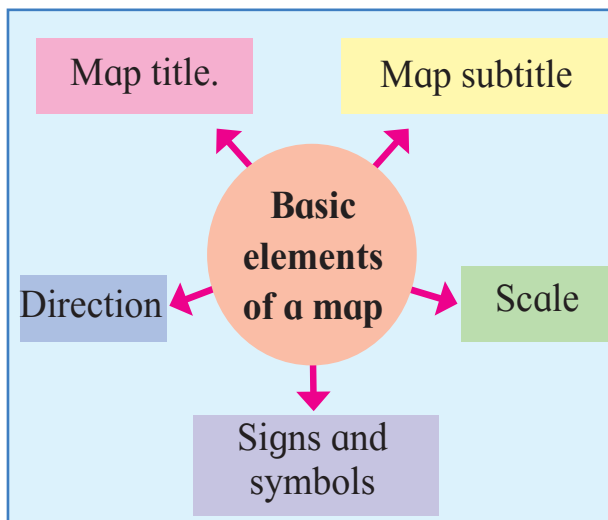
Complete the table.

Sr. No.	Unit	Sign	Sr. No.	Sign	Unit
1.	International Boundry		1.		
2.	Coastal strip		2.	⊙	



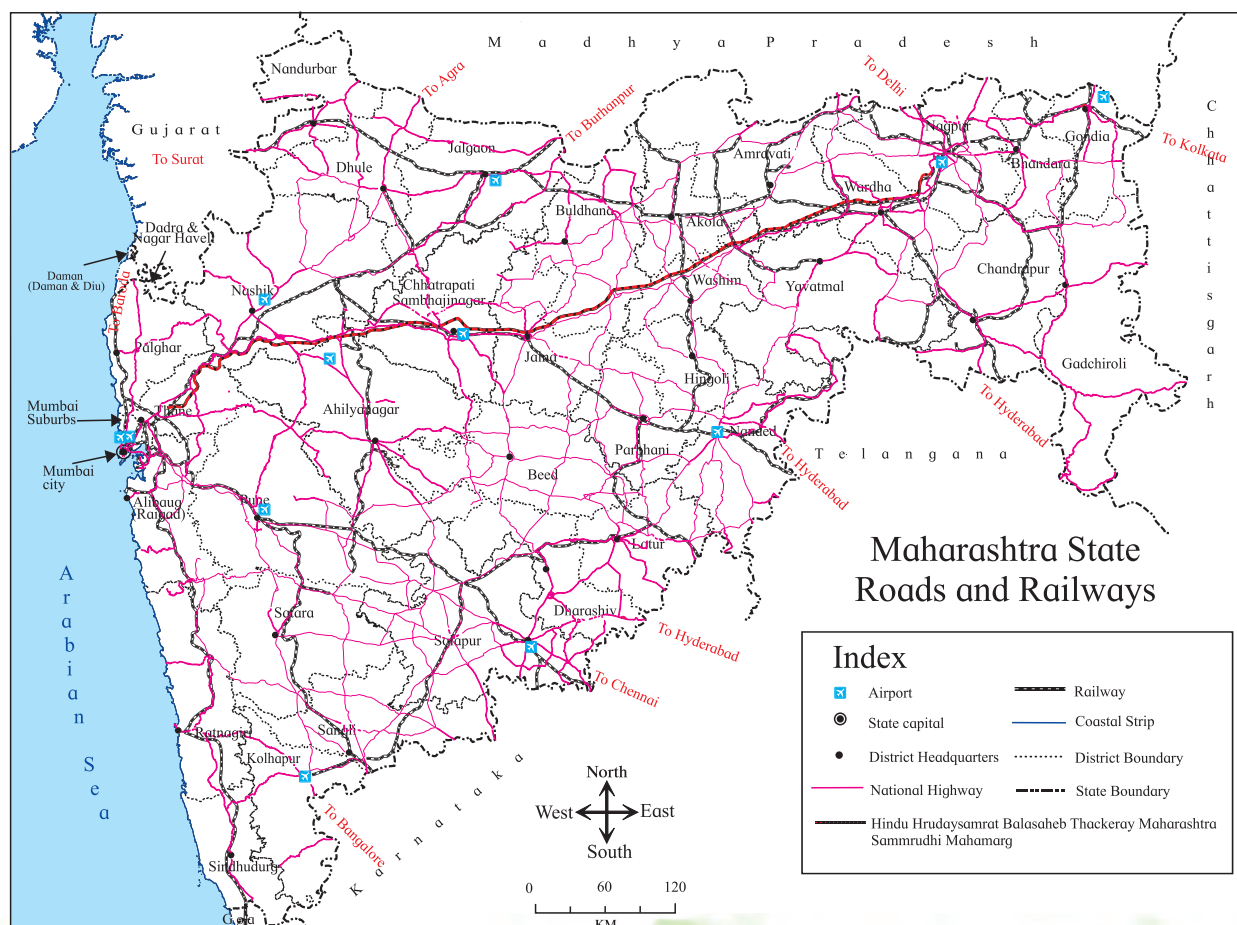
Let's find out

- While preparing a map, the basic elements as given in adjacent drawing are considered.
- The map's layout makes it easy to read. The title and subtitle of the map help us understand the region and purpose. The conventional signs and symbols given in the index help us understand the location of other elements shown on the map and provide information.
- Direction arrows helps to orient the map correctly. The scale shown on a map is used to measure distances between different places.



Observe

Observe the map below and answer the questions given.



Write the answers to the questions given with the help of the teacher.

- Write the two names of airports found in the map.
- Which highway will be used while travelling from Pune to Kolhapur?
- Find the capital of Maharashtra in the map. In which direction it is in the state.
- Name the important stations from Maharashtra a long Mumbai-Chennai rail route.



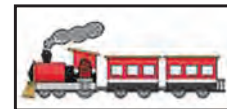
Perform the activity

Sunanda wants to make a map of her area. The things in the she sees in her area given below. Which of these things should she show on the map? Please help her.

House, flying birds, police station, cow, post office, bullock, school, car, square, road, tower, railway, railway station, farm and tree.













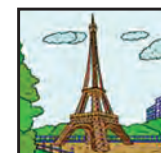




















- How to find the location of a place using a map.
- The basic elements of a map are important when creating a map.
- The need to use symbols and signs on maps.
- The location of a place on Earth can be shown on a map with a specific scale.



Let's Revis

(A) Fill in the blanks.

- (1) is the main element of map in basic elements.
a) Direction b) Type of map
c) Length and width of map d) Size of map
- (2) What is used to measure the distance between two places on a map?
a) Direction b) Scale c) Symbols d) Pictures
- (3) What symbol is used to show a ‘spring’ on map?
a)  b)  c) + d) ▲
- (4) Samruddhi highway that joins Mumbai and Nagpur passes through districts.
a) 12 b) 04 c) 10 d) 13

(B) Write the answers in one sentence.

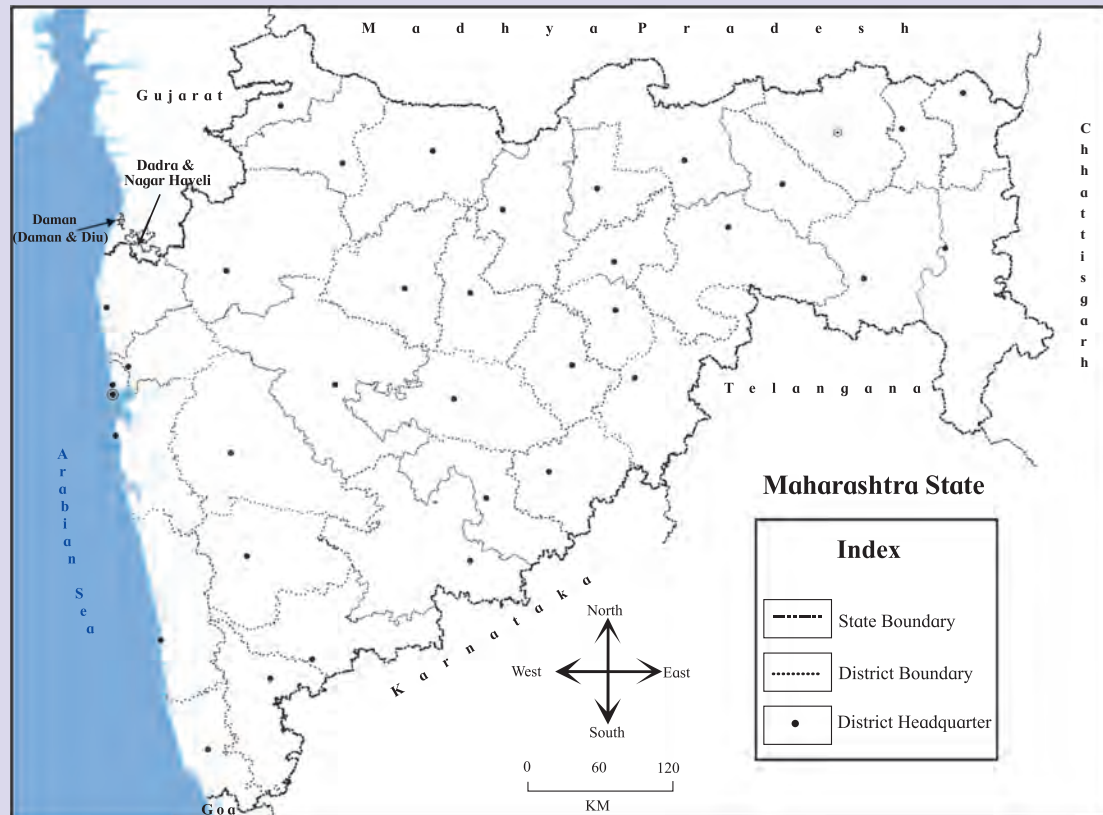
- (1) What is a map?
- (2) Why do maps need to be scaled?
- (3) What are the basic components of a map?
- (4) What color is used to show water on a map?

(C) Write whether it is true or false.

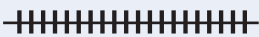
- (1) Scale is used while creating a map.
- (2) A map is a replica of the earth.
- (3) Signs and Symbols are used to understand a map.

(D) With the help of the teacher, prepare a map of your home surrounding.

(E) Find the districts you know in the administrative map of Maharashtra given below and write their names.



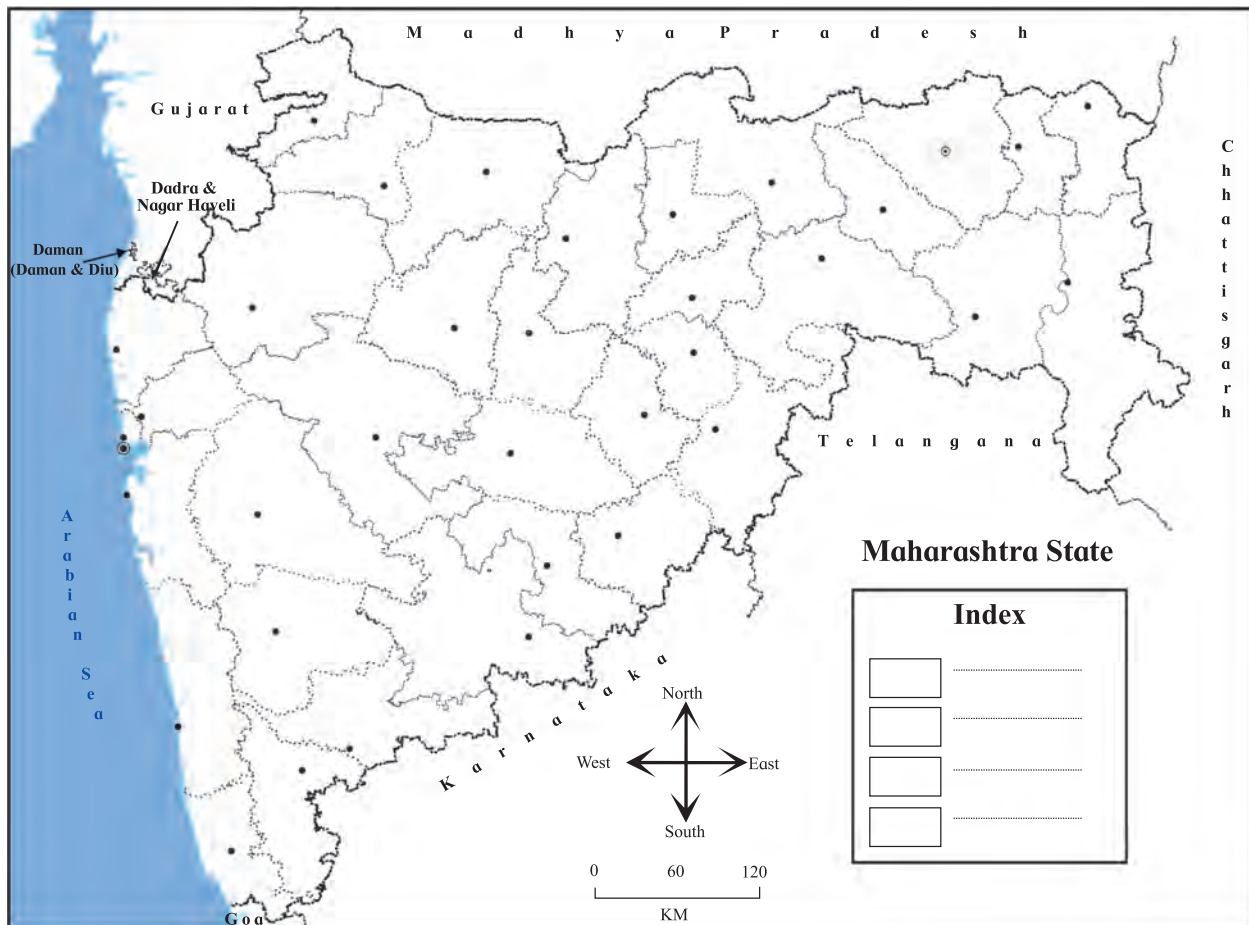
(F) Identify and draw the symbols and signs and their names given in the table below.

No.	Signs /Symbols	Name	No.	Name	Signs /Symbols
1.			6.	Temple	
2.			7.	Pass	
3.			8.	Airport	
4.			9.	Mosque	
5.	P O		10.	Port	

Activity - 1

Make an index by showing the items in the following questions on the given map.

- In the given map, show any two districts having water boundary using your favorite color.
- Write at least three and at most seven names of important cities you know in their correct location.
- Write the names of the capital and Sub capital of Maharashtra state in the correct place.



Activity - 2

Answer the following questions by observing the map above.

- Which districts/states are to the north of your district?
- In which direction of Maharashtra is the state of Chhattisgarh?
- Which sea is located to the west of Maharashtra state?

Activity - 3

- Teachers should use the maps in the textbook to develop students' skills in formulating map-based questions.



11

My Maharashtra



Let's understand

(Teacher and students are interacting in the classroom.)

Teacher : Children, we have studied our district in the previous class.

Student : Yes Madam!

Teacher : In which state do we all live?

Student : In Maharashtra state.

Teacher : Exactly, let's study information about our state of Maharashtra.



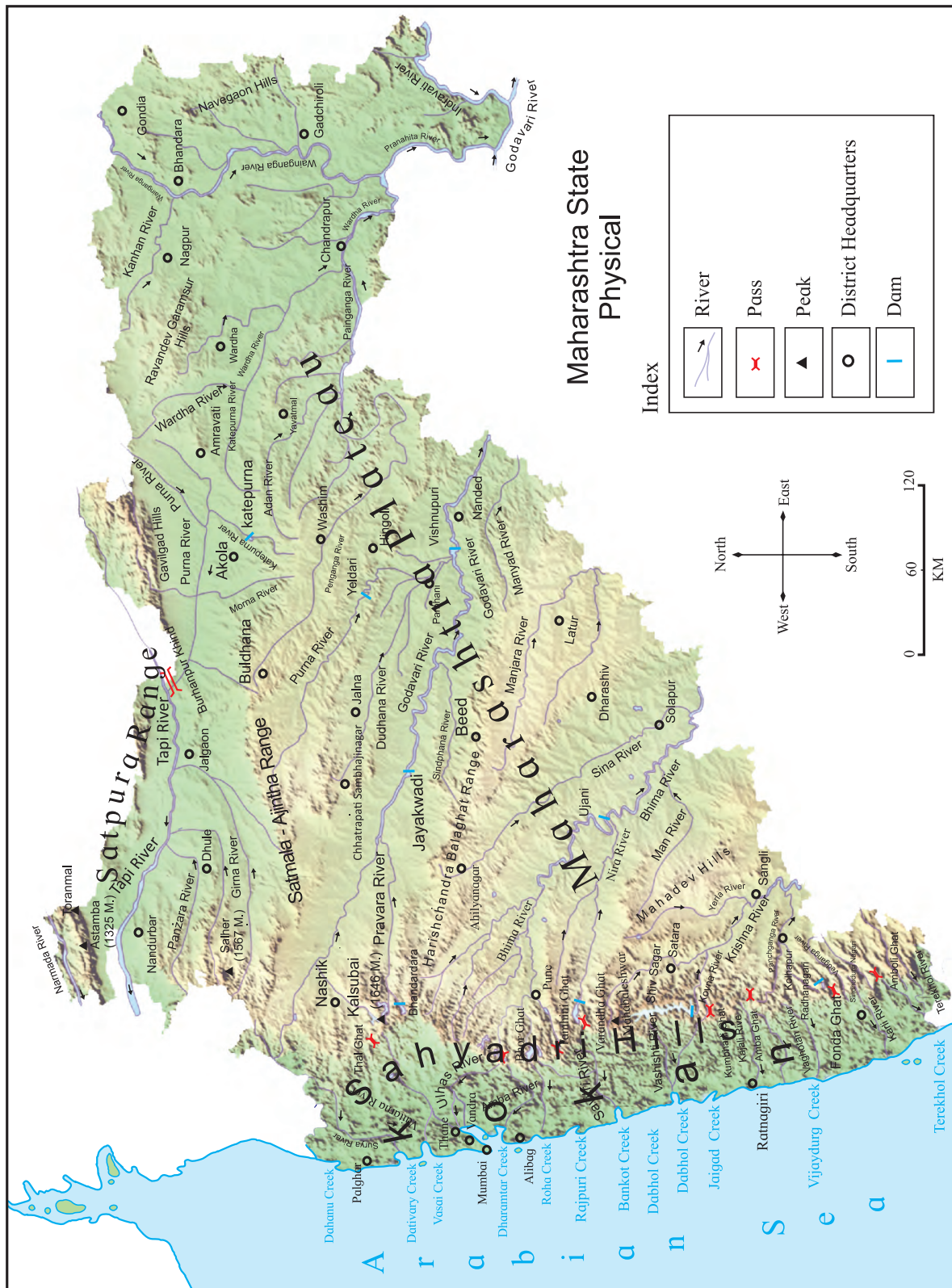
Maharashtra is one of the advanced states in India. Our state is in the western part of the country and its western border is marked by the Arabian Sea. The shape of the state of Maharashtra is roughly triangular. The total area of Maharashtra is about three lakh sq. km. and in terms of area, the state of Maharashtra ranks third in the country. For administrative convenience, the state is divided into 6 divisions. They are as follows -





Observe

Observe the physical map of Maharashtra state given below.



The state of Maharashtra was formed on 1st May 1960. We celebrate this day as ‘Maharashtra Day’. Mumbai is the capital of the state of Maharashtra and Nagpur is the second capital. The state language of Maharashtra is ‘Marathi’. The state of Maharashtra is blessed with a long coastline of 720 km. The states of Gujarat and Madhya Pradesh are on the northern border of Maharashtra. The state of Chhattisgarh is on the eastern border, while the states of Telangana, Karnataka and Goa are on the southern border.

Maharashtra is a prosperous and important State in India. The state of Maharashtra is blessed with geographical diversity. The geographical diversity is evident in the coastal areas of Konkan, the Sahyadri mountain ranges on the West, the plateaus of Marathwada, and the river plains of Vidarbha.



Let's find out

Maharashtra is divided into four main divisions based on its natural structure.

- 1) Konkan coastal strip
- 2) Sahyadri mountain (Western Ghats)
- 3) Maharashtra plateau
- 4) Plains of Vidarbha

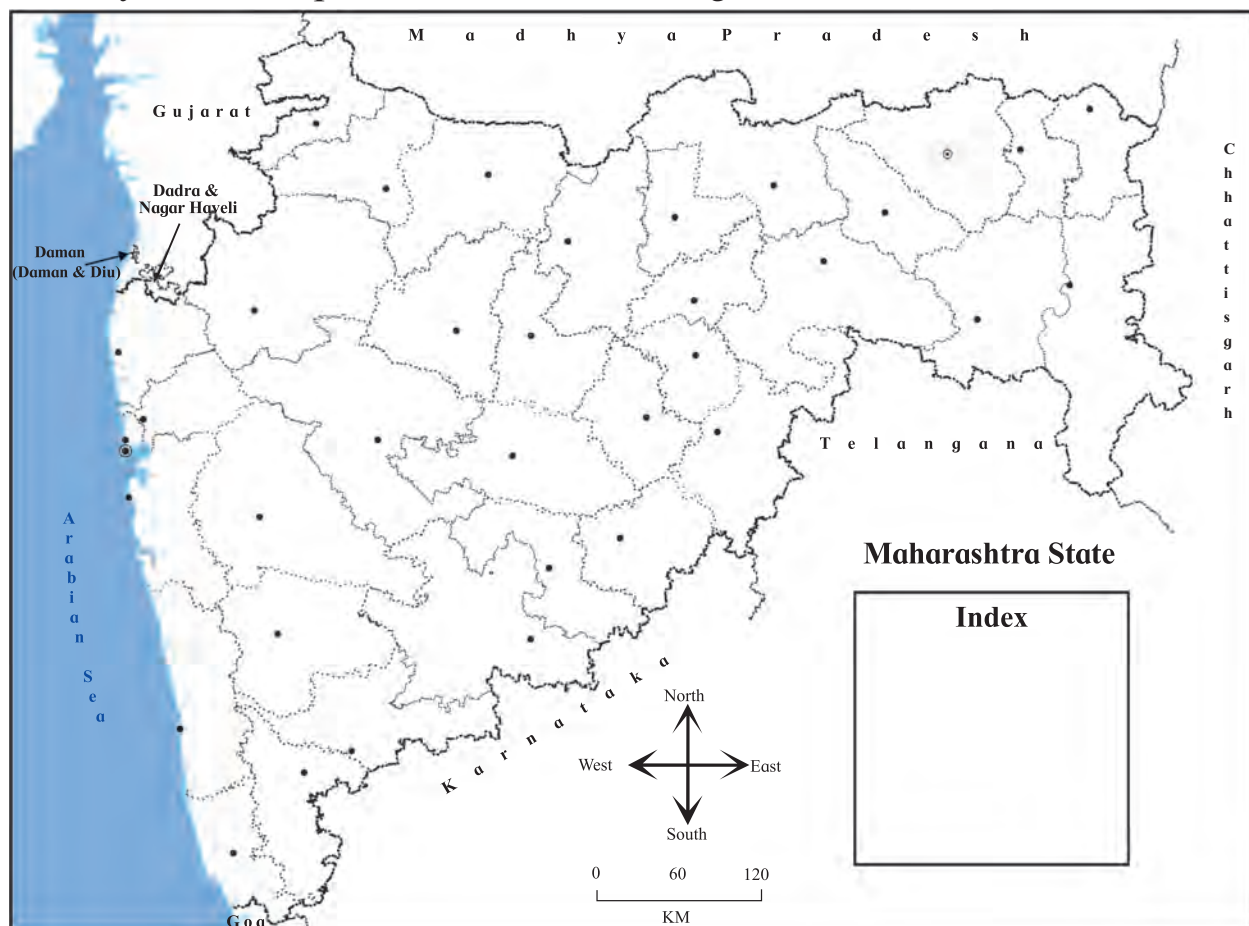
- The Maharashtra Plateau is a part of the Deccan Plateau.
- The Sahyadri Mountains are also known as the ‘Western Ghats’. ‘Kalsubai’ in this mountain range is the highest peak in Maharashtra.
- In the northern part of Maharashtra lies the Satpura mountain range. ‘Astambha’ is the highest peak in this mountain range.
- Maharashtra has major hill ranges such as Ajintha, Satmala, Harishchandragad, Balaghat, Mahadev, etc. extending in west-east direction.

- The coastal region of Maharashtra state is also known as the 'Konkan Coast'. The beaches of Palghar, Nagaon, Shrivardhan, Guhagar, Ladghar and Bhogwe on the coast of Maharashtra are the best known for cleanliness, water quality, safety and environmental management.
- River Godavari is the longest river in Maharashtra. Its length is about 1465 km of which 740 km length is in Maharashtra.



Perform the activity

Mark the items given below in the outline map of Maharashtra and do the activity on the map of Maharashtra state given below and create index.

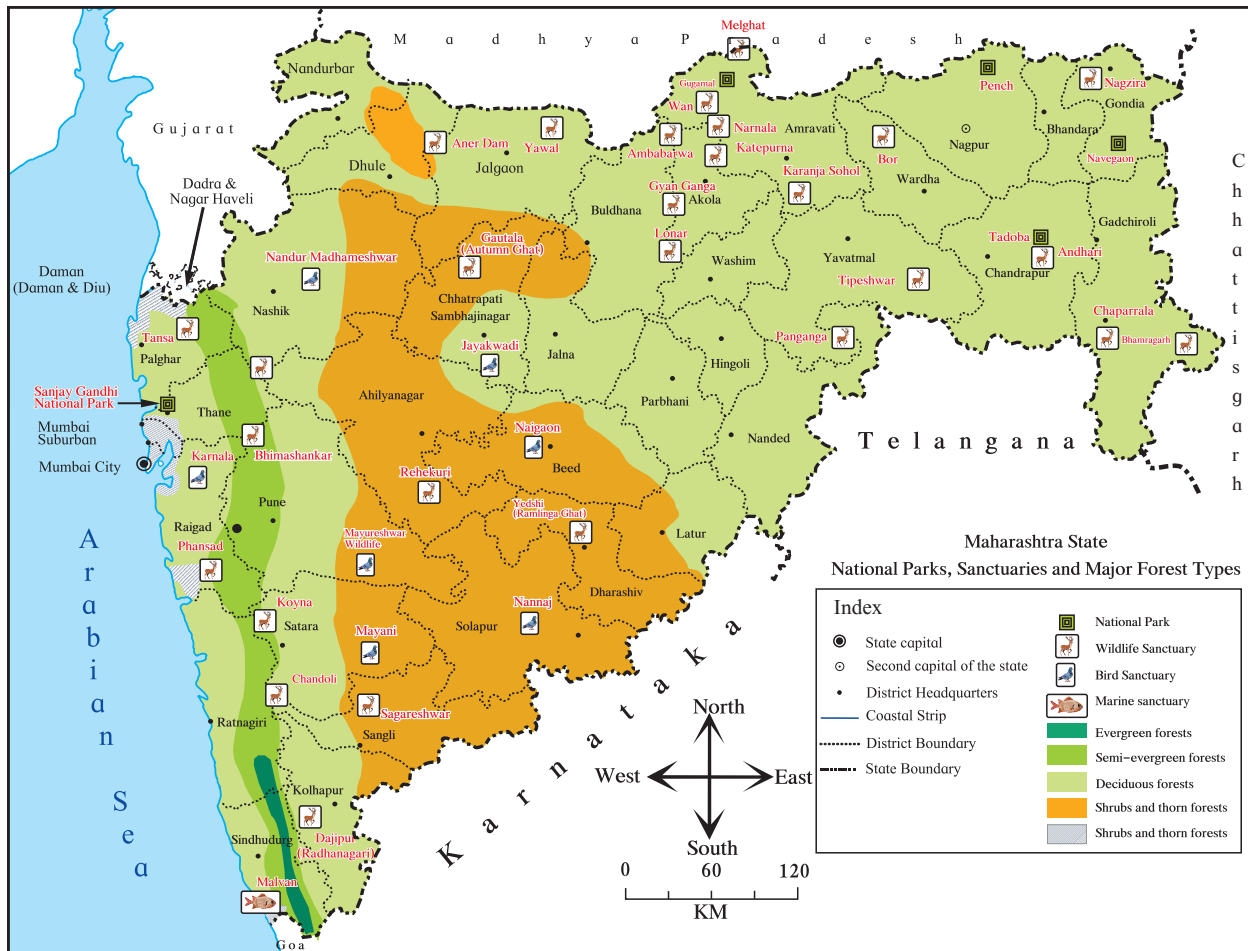


- Show the mountain range located to the north of Maharashtra state.
- Show the mountain range extending from north to south in the state of Maharashtra.
- Show river that flows from east to west in the state.
- Write the names of the coastal districts of Maharashtra state.



Observe

Observe the map of Maharashtra state given below.



Let's find out

The map shows by colour, where different types of forests are spread and the locations of major national parks and sanctuaries are also shown.

There are five types of forests found in Maharashtra. They range from thorny forests to evergreen forests. Apart from this, mangrove forests are also found on the sea coasts. The distribution of forests depends on the distribution of rainfall, hence there is a diversity in the forests.

Information about forests in Maharashtra is given in the following table.

No	Name of the Forest	Average Annual Rainfall (mm)	Region	Characteristics and Examples of Trees
1)	Tropical Evergreen Forests	More than 3000	Southern part of Western Ghats (Sahyadri)	Dense forests with a wide variety of trees remain green throughout the year. Examples: Nagchampa, Jambhul, Jackfruit, Telyatad, Vet, Bamboo etc.
2)	Semi-evergreen Forests	1000 to 3000	Eastern and Western slopes of the Sahyadri range	Less diversity compared to evergreen forests. Examples: Mango, Jackfruit, Ain, Kinjal, Kadamba, Shevri etc.
3)	Deciduous Forests	600 to 1000	Konkan, eastern low rainfall region of Sahyadris, Satpura Mountains, plateau regions, eastern part of the state	Trees shed leaves in certain seasons. Examples: Teak, Hirda, Banyan (Vad), Palas, Salai, Moh etc.
4)	Thorny and Shrub Forests	Less than 600	Rain shadow region	Plants have small, leaves and thorns to reduce water loss. Examples: Acacia, Bor, Cactus, Khair etc.
5)	Mangrove Forests	Mangrove forest are located in saline coastal water	Coastal intertidal zones and estuarine regions	Trees grow in saline water. Examples : Red mangroves and Black mangroves.



Can you tell?

Maharashtra State: Answer the following questions based on the map of National Parks, Major Sanctuaries and forest types.

- In which district is Ramalinghat Sanctuary located?
- What is the name of the National Park in Thane district?
- In which districts are evergreen forests found?



Let's understand

Maharashtra has a rich fauna. Vertebrates (animals with a backbone) are the most important of them. These vertebrates are divided into five main groups: fish, amphibians, reptiles, mammals and birds.

The dense forest areas of Maharashtra are rich in animal life. In the evergreen and semi-evergreen forests, animals such as tigers, leopards, wild boars, bears, elephants, neelgai, etc. are found. In the deciduous and low-rainfall regions, animals such as deer, lynx, wolves, jackals etc. are found. Similarly, in the thorny forest areas, animals such as salamanders, rabbits, deer, lynxes, lizards and snakes are found.

Birds such as the bhardwaj, peacock, owl and satbhai are found in the forests. The rare bird, Maldhok, is found in the shrub and thorny forests. The Hariyal (green pigeon) is our state bird, while the Shekru, a large squirrel, is our state animal.



Perform the activity

Complete the table below by observing the map of national parks sanctuaries and forest types given in the lesson.

Sr. No.	Parks/Sanctuaries/Forest type	Districts
1)	National Park	1 2
2)	Wild animal sanctuary	1 2
3)	Bird Sanctuary	1 2
4)	Shrubs and Thorny	1 2



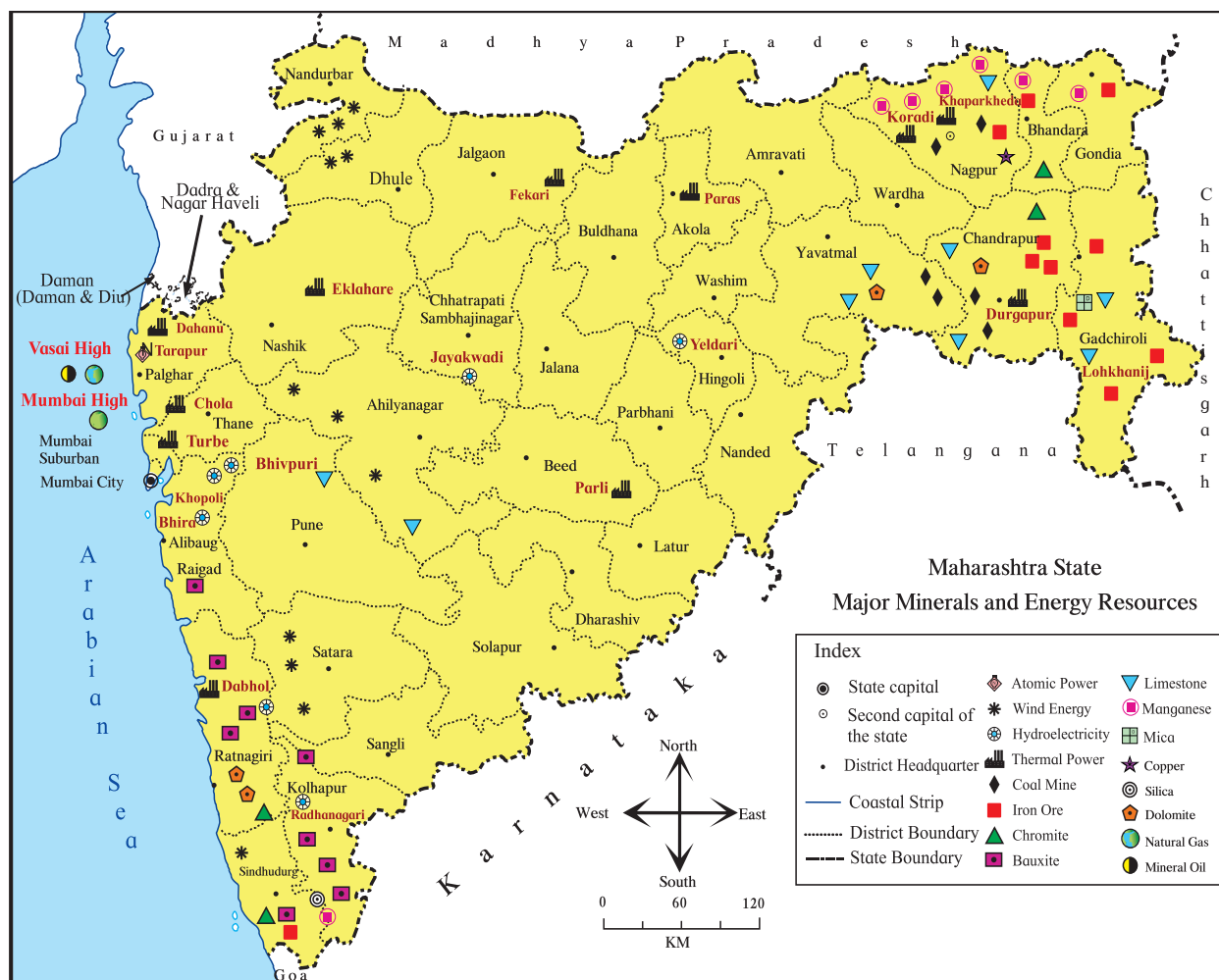
Let's find out

Just like water resources and ocean resources, mineral resources are a gift from nature. Minerals and energy resources are of great importance in the economic development of any region. The distribution of mineral resources in Maharashtra is shown in the map below. If you study this map, you will notice that the mineral resources of Maharashtra are concentrated in the eastern part. In Maharashtra, laterite rock is found in the Konkan region. Minerals like bauxite and manganese are found in this rock. Whereas, manganese, limestone and iron ore are found in the eastern part.



Observe

Observe the map given below showing the distribution of minerals and energy resources in various districts of Maharashtra.





Let's understand

Let us understand the table below showing major minerals in the state of Maharashtra, the districts where they are found and the uses of the minerals.

No.	Mineral	Districts	Uses
1	Manganese	Nagpur, Gondia, Bhandara, Sindhudurg	Used in iron and steel industry; manufacture of batteries, paints, disinfectants, glassware, and medicines.
2	Iron Ore	Chandrapur, Bhandara, Gadchiroli, Nagpur, Gondia, Sindhudurg	Used to produce pure iron and steel.
3	Bauxite	Sindhudurg, Ratnagiri, Kolhapur, Raigad	Used for the production of aluminum.
4	Limestone	Gadchiroli, Yavatmal, Chandrapur, Nagpur, Pune, Ahilyanagar	Used in chemical and cement industries; for producing lime for construction.
5	Chromite	Bhandara, Sindhudurg, Ratnagiri, Chandrapur	Used in metallurgical, chemical industry.
6	Dolomite	Yavatmal, Ratnagiri, Chandrapur	Used in iron and steel production.
7	Silica	Sindhudurg, Ratnagiri, Kolhapur	Used in glass manufacturing industry.
8	Coal	Chandrapur, Yavatmal, Nagpur	Used for thermal power generation and as a fuel.



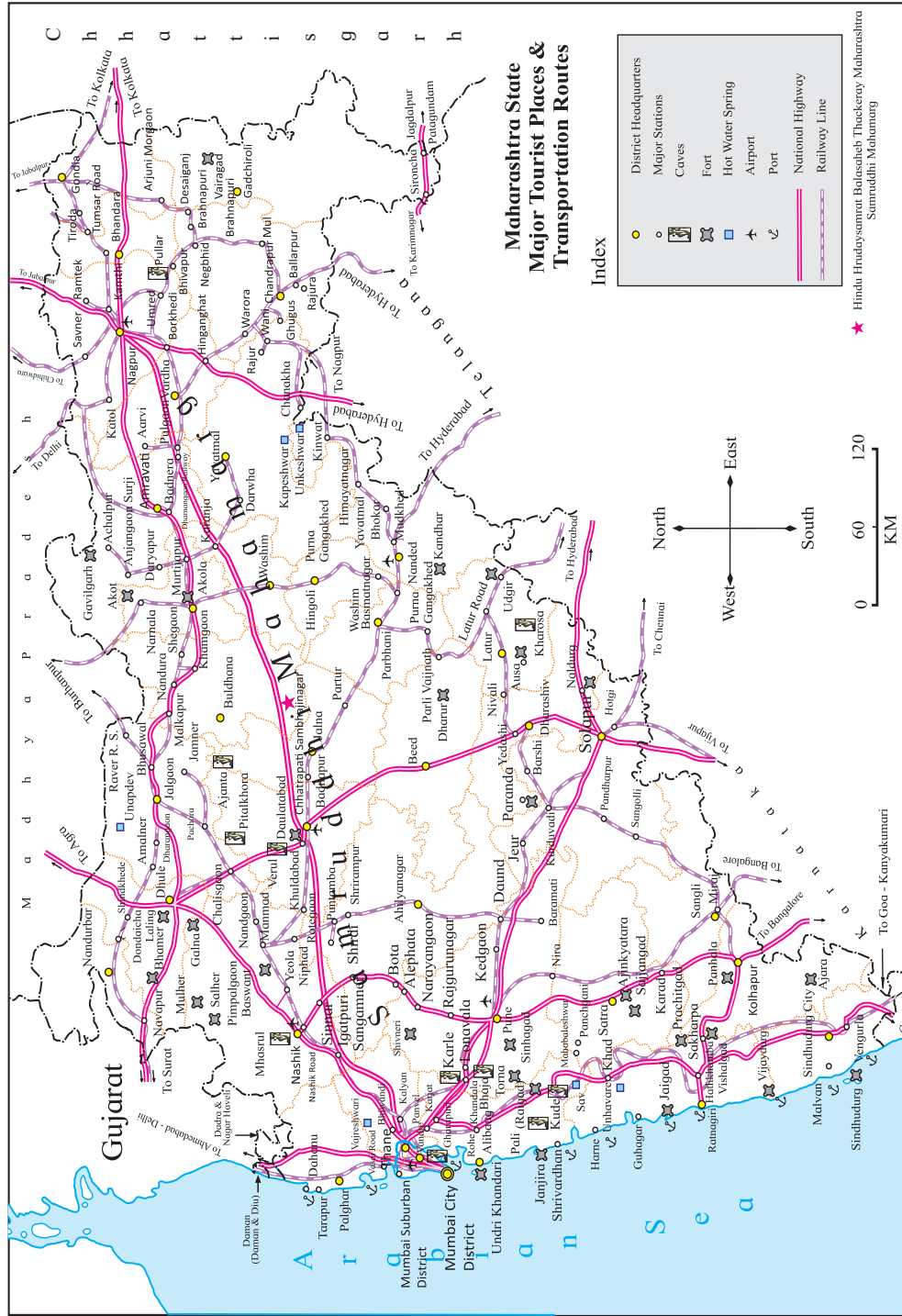
Let's find out

In our state of Maharashtra, the Hindu hruday Samrat Balasaheb Thackeray Samruddhi Mahamarg is constructed in the Maharashtra with the help of modern technology which connects various cities. This highway connects the major cities of Mumbai to Nagpur and it is 701 km long. The Samruddhi Mahamarg passes through ten districts of Maharashtra.



Observe

- Observe the map below.



Perform the activity



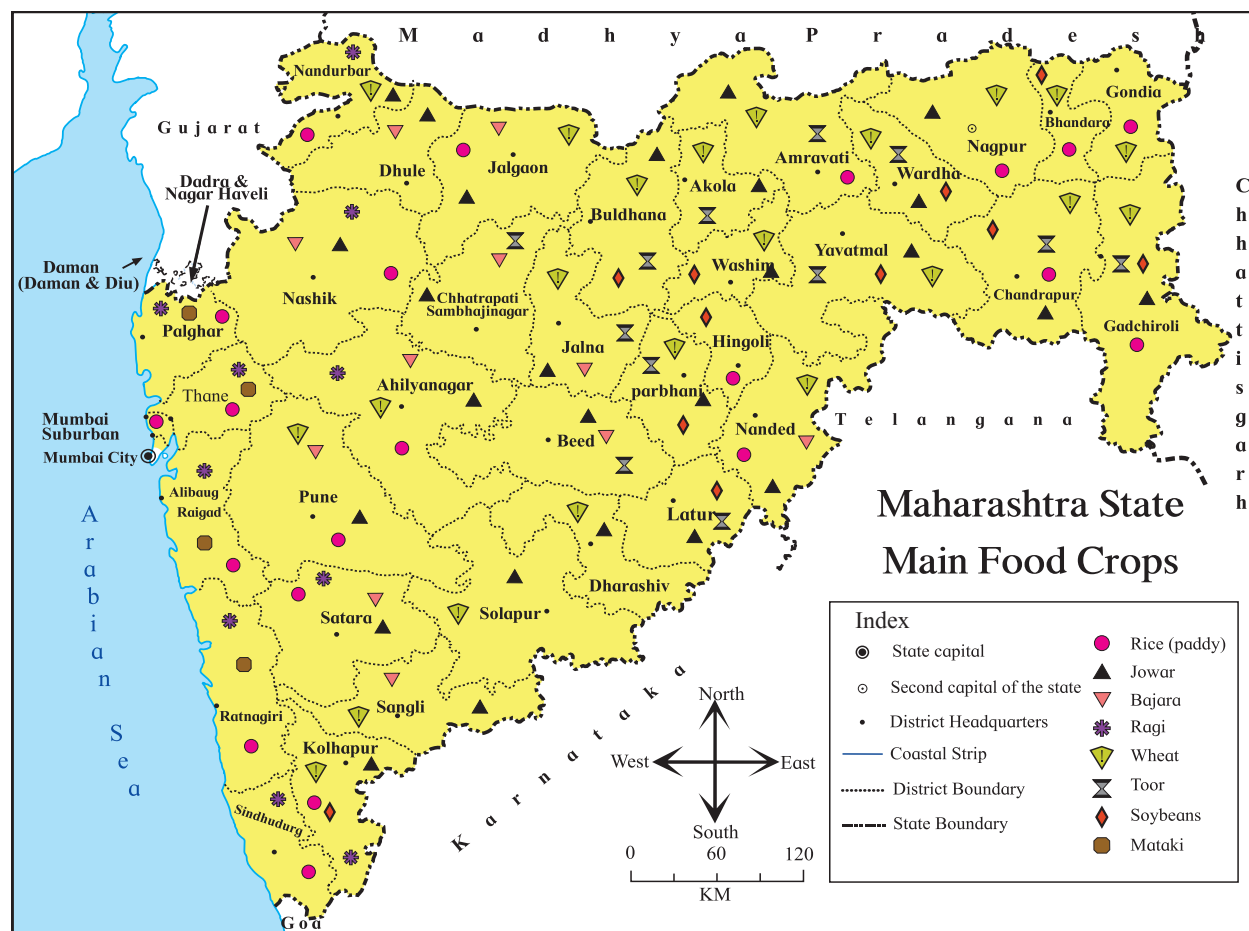
Prepare a table in your notebook as shown alongside and fill the table with at least seven rows.

Place Districts/ City/ State	Airport	Districts through which Samruddhi Mahamarg is passing	Ports in Maharashtra	Ghats / Passes	Neighboring States



Let's understand

Agriculture is the main occupation in Maharashtra. There is a variety of crop production in the state of Maharashtra. Crop production depends on the climate, soil and water availability. Since rainfall is not uniform everywhere in the state, different crops are grown in different areas.



In the areas of the state where there is high rainfall, crops like rice and orchards are grown. In areas with less rainfall, crops like jowar, bajra, maize, and pulses are grown. Most of the agriculture in the state depends on rainwater. It is called 'arable farming'. Agriculture is done by supplying water through irrigation, which is called 'irrigated farming'. The farming season during the monsoon is called 'Kharif season', while the farming season during the winter is called 'Rabi season'. In recent times, efforts are being made to increase the area under cultivation through modern irrigation.

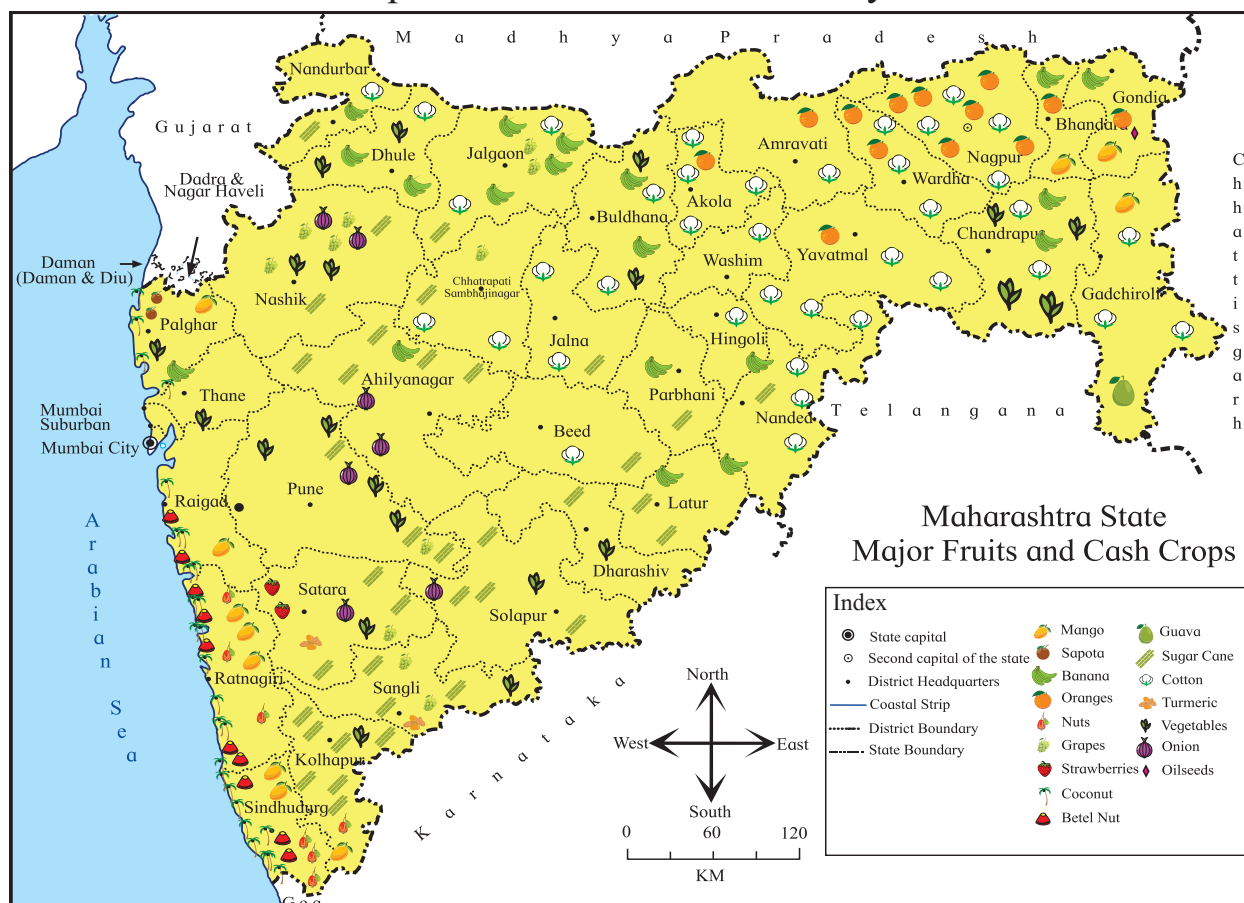
Observe the map above and write the answers.

- Which crops are grown in the western coastal part of the state?
- Which crop are grown in the plateau region?



Observe

Along with the main food crops, fruits and cash crops are grown in the state. Observe the map and write the answers in your notebook.



- Which districts produce mangoes?
- What main fruit is produced in Palghar district?
- Which district is famous for oranges?
- What are the major fruits grown in Satara district?
- Write the names of the major crops of your district.



Complete the chart

In the chart below, write the names of the main crops, major fruits and commercial crops of Maharashtra state with the help of your teacher.

Sr. No.	Food crops	Fruits	Commercial crops		
			Pulses	Oilseeds	Others
1					
2					
3					



Do you know?

For discovering new varieties of rice, Shri Dadaji Khobragade was felicitated by the President Honourable Dr. APJ Abdul Kalam and great scientist Dr. Raghunath Mashelkar. Along with rice crop, many farmers in Maharashtra are conducting research on varieties of various crops like wheat, sugarcane, pomegranate, grapes, turmeric, tur, brinjal, soybean.

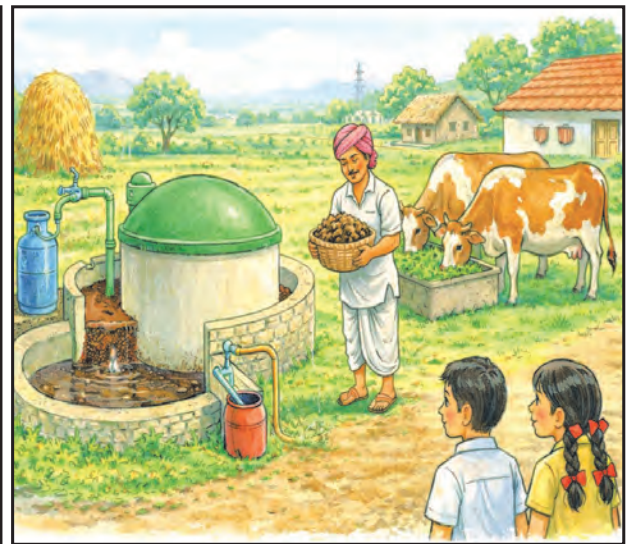


Let's find out

- 1) Solar energy is energy obtained by utilizing the light and heat from the sun. For e.g. - the solar power project at Sakri in Dhule district of Maharashtra.
- 2) 'Bioenergy': Bioenergy can be produced by using animal excreta and organic waste (mulch, shells, etc.).



Solar power plant

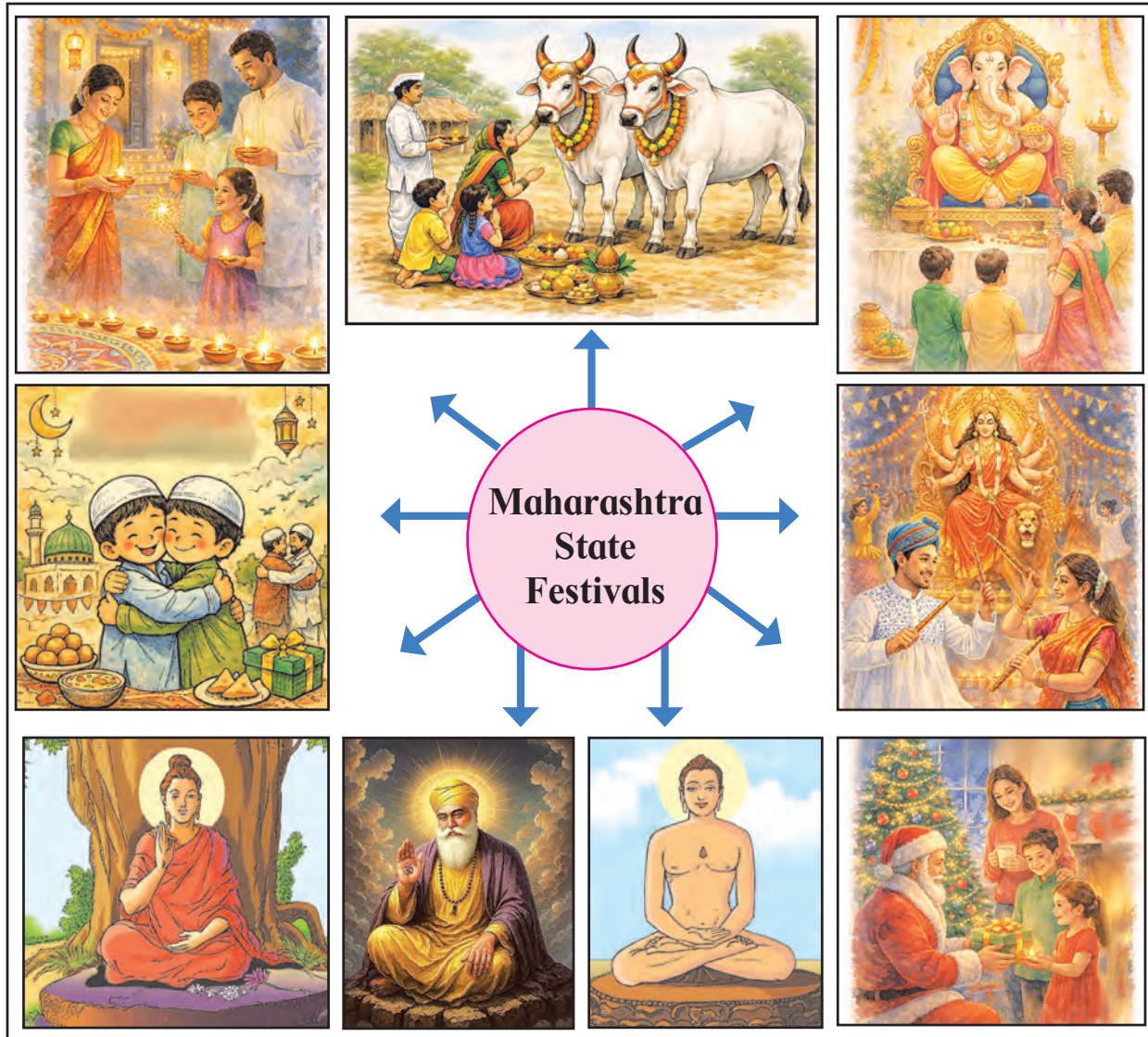


Bioenergy plant



Let's understand

- Festivals and ceremonies of various religions are celebrated with enthusiasm in the state. There is a diversity in festivals and celebrations.
- Two 'national festivals', August 15 and January 26, are celebrated with enthusiasm across the country.



Perform the activity

With the help of teachers, collect information about national festivals August 15th and January 26th.

Let's find out

In the state of Maharashtra, various musical instruments are used according to festivals and ceremonies. To increase the enthusiasm of festivals and ceremonies, people play musical instruments. For example, during public festivals, instruments like dhol, tasha, peti (Harmonium), tabla, sambal, sanai (Clarinet), taal, mrudung, halgi, tarpa are played.



- What musical instruments are played in your home?
- What instrument do you like to play?



Let's find out

The state of Maharashtra is diverse in many aspects, and the same diversity is also seen in its costumes.





Perform the activity

- Under the initiative 'One Maharashtra: Many Costumes', draw pictures of various costumes and display them in the classroom.
- With the help of the teacher, list the famous food items according to the regional divisions of the state.



Do you know?

Our state of Maharashtra is famous for its forts and fortresses. 11 forts in Maharashtra have been declared as World Heritage Sites by UNESCO.

These 11 forts in Maharashtra are as follows :

- Shivneri, Salher, Lohagad, Khanderi, Raigad, Rajgad, Pratapgad, Suvarnadurg, Panhala, Vijaydurg and Sindhudurg.

Activity

- With the help of teachers, prepare a table showing districts in which the 11 forts are located as World Heritage Sites by UNESCO.



Let's find out

Mrs. Rahibai Popere is a woman farmer and conservator of traditional seed varieties from Kumbhalane village in Akole taluka of Ahilyanagar district. Rahibai was awarded the 'Padma Shri' by the Government of India in 2020 for her conservation of indigenous seed varieties.



We have studied this



- The landforms of the state of Maharashtra, including mountains, plateaus, and plains.
- The forests, rivers, and wildlife of the state of Maharashtra.
- We studied State's land border and maritime border.
- The diversity of forest resources in the state.
- Got information about the major crops and food items in the state.
- Festivals and ceremonies are celebrated with enthusiasm in the state. It is understood that various traditional instruments are played during the festivals.
- There is diversity in clothing and food in the state.



Let's Revise

(A) Write the correct word in the blank.

- (1) Maharashtra state ranks in the country in terms of area.
a) second b) third c) fourth d) fifth
- (2) 'Maharashtra Day' is celebrated on
a) 1st May b) 1st November c) 1st March d) 1st December
- (3) is the longest river in Maharashtra.
a) Manjra b) Krishna c) Godavari d) Koyna
- (4) Sugarcane and cotton are the major crops in Maharashtra.
a) Arable b) Commercial c) Industrial d) Irrigated

(B) Write the answers in one sentence.

- (1) State of Maharashtra is the part of which plateau?
- (2) Which mountain range is located in the west of Maharashtra state?
- (3) What is the major food grain crop in Maharashtra?

(C) Answer in short.

- (1) How many administrative divisions are there in Maharashtra state? Write their names.
- (2) Write the names of states with which the border of Maharashtra state is connected.
- (3) Briefly write the importance of dams in the state.
- (4) Which musical instruments are used in festivals and ceremonies?
- (5) Why there diversity in the forests of the state?

(D) Write the difference between of the following.

- (1) Solar energy and Bioenergy
- (2) Evergreen forest and thorny forest

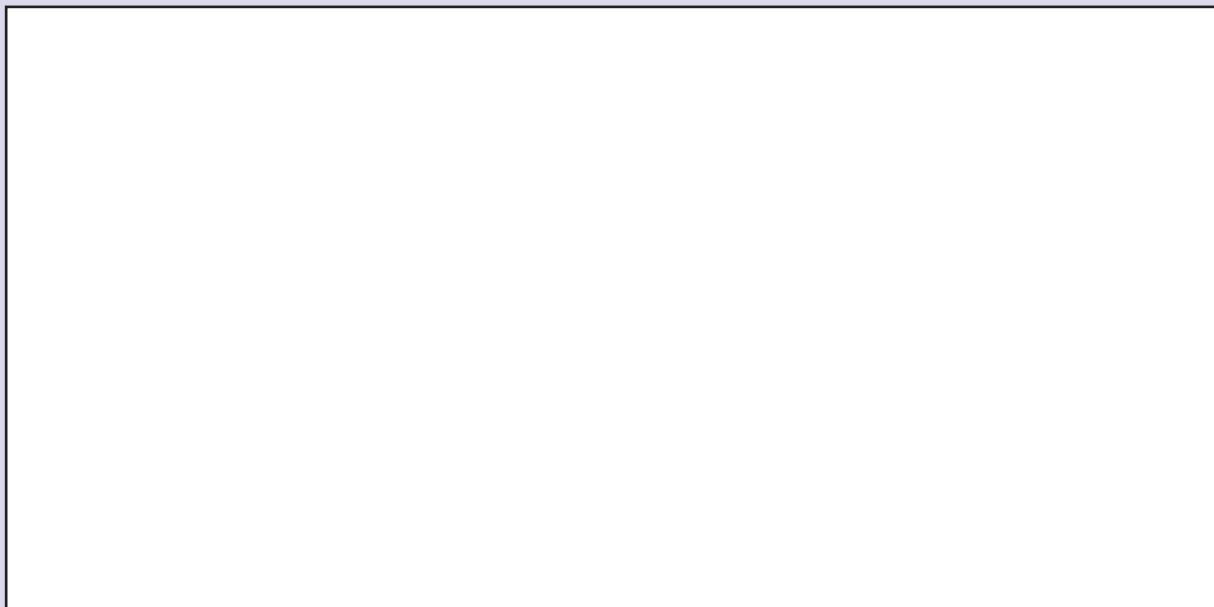
(E) The names of the districts in the state of Maharashtra are given in the table below.

Accordingly, write down the major crops or fruits of the districts.

Sr. No.	District	Major Crop/Fruit
1	Raigad	
2	Solapur	
3	Jalgaon	
4	Nagpur	
5	Ratnagiri	

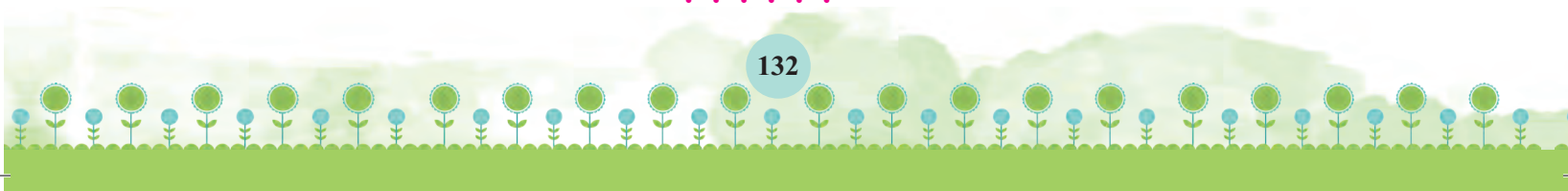
(F) List the foods you like. Write down why you should eat healthy foods.

(G) Draw below a picture of any musical instrument you like.



Activity

- Visit the local farm with the teachers. Discuss with the farmers the diversity of crops according to the season.

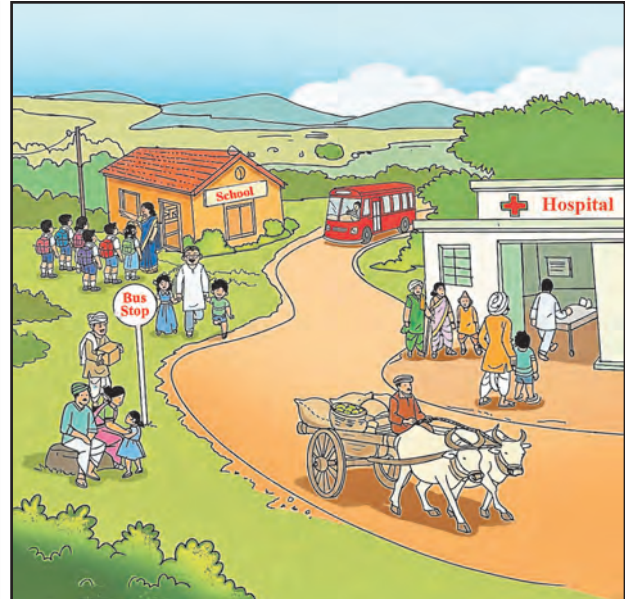
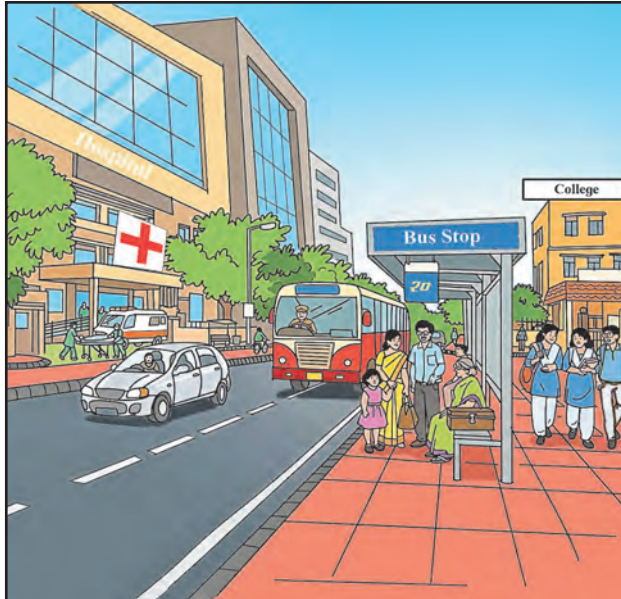


12

Public Life, Transport and Communication



Observe



Can you tell?

- What do you see in the pictures above?
- Write down the differences you notice in both the pictures.
- What is the difference between the facilities available in urban and rural areas?



Let's understand

- In urban areas, facilities like roads, electricity, water supply, transportation and communication are better. In rural areas, such facilities are limited. Considering the increasing population in recent times, facilities like roads, transportation systems and water supply in urban areas are facing an immense pressure.
- Medical facilities are easily available in urban areas. In rural areas primary health centers are available.

- Educational facilities are more in urban areas. Educational facilities are available up to primary and secondary school levels in rural areas. For higher education, one has to go to the city.
- There are various employment opportunities in urban areas. People in rural areas have to depend on agriculture and small industries for employment.
- Urban areas have markets, modern shopping malls and modern transportation facilities. Although such facilities are limited in rural areas, one can live a natural and pollution-free life there.



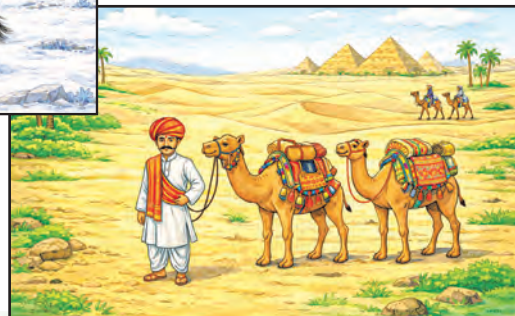
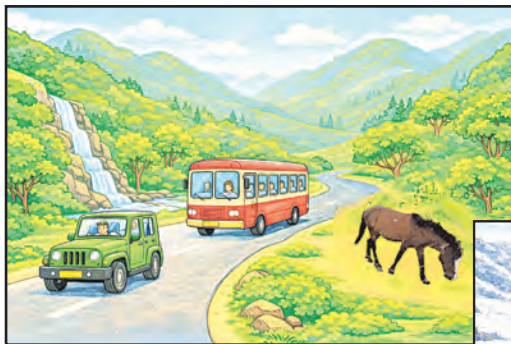
Perform the activity.

Complete the list of facilities available in urban and rural areas.

Sr. No.	Facilities in urban areas	Facilities in rural areas
1		
2		
3		
4		
5		



Observe





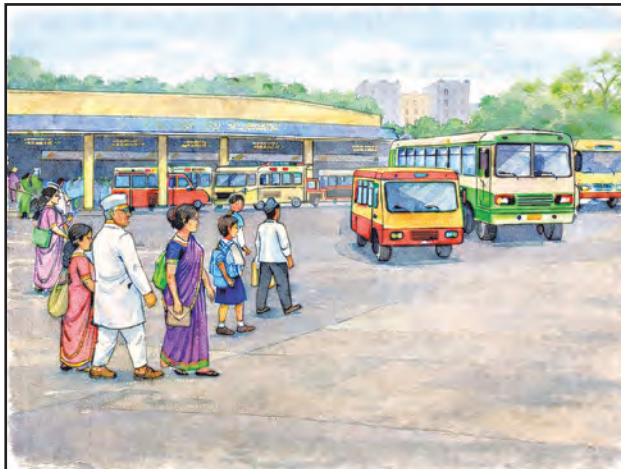
Can you tell?

- What means of transportation do you see in the picture?
- Describe the means of transport in the picture. Describe the differences you notice depending on the geographical location.



Let's understand

Transport is the movement of passengers and goods from one place to another. Geographical factors/nature of landscape or terrain affect transport. In mountainous regions, only road transport is used due to steep slopes. In plateaus and plains, road and rail transport are more common due to flat terrain. In coastal areas, water transport is carried out through the sea and through the beds of large river channels. Air transport takes place between large cities. Airports and runways are required for air transport. For example, air transport is available in major places like Mumbai, Pune, Nagpur, Solapur, Kolhapur and Shirdi in the state of Maharashtra. Animals are used for transport in deserts and snowy regions.





Observe

Changes in means of transport over time



Complete the chart

Complete the information in the table.

Sr. No.	Conventional means of transportation	Modern means of transport
1		
2		
3		
4		
5		
6		



Let's find out

To make transportation easier, faster and more convenient, Samruddhi Mahamarg, Mumbai-Pune Expressway, Atal Setu Sea Link, Solapur-Vijayapura Highway, Pune-Bengaluru Highway etc. have been completed in our state. Work on highways such as Gujarat Maharashtra-Goa Marine Highway, Nashik-Mumbai Green Field Metro, Delhi-Mumbai Corridor, Mumbai-Goa Highway etc. are in progress.



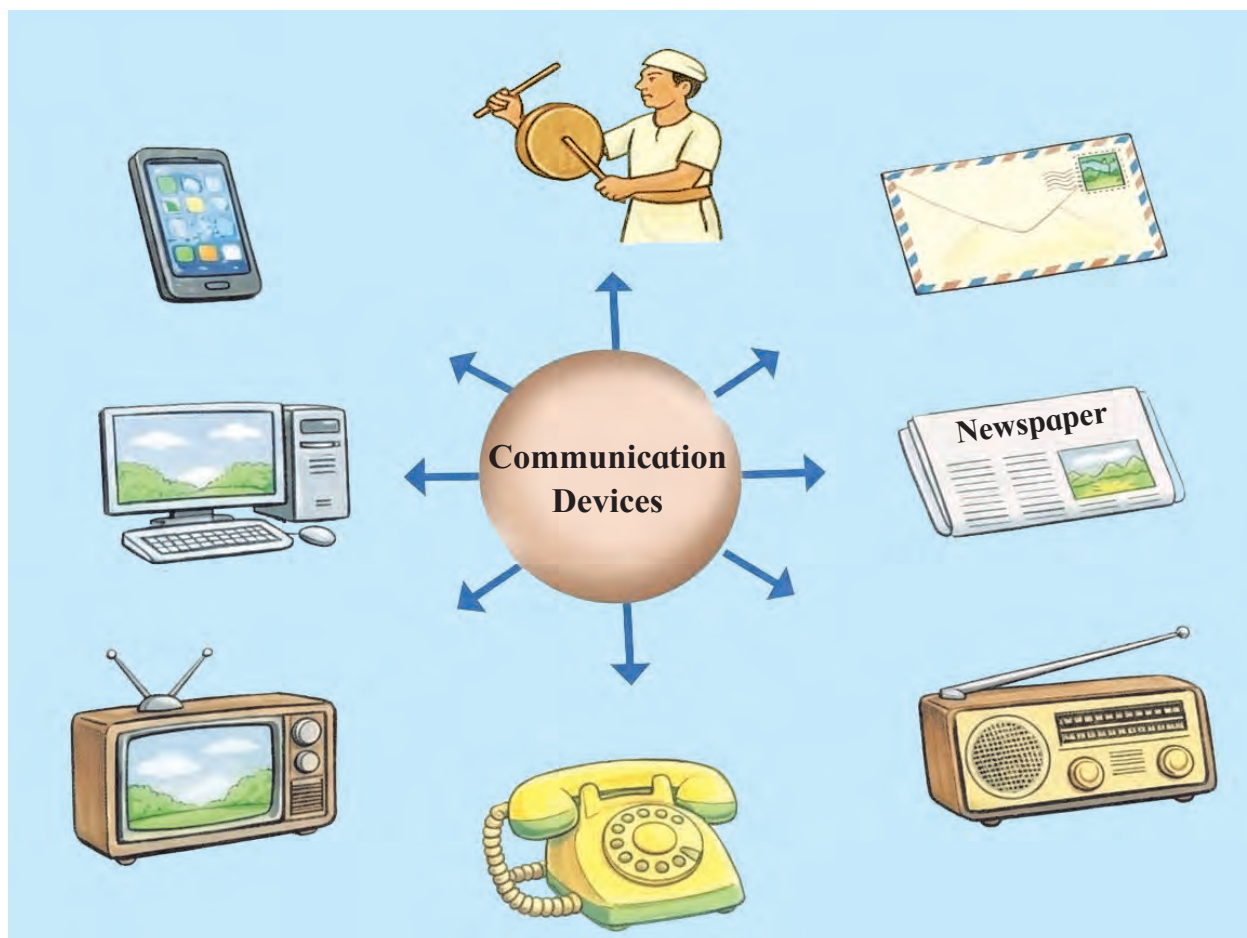
Discuss

- Why does transportation and travel take less time now than before?
- What fuels are used in different means of transport?



Observe

Discuss the traditional and modern methods of communication in the pictures below with your friends under the guidance of your teacher.





Can you tell!

- What are the different means of communication?
- Name the means of quick (fast) communication.



Let's understand

Obtaining various types of information and conveying it to others is called 'communication'. Post, newspaper, telephone, television and radio are traditional means of communication. Mobile phones, Internet, e-mail, computers, artificial satellites are modern means of communication. Since the network of modern devices is spread all over the world, the necessary information can be obtained instantly. Today, mobile phones are being used for communication on a large scale. Communication is being used in agriculture, industry, trade, transport, education and information technology sectors, etc.



Think about

- In the past, people used to send messages by writing letters. What modern means of communication do people use today?



Complete the chart

Sr. No.	Traditional communication tools	Print media communication devices	Electronic communication devices
1			
2			



Observe





Let's understand

Raju and Neha were going home after school. They were walking along the side of the road. Suddenly, two cars collided. A crowd gathered. Raju and Neha discuss the accident.

Raju: Oh Neha, these days people don't seem to follow traffic rules.

Neha: That's right Raju, but I always cross the road after looking around. (Just then, they see Neha's father coming and they inform him about the accident.)

Uncle: Children, do you know all the traffic rules?

Children: We know some rules.

Uncle: Come on then. Today we will learn about traffic rules.

(Uncle takes them to a nearby 'traffic garden'. There, he explains traffic rules and their usage with real signs.)

A traffic garden is a garden or open space that is designed to teach children about traffic rules and safety while they play, with models of signals, roads and traffic signs.



Let's understand

We regularly go out of the house for daily work. We walk or use vehicles to go to different places. We use various types of vehicles, roads, railways, air routes, etc. for travel. During travel, we have to face some problems such as the amount of traffic, travel time, accidents, natural disasters, etc. During travel, we should take care of our own and other's safety. We should follow traffic rules. Following traffic rules reduces accidents and increases safety of all.



Always remember this

- Do not use mobile phones while driving.
- To maintain your own safety and that of others, you should follow traffic and transportation rules.
- Always wear a helmet when riding a two-wheeler.
- Excessive use of mobile phones causes eye problems.
- The Internet should be used for work purposes only.
- Messaging should be used to promote unity, cooperation and harmony in society.
- Messaging keeps people connected and speeds up work.



Perform the activity

Observe the pictures below and mark ✓ the places where traffic rules are followed correctly.

Picture - 1

1)

☐

Picture - 2

☐

Picture - 3

2)

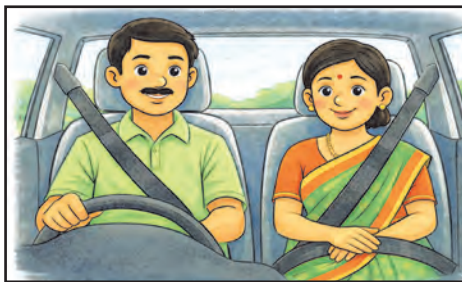
☐

Picture - 4

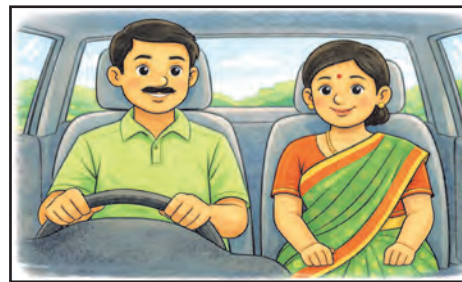
☐

Picture - 5

3)

☐

Picture - 6

☐

Picture - 7

4)

☐

Picture - 8

☐

Activity

- Discuss with your friends why they should not carry flammable materials, sharp weapons and other dangerous items with them while travelling.

***We have studied this***

- The difference between facilities in urban and rural areas,
- Information about the means of transportation in the surrounding area.
- The difference between modern and traditional means of communication.
- Changes in means of transportation over time.

***Let's Revise*****(A) Write the correct word in the blank.**

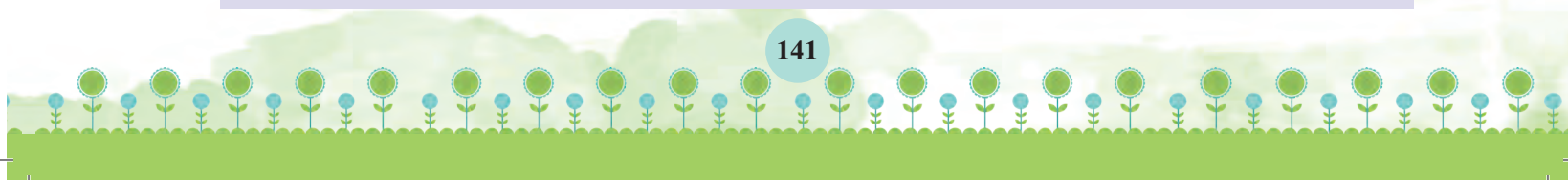
- Higher education facilities are easily available in areas.
a) urban b) rural c) tribal d) hilly
- is the tool of fast messaging.
a) Letter b) Dawandi c) Mobile d) Newspaper
- facility is designed to help children understand traffic and road safety rules effortlessly while playing.
a) Traffic garden b) Traffic school
c) Traffic station d) Traffic theatre

(B) Write the answers in one sentence.

- What is transportation?
- What is messaging?
- What means of transportation is used in desert and glacial regions?

(C) Circle the different word.

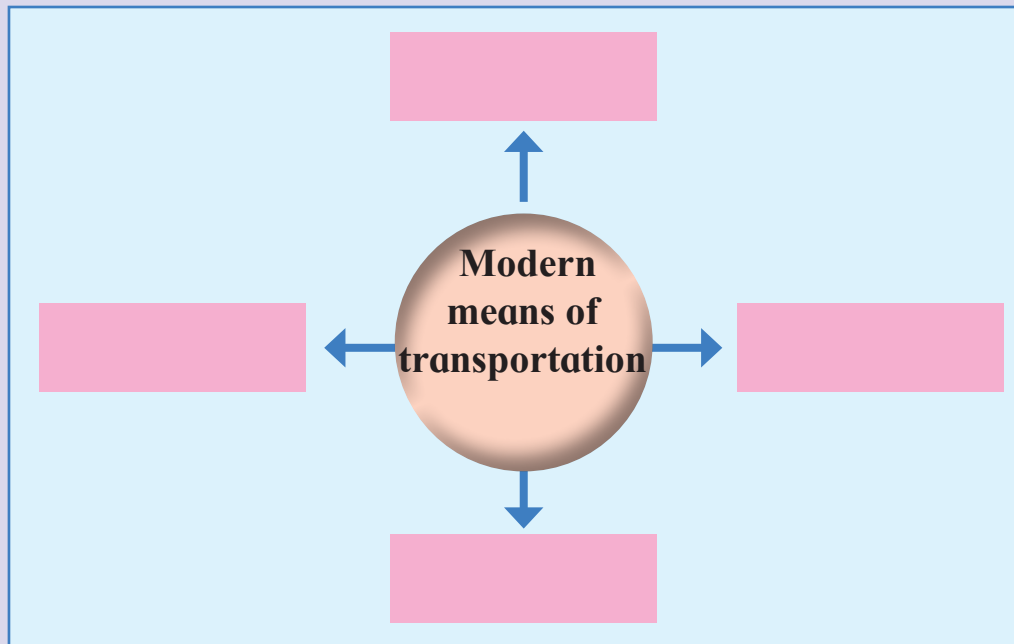
- truck, bus, ship, car
- mobile, letter, satellite, television



(D) Write short answers.

- (1) Write the difference between facilities in urban and rural areas.
- (2) List the modern and traditional means of communication.
- (3) What solutions would you suggest to reduce traffic congestion?

(E) Complete the concept drawing given below.



Activity

- With the help of teachers, learn about the changes that have been happening in the fuel of railway engines.
- With the help of the teacher, make a model of any one modern means of communication.

(F) Write in your own words the experience of the geographical trip.



Aman ate the breakfast his grandmother gave him in the morning and went out to play. After playing for a long time, he came home and said to his grandmother, “Grandma, please give me something to eat. I am very hungry.” Grandmother said, “Dear, you just had breakfast in the morning!” Aman started thinking, “Oh, that’s true! Then how am I hungry again?” Grandmother affectionately pulled him close and explained, “Dear, I was just joking. Come, I’ll give you something to eat.”

However, Aman’s mind was still racing with thoughts. Finally, Grandmother said, “The strength we get from the food we eat is called energy. Our body uses this energy to do various tasks. That is why we feel hungry again and again.”

|| *Let’s Understand*

Energy

The capacity to do any work is called **energy**. We need energy for playing, running, writing, and even for speaking. We get this energy from food. Similarly, energy is also required to operate the various machines around us.

Forms of Energy:

In our home and surroundings, energy is found in various forms such as light energy, electrical energy, heat energy, sound energy, solar energy, and wind energy. We are going to study some of these forms of energy.



- The source from which we get energy is called an energy source. For example, the sun, wind, etc.
- **Solar Energy** – The energy obtained from the sun is called solar energy. The sun is the primary source of energy like heat and light.



Solar Cooker



Solar Water Heater



Solar Lamps

Appliances that run on Solar Energy

- Which energy is used in the above appliances?
- Whom is this energy obtained from?
- Why should such appliances be used?

- **Wind Energy** – Electricity is generated using the wind through a windmill; this is called wind energy.



Let's Understand Magnetism

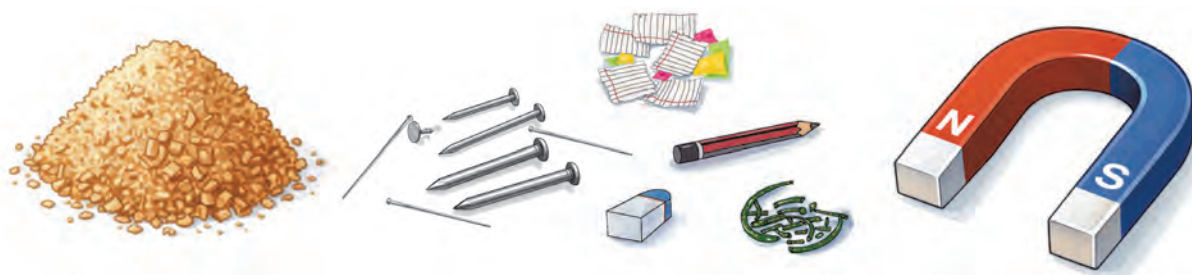
A magnet attracts iron objects towards itself. This property is called **magnetism**. This is also a form of energy.

Substances that are attracted towards a magnet are called **magnetic substances**, substances that are not attracted towards a magnet are called **non-magnetic substances**.



Try this

Take some sawdust, pins, paper scraps, small nails, bangles, an eraser, safety pins in a dish. Move a magnet over them. Observe this and write down.



Magnetic Substances	_____
Non-magnetic Substances	_____

Uses of Magnet



Loudspeaker



Electric Motor



Door Latches



Handbag



Toy



Compass



Geometry Box



Fridge Stickers

Instruction for Teachers - Teachers should introduce magnets to students by telling them the story of how magnets were discovered. Students should be given various types of magnets to handle.



Think

Which energy is used while clapping? Where is this energy obtained from?

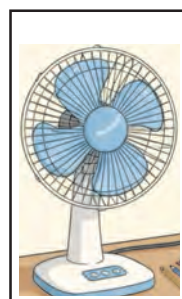


Do you know?

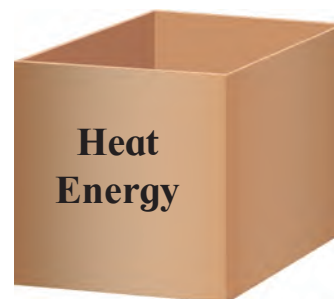
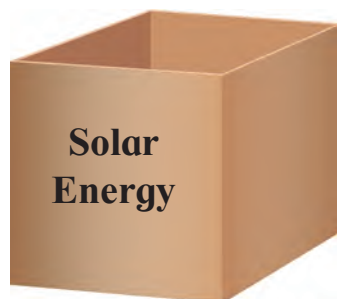
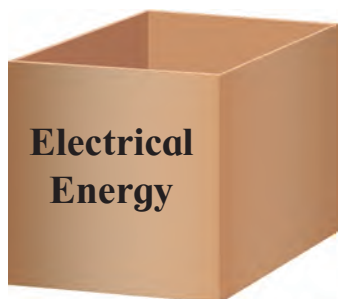
National Energy Conservation Day: This day is celebrated every year on December 14th. The main objective of this day is conveying the importance of energy conservation to the people and creating public awareness for efficient use of energy.

Let's Play a Game.

Requirements : Picture cards having images of various appliances, Empty boxes etc.



Empty boxes, each labeled with the name of an energy source



How to play the game?

Spread out all the picture cards. Each student should come forward, pick a picture card, and place it in the box of the relevant energy source. Once all the cards are placed in the boxes, each student should pick up one card and enact the use of that appliance. (For example: "I keep perishable food items safe for many days. Who am I?") Other students should identify the name of that appliance.

Instruction for teacher : Increase the number of picture cards according to your convenience. During the game, discuss measures for energy conservation as well. Plan in such a way that every student gets an opportunity to participate.

|| Let's Understand.

Light and Shadow

Look at the beam of sunlight coming through a hole in a roof sheet or through a gap in a window. What do you see?

The sunlight coming through the hole is seen travelling in a straight line because of the dust particles. This shows that light always travels in a straight line. The light travels from one place to another is called the 'propagation of light'.



Light rays pass through some objects; we can see through such objects. They are called transparent objects. Light cannot pass through all objects. Objects through which light rays cannot pass are called opaque objects.

|| Let's Understand.

Shadow Formation: When an opaque object comes in the path of light, light cannot pass through that object. As a result, a dark area is formed by the object; this is called a 'shadow'.



Observe

Observe the shape of your shadows formed in the morning, at noon and in the evening.



Evening



Noon



Morning



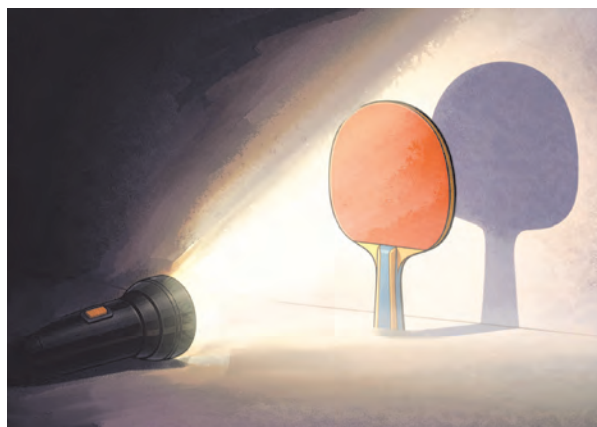
Do you know?

Zero Shadow Day: Our shadow never leaves us. But have you ever seen a shadow disappear? The day on which the sun reaches exactly overhead at the zenith is called 'Zero Shadow Day'. On this day, around noon, the shadow disappears. In India, this phenomenon occurs on different days at different locations during the summer. In Maharashtra, this experience usually occurs in the month of May. You too should try to experience your shadow disappearing on Zero Shadow Day.



Try this

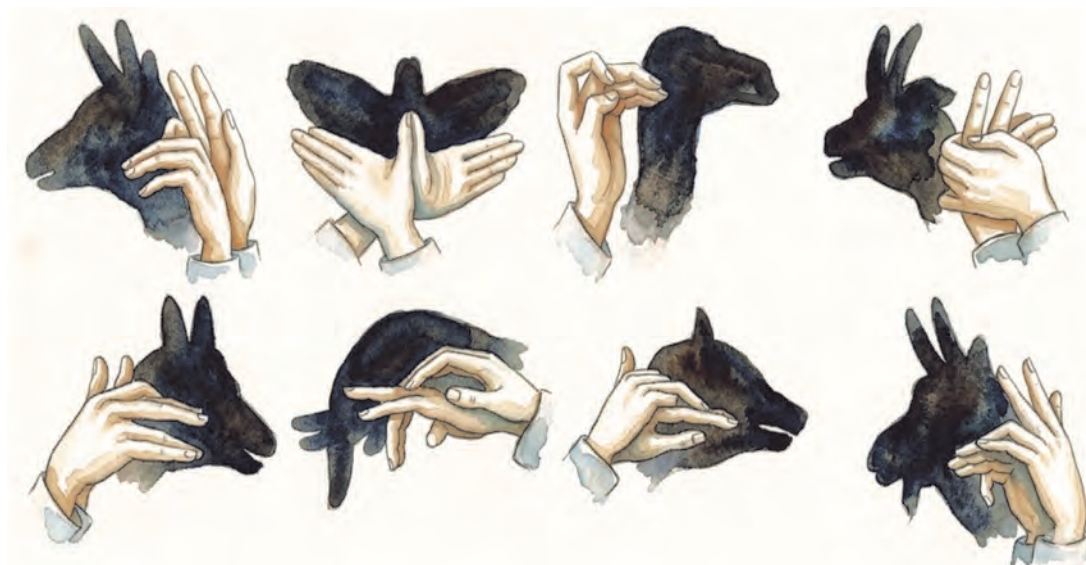
Use a torch and a bat to create a shadow of the bat on the wall. Similarly, take various other objects and see whether shadows are formed.



Let's Play a Game

The Game of Shadows!

Using a candle or a torch, create hand shadows on the wall. By positioning your fingers correctly, create shapes of various animals, various objects and enjoy the fun of shadows. Create a story based on these shadows.





We have studied this



- * Energy is the capacity to do any work.
- * Solar energy, wind energy are forms of energy.
- * The Sun, wind, etc., are sources of energy.
- * Light always travels in a straight line.
- * Light is blocked by opaque objects and a shadow of that object is formed.



Let's Revise

(A) Fill in the blanks by choosing the correct option.

(shadow / straight / energy / wind)

- (1) We need for playing, running and speaking.
- (2) Electricity generated using the wind is obtained from energy.
- (3) Light always travels in a line.
- (4) When an opaque object blocks light, a of that object is formed.

(B) Match the following.

Group 'A'

- (1) Light Energy
- (2) Heat Energy
- (3) Electrical Energy
- (4) Magnetism
- (5) Wind Energy

Group 'B'

- (a) Heating water
- (b) Fridge door
- (c) Sailboat
- (d) Sunlight
- (e) TV

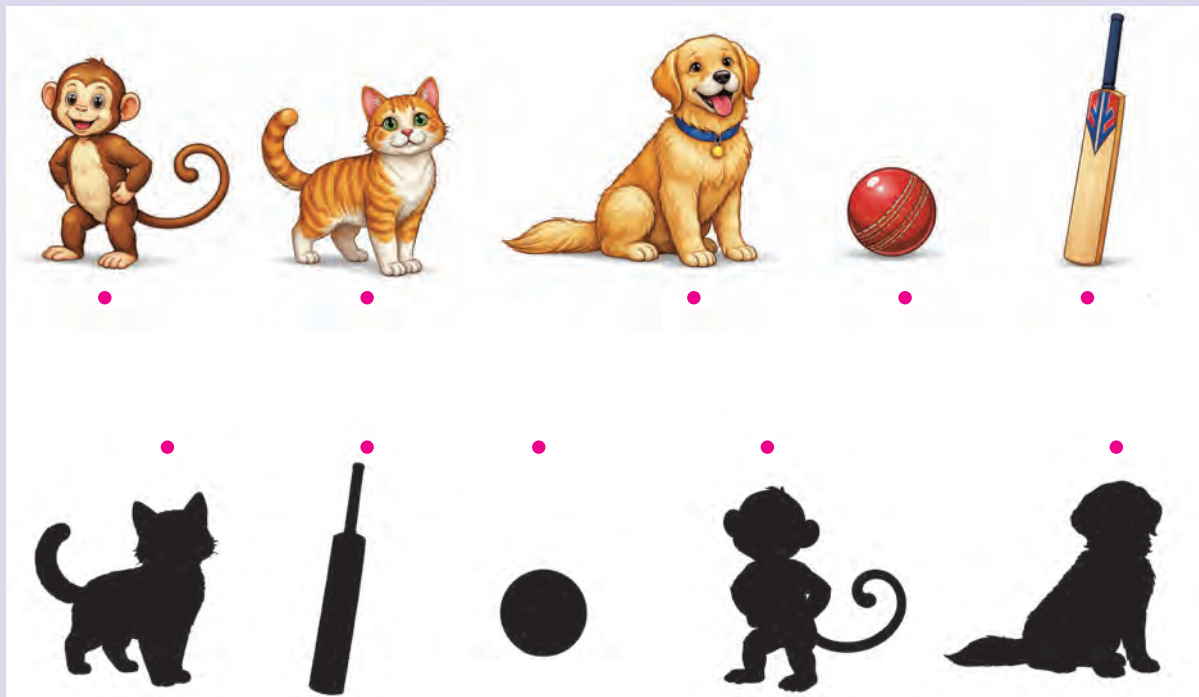
(C) State whether the following statements are 'True' or 'False'

- (1) Iron is a magnetic material.
- (2) Heat energy from the sun is used in a solar cooker.
- (3) Lights and fans should be kept off when not needed.

(D) Answer the following questions in one sentence.

- (1) Where do we get energy to do work from?
- (2) How is a shadow formed?

(E) Identify My Shadow.



(F) Make a list of various energy appliances used in the home.

(G) What measures can be taken to save energy?

(H) Arrange the given objects correctly to demonstrate the formation of a shadow.



Activity

- * Create a toy using a magnet. Draw a picture of it in notebook and colour it. Give a presentation of the toy to your class.
- * Create a slogan that explains the importance of saving electricity.

Hello Children!

If you feel uneasy about someone touching you inappropriately, you should not keep quiet. You must :

1. Not blame yourself.
2. Tell someone whom you trust.
3. You can also inform National Commission for Protection of Child Rights through the **POCSO e-box**.

When you get an unsafe touch, you may feel bad,
confused and helpless.
You need not feel “bad” because it’s not your fault.



Press This Button

POCSO e-box available at ncpcr@gov.in

If you are below 18 years of age, and are troubled or confused
or abused or in distress or know some other child who is...

*Call 1098...because some numbers are good!
They change lives!!!*



CHILDLINE 1098 - a national 24 hours toll free
emergency phone service for children in distress is an
initiative of CHILDLINE India Foundation supported
by Ministry of Women & Child Development.



Provide students age-appropriate guidance on recognizing and understanding
good touch and bad touch, ensuring their physical and emotional well-being.



MAHARASHTRA STATE BUREAU OF TEXTBOOK PRODUCTION
AND CURRICULUM RESEARCH, PUNE.

आपल्या सभोवतालचे जग भाग १
इयत्ता चौथी (इंग्रजी माध्यम)

(For Free Distribution)



समग्र शिक्षा
Samagra Shiksha