مـــدرستنـــا الثـــانـــويـــة الإنجـلـيـزيـة، الشـارقـة
OUR OWN ENGLISH HIGH SCHOOL, SHARJAH
A GEMS SCHOOL

EDUCATION

PRIMARY SCIENCE CURRICULUM (2023-24)

Science Curriculum in the Primary (Grades 1 – 5)

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Science Curriculum in the Primary (Grades 1 – 5)

Introduction

The Science Curriculum in the primary is constructed based on the needs, interests, purposes and abilities of the learners. It focuses on helping the students comprehend the fundamental concepts in Science through experimental and inquiry-based learning.
The Curriculum is designed to ensure all round development of every student. Apart from being comprehensive, curriculum is very practical and stresses the importance of developing the total personality of the child and achieve the required academic success.
It also enables students to become confident learners.

Overview

The Curriculum fully meets the requirements of CBSE and the Ministry of Education, UAE and is planned to meet the holistic development of all students.
The elementary years can be seen a period for basic education. During the five years of primary education, the students' intellectual, aesthetic, physical, and cultural growth and development are intensified so that they have a clearer sense of their strengths, interests, goals, values, ethics and attitudes.
The Science Curriculum emphasizes the need for a balance between the acquisition of science knowledge, skills, values and attitudes. This Curriculum visualizes the learning of Science relevant and related to daily life, society and the environment and to make the subject real and meaningful to the learners. It is interdisciplinary, project-based, inquiry based and research-driven. It is designed to challenge students and to provide the needs of all groups of students to make them a 21st century learner and inquirer.

Aim of the Curriculum

The curriculum aims to enable all young students to become:

- interested learners who enjoy learning, make progress and achieve expected outcomes.
- global contributors to meet challenges of the present world.
- confident individuals who are able to lead healthy and fulfilling lives.
- responsible citizens who make a positive contribution to society.

The curriculum is also planned with the aim of providing a broad, balanced, and relevant course of study for all the students and every lesson is integrated to foster and develop best practices among all students.
The science curriculum has been designed in such a way that effective learning happens in an interactive classroom. It provides all opportunities for learning, as every learner is unique in the heart of the curriculum. The teacher creates a learning environment that will relate the concepts with real life experiences and enrich the learning through extended activities and inquiry based learning to develop their sense of enquiry and research.

Thus, teaching and learning in the primary enables all the students to become effective learners with the teacher as the facilitator of learning.

The mode of learning is based on the basic domains of:

- Knowledge & Understanding
- Observations
- Application
- Reasoning skills.
- Critical thinking

Vision of the Curriculum

"Every child matters at the heart of the Curriculum"

Mission of the Curriculum

The learning outcome of the curriculum is based on the Mission statement of the school:-

'***Striving for excellence, striding towards success and seeking new horizons of personal growth and worth'.***

Science education involves teaching students to be equipped with the skills, to be able to use scientific knowledge to identify problems, and to draw evidence-based conclusions in order to make decisions about the global world and the changes made to it through human activity.
It aims to promote critical, creative thinking skills and effective communication skills. It is a powerful instrument for change and the key to prepare learners for global challenges.

Objectives of Primary School Science Curriculum

1) It enables students in acquiring knowledge with the understanding for application in their daily lives, so that they are motivated to learn science through activities.
   Hence they are able to ……
   - solve - problems and use thinking skills.
   - communicate effectively.
   - become confident, responsible and productive citizens who are able to cope with the changing and progressive nature of Science and Technology in the world.

2) It enable students to develop 21st century competencies which would …….
   - equip them to acquire life-long learning skills, attitudes and values which are useful in everyday life.
   - enable them to show care and concern for people and the environment.

Providing Individual Differences

'Each child is important and each capacity is respected'

In any given classroom, students may demonstrate a wide range of learning styles and needs. Teachers plan activities that recognize this diversity and give students performance tasks with respect to their particular abilities so that all students can benefit from the teaching and learning process.

Providing a differentiated curriculum is necessary to fulfil the learning needs of all groups of pupils. Appropriate activities are planned to suit the levels of students' ability. Teachers provide support and guidance to the low achievers. Extra worksheets are provided to students in their vaults on Phoenix. Assessment papers are modified for students with severe learning difficulties.
IAP is provided for students identified with special needs with the help of counsellors. Groups are organized in a flexible way to give extra help to some children during the learning activities. Teachers provide advanced level questions and opportunities for extended learning and research / enquiry work to G & T within the class rooms.

OWNEX, Inter-school Science quiz, Science competitions, exhibitions and Big Picture are platforms for G & T students to show their talents and abilities.

Cross-curricular learning

Science as a core subject can be related to other subjects like Math, Social studies, English, Moral instruction and Art. A large number of scientific formulae are represented in the form of mathematical expressions, for which it is necessary for the student to have sound mathematical basis. Numerical skills are applied in solving Science problems.
Language is the principal means of communication in every aspect of the learning process. In science, students use a range of language skills, they build subject specific scientific vocabulary, interpret diagrams and charts, and read instructions relating to investigations and procedures.

Primary Lab

The **Science lab in the Primary** is a workplace for **scientific** research. It is a facility that provides controlled conditions in which **scientific** research & experiments are performed. Students here are encouraged to make predictions, carry out investigations and draw conclusions. Performing the experiments help students to remember the concepts better.
Virtual experimenting App: GIZMOS is used to enhance the observation skills of the students. Students ae encouraged to try out different approaches and simulations in their experiment and analyze the data to conclude the concepts.

Student learning is linked to daily life situations. Application of learning in real-life makes content easier to understand. To develop curiosity in science, one period in a week is assigned to Science Lab activity, which is an effective way to make students involved in learning.

STEM / STEAM activities (which involves science, technology, engineering, art and mathematics) are also planned in the Science Lab. These activities promote involvement, problem solving, and creative thinking in learning.

This year (2023-24) we plan to take STEM activities further to DESIGN THINKING:
Focusing on problem solving and creative thinking skills of students, they will be given a real-life scenario / situation, they will be encouraged to analyze the situation & identify the problem in it and work on creating innovative solutions.
Students themselves will sketch out a plan to approach it. Note down the required resources and chalk out the procedure to go about it.
Students then make a model of the prototype and test / explain its working.

Students are encouraged to maintain a Science journal to record and reflect on inquiry-based observations, activities, investigations, and experiments. These Science Journals will also provide an excellent way for students to communicate their understanding of science concepts.

Innovation Studio

Vision - *'Inspire students to think, design and innovate'.*
Mission- 'Provide opportunities for students to interact with latest technologies and tools through a multi-disciplinary approach to achieve global standard.'
It's a place where students become lifelong learners and develop 21st-century skills which is the key to the survival of the human race. We provide not just the vision for this new world of learning but the real-world information and community connections to make it a reality.
The students develop the ability to:

- acquire the ability to design and create a model with their imagination and information.
- provide opportunities for the enhancement of learning.

Digital learning / Innovative practices

The 21st century learners can be rightly referred to as 'digital natives.' They live in a digital age where they have access to a vast amount of information at their fingertips. They are exposed to the knowledge explosion and are probably born with ICT skills.
Students are digitally literate, which can be tapped in a useful way. Digital technologies create new opportunities for individualized learning.
Innovative approaches such as flipped classroom, Online classes on SKYPE; interactive talk with an expert/Doctor on health and hygiene issues or any other relevant topics. Testmoz, Kahoot; Padlet, Nearpod, Mind mup, Class Kick, CANVA, Quizzes, taking students on Virtual tours, Movie making, etc. are implemented consistently in the Primary through Bring your device initiative.

OWNEX

An exhibition which showcases the exciting inventions of the budding inventors of OOEHS, Sharjah.

It is organized every year with a view to encourage and inculcates scientific / environmental temper amongst students. It's a platform for students to explore the world around them by applying the skills learnt in school to research, enquire, create and compute thus enhancing 21stcentury skills of learning.

Instilling Values and Skills across Curriculum

Development of Life Skills

The fast life of society have strongly impacted the life styles, attitudes and life skills of the learners. The younger generation is seen to be more active, responsive and curious. The learners have to be equipped with relevant emotional skills and competencies so that they are able to understand their role in the society in a more realistic manner.

Emphasis on teaching emotional skills (empathy) and life skills (problem solving and decision making) is given priority in the curriculum. The curriculum provides opportunities for empowering learners with emotional skills and competencies. It is essential that a child grows up to be a compassionate human being. At the same time, it is essential that they learn to shoulder their responsibilities at an early age.
The aim behind developing life skills in schools is to capture the true essence of childhood, self-discovery and a desire to explore the world. Developing life skills help the holistic development of children and its significance cannot be ignored. Life skills consist of thinking skills, social and emotional skills, effective communication skills, collaborative skills, and leadership skills too.

The curriculum also offers extra opportunities to work with parents and the community to inculcate the desired values to become responsible individuals of the society. Teachers along with the help of counsellors suggest suitable approaches to develop their life skills that will help the students to be successful in life.

Instilling Eco-values across the Curriculum

Our planet and its inhabitants are facing a growing number of issues related to the environment. Education is the key for creating environmental awareness.
To instill among students the values of positive behavior, a sense of responsibility and empower them with sustainable practices, the Eco Club of the school provides opportunities to explore and create solutions through various Eco initiatives. The school is encouraging many programs to create an eco-friendly attitude in students. We have a very active Eco-club which organizes 'Newspaper collection' and 'Can-collection drive' every year.

Eco Club Vision: *'To foster a generation of environmentally conscious citizens capable of positive action.'*

Eco Club Code: *'A healthy environment and a healthy economy; from takeover to makeover.'*

Eco Values

- To encourage the child behave responsibly to protect and conserve the environment to promote sustainable development.
- To enable the child to communicate ideas, present work and report findings using a variety of media.

Eco - Activities

- Eco Assemblies
- Clean-up Campaigns
- Field trips and visits
- Poster making
- Best out of waste
- Environment Day/ Earth Day activities
- Recycling Campaigns (collection of cans, newspaper etc.)

Earth Day

Every year, students of OOEHS celebrate Earth Day which is on 22nd April. Students are shown videos, clips which will create awareness and appreciation of the Earth's natural environment. Students pledge to save and protect their environment and learn to appreciate the uniqueness of our planet Earth with its incredible biodiversity.
On this day various activities are conducted to understand the biodiversity and how should we protect our nature. Sustainable development is embedded across the curriculum, green values are integrated in the teaching and learning of all subjects. The aim of the Eco Club is to encourage all stakeholders to transform Our Own into an Eco School – a symbol of Foundation for Environmental Education.

Thematic Weeks, Science Week and Assemblies

Thematic Weeks are organized every month based on any one SDG and are linked to all the subjects. Various strategies are designed by teachers to create awareness about the sustainable developmental goals through thematic week activities. Students create STEM / STEAM projects and do experiments in groups to contribute towards the main goal of Saving the Mother Earth.

The objective of conducting Science week is to make students realize the importance of Science in their daily life. During this week, various activities are conducted mainly investigative experiments, STEM / STEAM based activities which encourage students to think critically and develop their problem-solving skills. Poster making, Science Quiz, Role Plays based on Scientific concepts / topics; student workshops – EDUQUER and research work is also promoted in the Science Week.

Assemblies are conducted as a part of gathering of school community and to share various aspects of life that are of worth. It acts as a medium for communicating matters that are significance of today's world.
Assembly is a team work of students under the guidance of the class teacher. Students get a chance to show their talents and skills which in turn creates positive effect on their self-development and gain self-confidence.
Assemblies act as one of the main ways to create positive ethics and promote our value-based education.
The values they learn from assemblies act as the foundation for the development of personal, social, spiritual, moral and cultural aspects of the curriculum.

Assessments - An Integral Part of Teaching and Learning

Assessment is an integral part of the teaching and learning process. It involves gathering information through various assessment techniques to grade students. Assessments provide information to the teacher about students' achievement in relation to the learning objectives. Accordingly, the teacher makes decisions about what should be done to improve the teaching methods and enhance the learning of the students.

- Assessment provides feedback to ***students***, allows them to understand their strengths and weakness. Through assessment, students can monitor their own performance and progress. It also points out to them in the direction they need to improve further.
- Assessment provides feedback to ***teachers*****,** enables them to understand the strengths and weaknesses of their students. It provides information about students' achievement of the learning outcomes as well as the effectiveness of their teaching.
- Assessment provides feedback to ***schools*****.** The information gathered facilitates the promotion of students from one level to the next. It also allows the schools to review the effectiveness of their instructional program.
- Assessment provides feedback to ***parents*****,** allows them to monitor their children's progress and achievement

Internal Assessment

Internal Assessment Structure

The assessment scheme for Grades 1-5 has been designed on Term Assessment basis with gradual increase in the learning assessment as the students move forward. This would prepare the students to cover almost the whole syllabus of the academic year and would thus, ensure the 'quality of education'.

Scholastic Area: Assessment structure and examination for grades 1-5 comprises of two terms.

Grading Scale for Scholastic Areas

MARKS RANGE	GRADE
91– 100	A1
81– 90	A2
71– 80	B1
61– 70	B2
51– 60	C1
41– 50	C2
33– 40	D
32 & Below	E (Needs Improvement)

The internal assessment marks include Term 1 and Term 2 as explained below.

FINAL MARKS (100)	
Term 1	Term 2

TERM 1
100 marks
(PT + Half yearly + Notebook - 5marks + SEA - 5marks)

- **Periodic Test**
  Grades1&2-20 marks
  Grades3&4-30 marks
  Grade5 - 40 marks
- **Half Yearly Exam**
  Grades1&2-40 marks
  Grades3&4-60 marks
  Grade5 - 80 marks

TERM 2
100 marks
(PT + Final Exam+ Notebook - 5marks + SEA - 5marks)

- **Periodic Test**
  Grades1&2-20 marks
  Grades3&4-30 marks
  Grade5 - 40 marks
- **Final Exam**
  Grades1&2-40 marks
  Grades3&4-60 marks
  Grade5 - 80 marks

Portions for the exams are given to the students much before the exams. Final exam portion includes 10% of the first term syllabus, mainly significant topics or the topics which need to be revised after the analysis of 1st term results.

1. **Marks of Periodic Tests -** One Periodic test out of 20 / 30 / 40 will be conducted in a term.

2. **Notebook maintenance (5 Marks)**

Note book maintenance is assessed at the end of each term based on the following parameters.

- Regularity
- Assignment completion
- Display of neat labelled illustrations
- Research work/extended activities
- Neatness and upkeep of the note book

3. Subject Enrichment Activity (5 Marks)

These are subject-specific activities aimed at enhancing the understanding and skills of the students. These activities are to be carried out throughout the term, however, they should be evaluated at the term-end.

Subject Enrichment activities comprises of performance based assessment which are to be conducted twice a year. The following modes are used for SEA:

- Hands on / lab activities
- Research work projects
- Power point presentations
- model making

In addition to the written formative tests, teachers conduct AFL - Assessment for learning during the lesson to monitor the progress during the lesson.

External Examinations

Assessment of Scholastic Skills through Educational Testing (ASSET)

ASSET is a skill-based assessment. It uses multiple-choice questions to focus on measuring how well SKILLS and CONCEPTS underlying the school syllabus have been understood by the student. ASSET helps to identify the strengths as well as the knowledge and skills a student needs to succeed in specific subject areas.

Cognitive Abilities Test 4 (CAT 4)

The Cognitive Abilities Test (CAT) is a suite of tests that assesses a student's reasoning (thinking) abilities in key areas that support educational development and academic attainment.

TIMSS

The **TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY** (**TIMSS)** is an international assessment of the Mathematics and Science knowledge of students around the world. It measures trends in Mathematics and Science achievement at the 4th and 8th grade levels and enables comparison of attainment levels of our school with UAE schools and International average scores.

Children are given ample practice for the test. Inclusion of TIMSS / ASSET portions and the same style questions in daily lessons and assessments is a regular practice.

CASE

A common examination in Science for students of Grades 3 - 7. Skill-based questions cover knowledge, understanding, application, higher order thinking skills. Detailed performance analysis is carried out to help students to establish common benchmarks in science across GEMS Asian schools.

Teacher Resources

Syllabus

The **syllabus** (an outline of topics to be covered in an academic year) is set by the team of teachers. They describe what learners need to know in each term, topics to be assessed in each term and how they will be assessed.

APOW

APOW is a plan of what portions will be covered in the whole year. It gives the detailed plan on weekly teaching. It makes sure all teachers deliver their lessons in a uniform manner. It can also support communication and planning between departments. Once finalized, it can be used to write SOW and daily lesson plans.

Schemes of Work

A **Scheme of Work or SOW** is a detailed plan that defines **work** to be done in the classroom. It defines the structure and content of a Topic / Concept to give an idea on how teachers deliver the course. It maps out clearly how resources and class activities (e.g. teacher-talk, group work, practical's, discussions) and assessment strategies will be used to ensure that the aims and objectives of learning are met.

Textbooks and Publisher Resources

From this year the Primary is following "The Enhanced Science" books published by Collins
Text books are reviewed annually and provisions and adjustments are made to bridge the gaps identified.

Curriculum Mapping

The curriculum is planned to ensure horizontal and vertical progression across grades and phases.

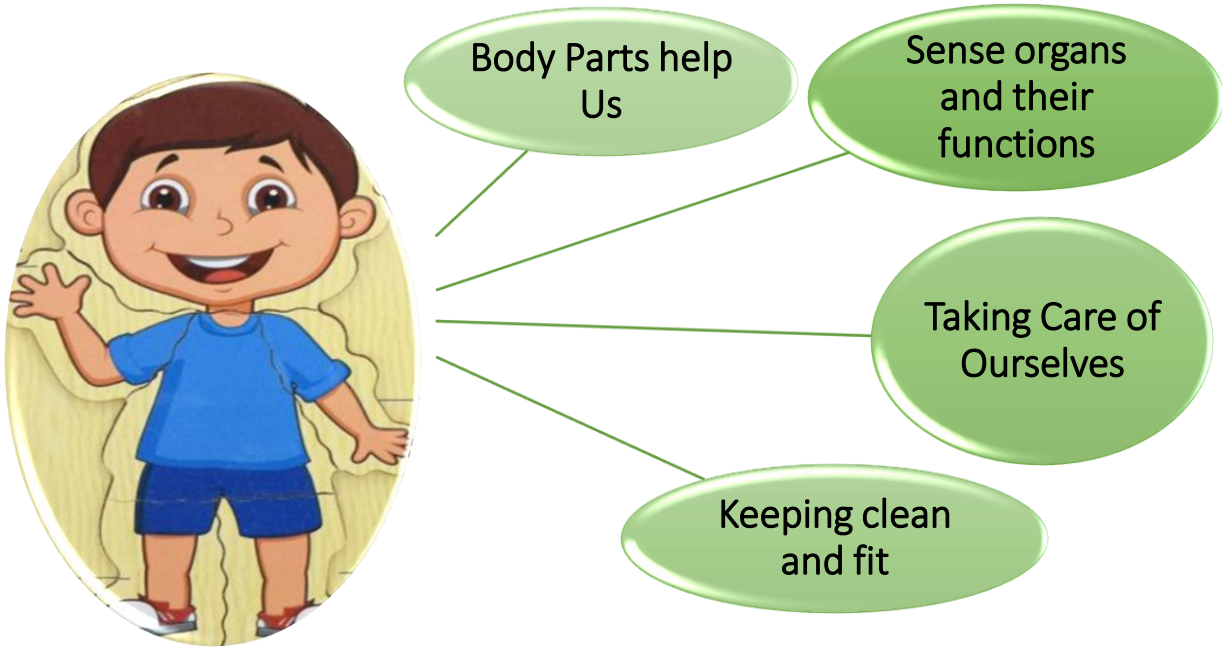
Curriculum Framework

The systematic structure of the curriculum as set out in document specifying the way in which learning and assessment is organized. The school conducts regular reviews and develops its curriculum to ensure progression in all subjects in line with the CBSE, MOE Sharjah, the UAE National Agenda and ASSET / TIMSS. The curriculum includes interesting and relevant program which develop students' knowledge, understanding and appreciation of the heritage of the UAE. The HOD's and subject coordinators identify gaps (if any) and make provisions to incorporate the same into the curriculum for the next session.

A comprehensive science curriculum built on the above foundations is elaborated below.
For pupils with special needs, it will be adapted to provide inclusive access to all learners.

MY BODY

GRADE 1



My Body- Parts help Us ➢ Name the different parts of our body and state their functions / uses.	Sense Organs and their Functions ➢ Relate the sense organs to their functions. ➢ Explain the importance of sense organs.
Good habits-Taking Care of Ourselves ➢ Recognize the importance of good habits. ➢ Classify good and bad habits.	Keeping Clean and Fit ➢ State the importance of being fit. ➢ Sort the food items which help to keep fit. ➢ Discuss ways to keep oneself fit.

Real life: Riya can tell what is being cooked in the kitchen even before she sees it. Explain how?
SDG: 13 – Climate Action - Research on effects of air pollution on climate change.

MY BODY

GRADE 2

BONES AND MUSCLES

SKELETON

POSTURE

Skeleton , Bones & Muscles ➢ Recognize the importance of skeleton to our body. ➢ Explain the importance of bones and muscles in human body.
Posture ➢ Recognize correct postures. ➢ Explain that correct postures is important for a healthy body.

Real life: Demonstrate correct postures of sitting, standing and walking position.
SDG: 3 – Good Health & Well Being
Demonstrate correct postures of sitting, standing and walking position**.**

MY BODY

GRADE 3

Characteristics of living things

Different systems of the body

Characteristics of living things	Different systems of our Body
➢ Describe the characteristics of living things ➢ Explain the requirements of living things for their survival. ➢ State the breathing organs of different groups of living things. ➢ Explain the process of germination of a seed with the help of illustrations.	➢ Explain the importance of cells, tissue and organs in making a body ➢ List the organs of different body systems and state their functions ➢ Describe how digestion of food takes place in our body. ➢ Analyze the importance of healthy eating habits for proper digestion. ➢ Explain the process of respiration and use of oxygen in our body. ➢ Discover the importance of exercises to keep our body fit and healthy

CCL with Math: If you have your breakfast at 7:00am, what is the ideal time to have your next meal? Give reason to justify your answer your answer.
SDG 3: Good Health & Well Being- importance of exercises to keep our body fit and healthy

MY BODY

GRADE 4

TEETH

DIGESTION

MICROBES

TEETH	DIGESTION	MICROBES
➢ List the functions of teeth. ➢ Differentiate between the two sets of teeth. ➢ Illustrate the structure of a tooth. ➢ Describe the functions of each part of a tooth. ➢ Distinguish between the different types of teeth and their uses. ➢ Assess correct methods of taking care of teeth.	➢ Describe the role of mouth, stomach and small intestine in the digestion of food. ➢ Analyze the importance of fibre rich food in removing the undigested food out of the body. ➢ Judge between healthy and unhealthy eating habits and activities to have proper digestion.	➢ Explain the term – Microbes. ➢ Name the four types of microbes and the diseases caused due to them. ➢ Differentiate between the useful microbes (bacteria and fungi).

Cross Curricular link with English: - Write a story on food, focusing on the four different types of teeth and their functions.

SDG 3: Good Health & Well Being-Judge between healthy and unhealthy eating habits and activities to have proper digestion.

MY BODY

GRADE 5

Skeletal system

Nervous system

Structure of Sense organs

Skeletal system	Nervous system	Sense organs
➢ Illuminate the functions of skeletal system ➢ Identify label the parts of the skeletal system ➢ Describe the functions of joints ➢ Compare and contrast the different joints in our body.	➢ Describe the structure of nervous system ➢ Recognize different parts of nervous system ➢ Schematize reflex action	➢ Explain the structure of different sense organs ➢ Illustrate the structure of eye and ears

CCL to Math:- Find out the daily requirement of calcium, sodium and potassium required for an adult .
SDG: 3 - Good and health and well being - Why do people in UAE suffer from Vitamin D deficiency? How can we find a solution to this problem?

Food & Health

GRADE 1

We need Food

Food for Growth, Energy and Health

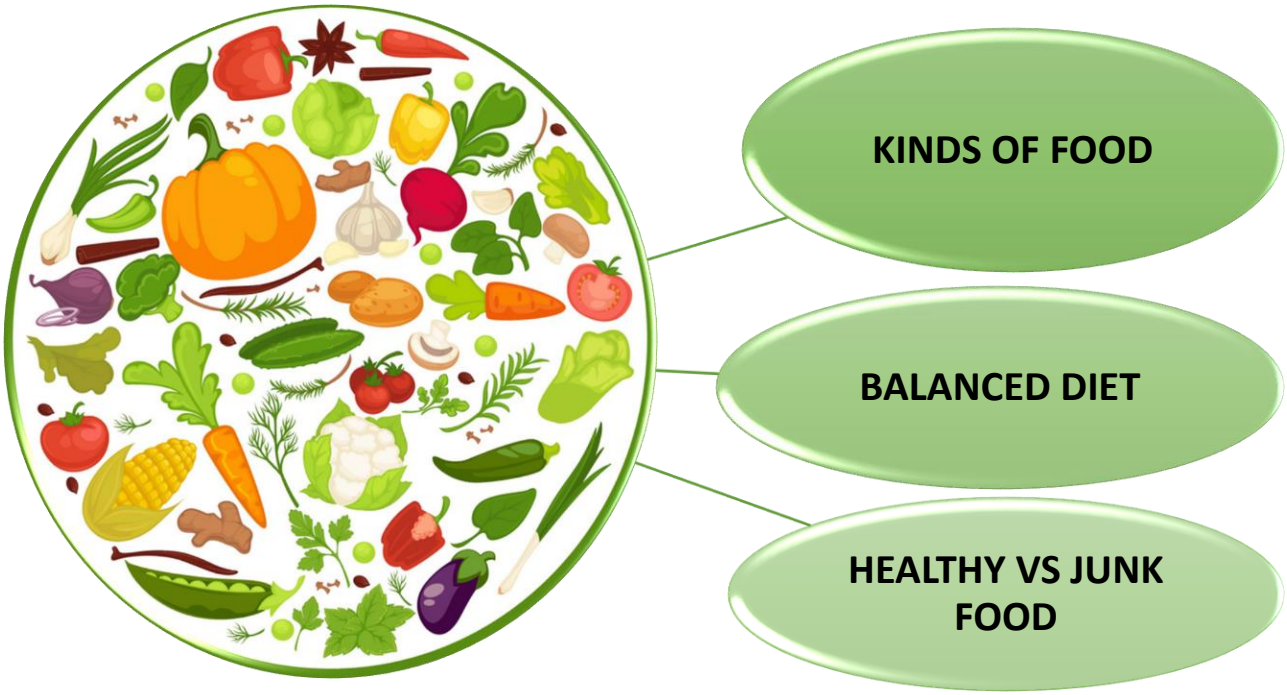
Healthy and Junk food

We need Food ➢ Recognize the importance of food we eat	Healthy and Junk Food ➢ Recognize the role of healthy food in our daily life. ➢ Compare the different types of food as healthy and junk food.
Growth and Energy ➢ Sort the food as food that helps us to grow and food that gives us energy.	

Real Life: Even though a burger is made of healthy things, yet it is called junk food. Why?
SDG: 3 Good Health & Well Being -How does the food choices affect one`s health & well-being?

FOOD AND HEALTH

GRADE 2



Kinds of food	Balanced diet	Healthy Vs Junk food
➢ Differentiate the food into three groups- energy giving food, body building and protective food.	➢ Correlate the different types of food to a balanced diet.	➢ Examine the effect of healthy food and Junk food on our health. (Debate)

National Agenda: Research and find any one initiative taken by UAE government to reduce child obesity.
SDG: 2 – **No Hunger** How can you help in removing hunger from this world and make the world a better place?

FOOD AND HEALTH

GRADE 4

FOOD PYRAMID & EXERCISE

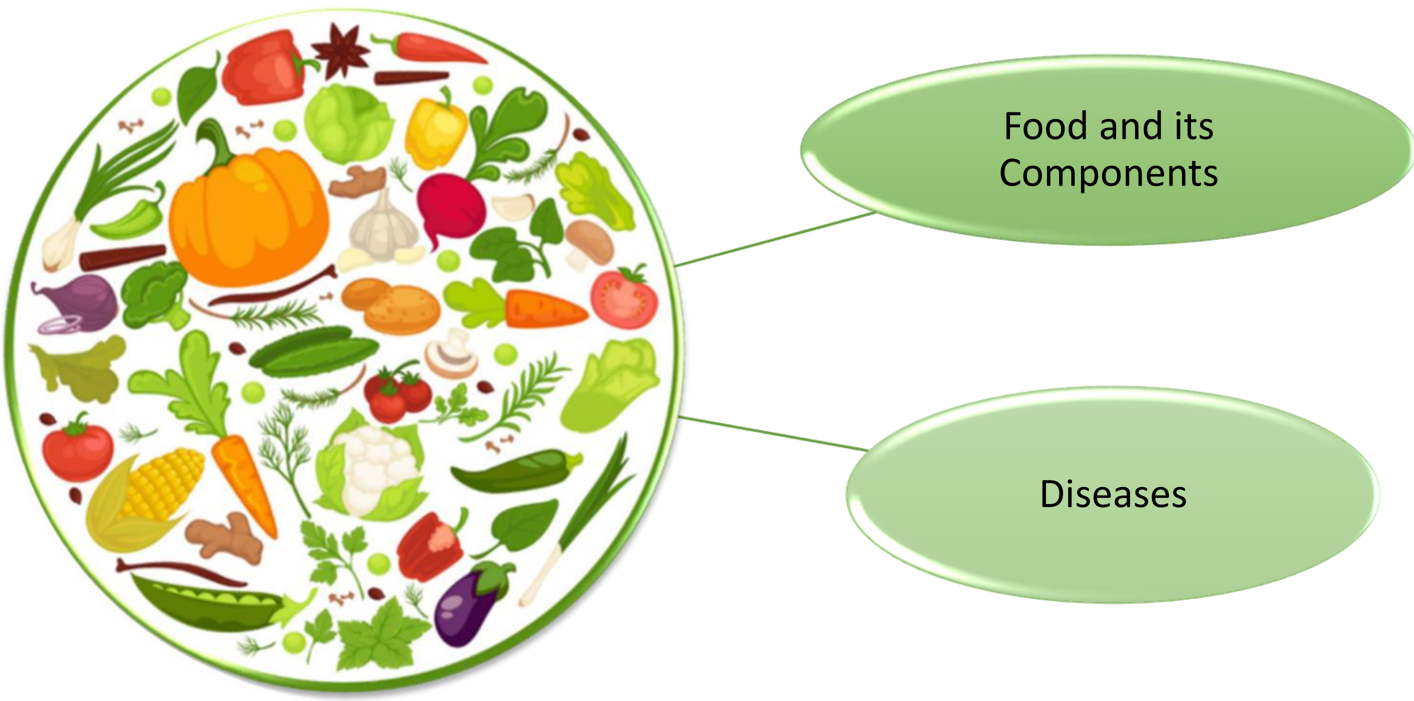
COOKING AND PRESERVING FOOD

FOOD PYRAMID & EXERCISE	COOKING & PRESERVING FOOD
➢ Name the various nutrients present in food and explain their functions. ➢ Explore and recommend balanced meal menus for different people (athletes, young children, diabetic patients). ➢ Illustrate a food pyramid and show the amount of nutrient requirement for a healthy person. ➢ Prove that physical fitness keeps our body fit and healthy.	➢ Explain the need to cook food and different types of cooking ➢ Evaluate current nutritional habits and create a plan for developing healthy cooking. ➢ Analyze the different ways food can be preserved.

Cross curricular link to PE – Investigate and find pulse rates while doing different activities such as resting, jogging (in the same place), exercising and again resting.
SDG 3 & National Agenda- Prove that physical fitness keeps us healthy and fit.

Food and Health

GRADE 5



Food and its Components	Diseases
➢ List the various important components of food ➢ Recognize the importance of each nutrient in our body. ➢ Summarize the advantages of a balanced diet and design it	➢ Compare and contrast communicable and non-communicable diseases ➢ Analyze the ways through which diseases are spread ➢ Predict and record the prevention methods

CCL to SST- Collect information on traditional food of UAE and its recipe. Find out its nutrition value.
SDG: 3 – Good Health and Well Being - Why do most of the people in the UAE suffer from the deficiency of Vitamin D?

SAFETY

GRADE 1

- Safety in different places
- Safety Equipments & people
- First Aid Kit

Safety First ➢ List the safety rules to be followed at a given place or situation. (class room, playground, road, bus, home, pool) ➢ Create awareness about stranger safety and state ways of protecting self. ➢ List reasons for fire accidents. ➢ State measures to avoid fire accidents.	**Security and Safety people** ➢ Identify the use of different safety equipment used. ➢ Explain the role of different people in keeping us safe. ➢ List the emergency helpline numbers used in UAE. **First aid** ➢ List the things kept in First aid kit. ➢ Explain the importance of it in the first aid box.

CCL with English: List the places where safety rules should be followed. (Nouns)
National Agenda: List the emergency helpline numbers used in UAE.
SDG : 3 – **Good Health & Well Being** - Stranger and Internet safety

SAFETY

GRADE 2

SAFETY RULES IN DIFFERENT SITUATIONS

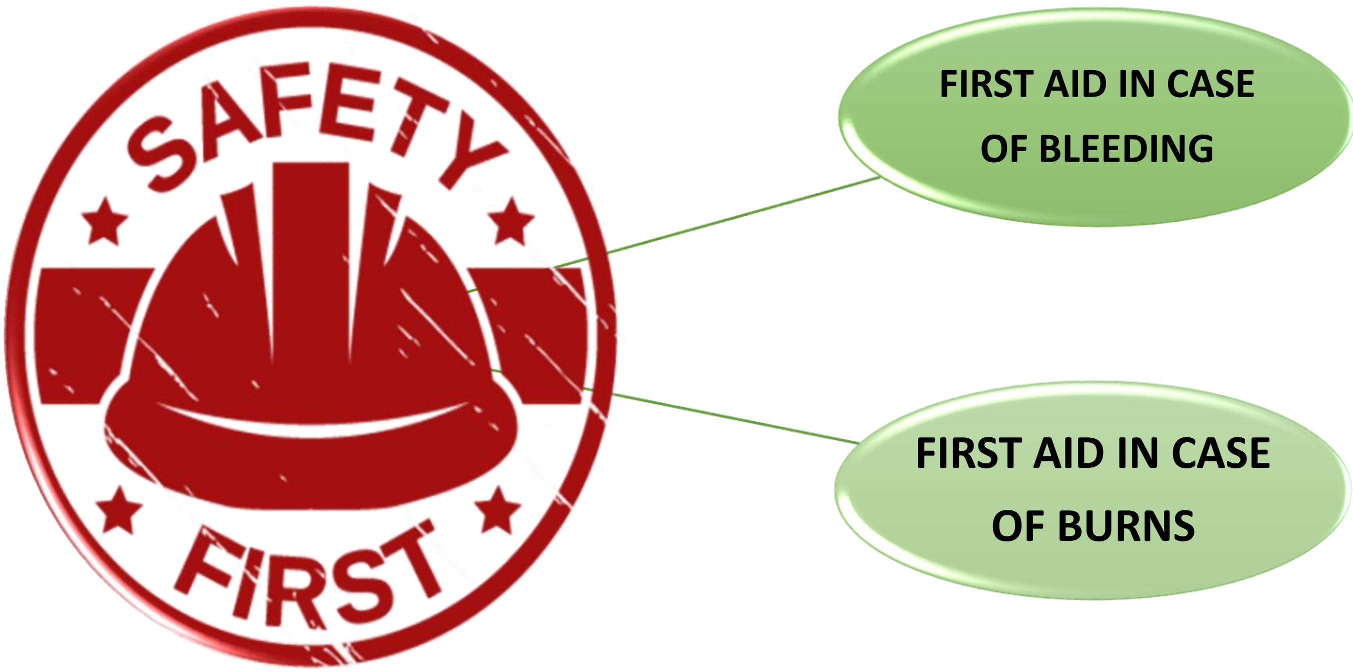
ROAD SIGNS

Safety rules in different situations	Road signs
➢ Apply safety measures in different situations. (Fire Safety, Road; Swimming pool; Electrical Safety)	➢ Analyze the importance of road signs. ➢ Explain the safety measures to prevent road accidents

Cross Curricular link to ME: The students of Grade 2 are planning to visit the Sharjah Cultural Museum. What are the safety measures they need to follow?
SDG: 3 – Good Health & Well Being**.** Illustrate any one safety sign which can be seen near the pool.

SAFETY

GRADE 3

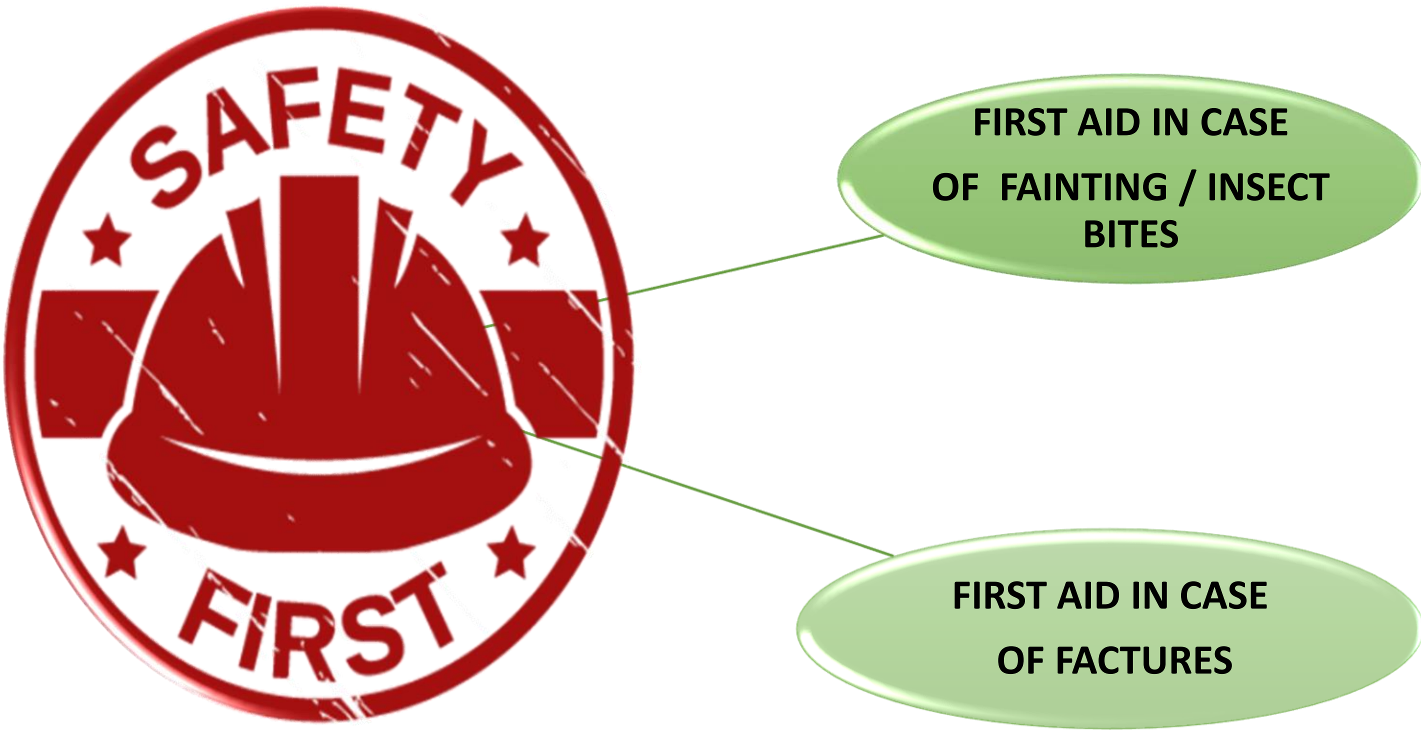


First Aid in case of Bleeding	First Aid in case of Burns
➢ Discuss and demonstrate the first aid in case of bleeding. (Nose bleed, wound bleed)	➢ Discuss and demonstrate the first aid in case of burns.

Real Life Application & National Agenda: Safety measures to be taken in case of fire
SDG: 3 – Good Health & Well Being**.** Safety in case of fire.

SAFETY

GRADE 4



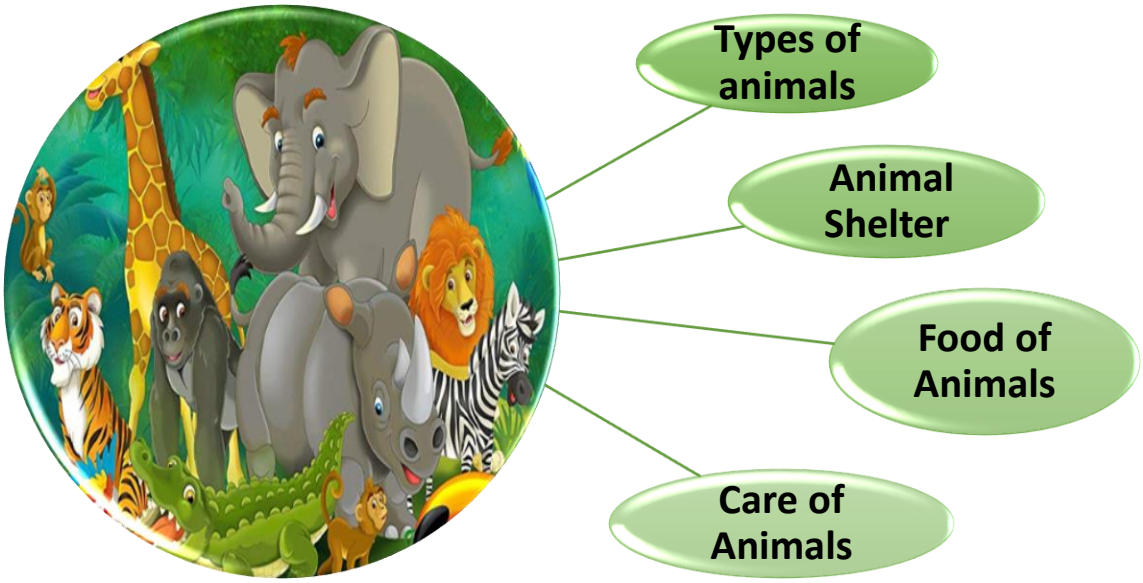
Discuss ways to deal with emergencies at different places. (Fire, Internet, etc.)	Realize the importance of first aid.
Research about the causes of fainting and first aid to be provided.	Demonstrate the first aid to be given in case of insect bites / fractures.

Real life Application: First aid procedures in case of different emergencies.

SDG 3: Good Health & Well Being**:** Internet safety

ANIMALS

GRADE 1



Types of Animals ➢ Classify the animals as big, small; live on land, trees & water	Animal Shelter ➢ Identify the different types of shelters animals need. ➢ Classify different animals, based on natural and manmade shelters.
Food of Animals ➢ Identify the different types of food that animals eat. ➢ Classify animals as herbivore, carnivore or omnivore based on the food they eat.	Care of Animals ➢ List the ways we can take care of animals.

National Agenda: Name the organizations that care for orphaned animals in UAE.
SDG: 15 Life on Land - Importance of forest for shelter of animals.

ANIMALS

GRADE 2

HABITAT OF ANIMALS

EATING HABITS OF ANIMALS

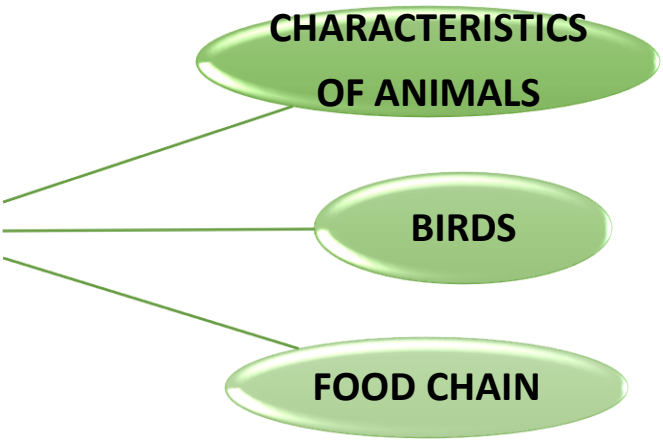
ANIMALS GIVE US

Habitat and Eating Habits of animals	Animals Give us
➢ Categorize animals according to their habitat. ➢ Classify animals according to their eating habits.	➢ State the importance of animals. ➢ List ways to save (conservation) animals

National Agenda: Students will research and find out the initiatives taken by UAE government to protect camels?
SDG: 12: Responsible consumption and production
Animals are killed for leather, horns and medicinal purpose. What would happen if we do not stop it?

ANIMALS

GRADE 3



Characteristics of animals ➢ List the different breathing organs of animals ➢ Compare the ways of movements in animals. ➢ Explain why animals need to move from one place to another.	Birds ➢ Realize the importance of birds to this world. ➢ Explain the features of birds that help them to fly. ➢ Identify the feet and claws depending on the feeding habits. ➢ Analyze the different feeding habits of birds depending on the type of beaks they have. ➢ Research on Migratory birds and analyze the reasons for their migration.
	Food Chain ➢ Illustrate through a food chain how animals are dependent on plants. ➢ Explain why all food chains begin with plants and not animals. ➢ Analyze the importance of different animals in maintaining the food chain.

CCL with Math:- Interpret the bar graph on different feeding habits of animals and answer the questions.
SDG: 15: Life on Land - Importance of different animals in maintaining the food chain.

GRADE 4

ADAPTATIONS IN ANIMALS

ANIMALS IN DANGER

REPRODUCTION IN ANIMALS

Adaptations in animals

- Explain the importance of adaptations among animals.
- Describe various physical adaptations that help different animals to survive in their environment.
- Examine the distinguishing features like teeth structure and body parts of different types of animals.
- List and describe different ways by which animals protect themselves.
- Explain the term camouflage with examples.
- Discuss various habits that animals develop to suit their surroundings
- Explain terms like migration, hibernation and aestivation with examples

Reproduction in animals

- Describe the importance of reproduction
- Describe features of mammals.
- Illustrate the structure of an egg
- Explain how different parts of the egg helps in the development of young one inside.
- Discover various developmental stages in the life cycle of egg laying animals.
- Illustrate and describe various stages in the life cycle of a cockroach.

Animals in danger

- Create an awareness about human activities that cause animal extinction.
- Discuss various measures that we can adopt for the protection of animals in danger

Cross curricular link to Math: Prepare a calendar showing the different stages of development of a Chick on the calendar.

SDG: 15 Life on Land: Different ways by which animals protect themselves.

Animals

GRADE 5

Habitat

Adaptations

Habitats of different Animals	Adaptations in Animals
➢ Compare and contrast the different types of habitats of animals ➢ Explain the characteristics of the animals that live in different habitats	➢ Explain the importance of different body coverings of animals ➢ Compare the respiratory organs in different animals ➢ Discuss how mouth parts are different depending on the food habits of animals ➢ Summarize the adaptation of animals to move in different ways ➢ Explain behavior of animals in groups

CCL to SST- How are animals adapted to grasslands? (Food habits, movement & escape mechanism)
SDG: 15 – Life on Land - Design a poster on encouraging preservation of endangered species of animals and their natural habitats.

PLANTS

GRADE 1

How plants grow

Taking care of Plants

How Plants Grow	Taking care of Plants
➢ List and classify the plants around you as big, small, with thorns, climbers, creepers. ➢ List the factors required for the growth of a plant. (air, water, sun light) ➢ Illustrate the different stages of plant growth.	➢ Identify the importance of plants in animal and human life. ➢ List the things that we get from plants. ➢ State ways to take care of plants.

Real life & NAP: Explain why do we see more of palm trees along road sides and not trees like mango / banana in UAE?
SDG 14: Life under water – What would happen if there were no plants in the seas or in oceans?

PLANTS

GRADE 2

TYPES OF PLANTS

USES OF PLANTS

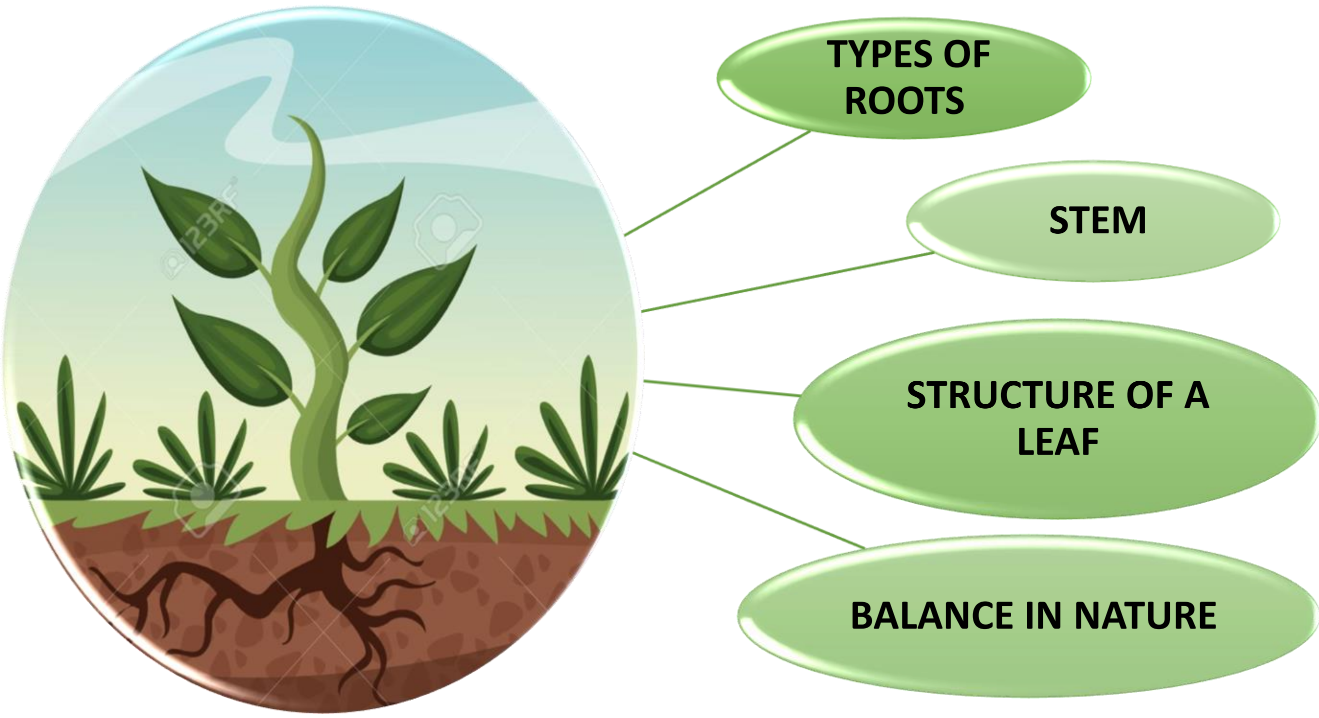
CONSERVATION OF PLANTS

Types of plants	Uses of plants	Conservation of plants
➢ Differentiate between trees, shrubs and herbs based on their physical features and life span.	➢ Explain the uses of different parts of a plant.	➢ Devise 3 ways for conservation of plants

CCL to Math: Compare the life span of herb, shrub and tree and arrange them in ascending order.
SDG: 15 – Life on Land **-** Role Play on 'Saving Trees' to save the 'Life on Land'

PLANTS

GRADE 3



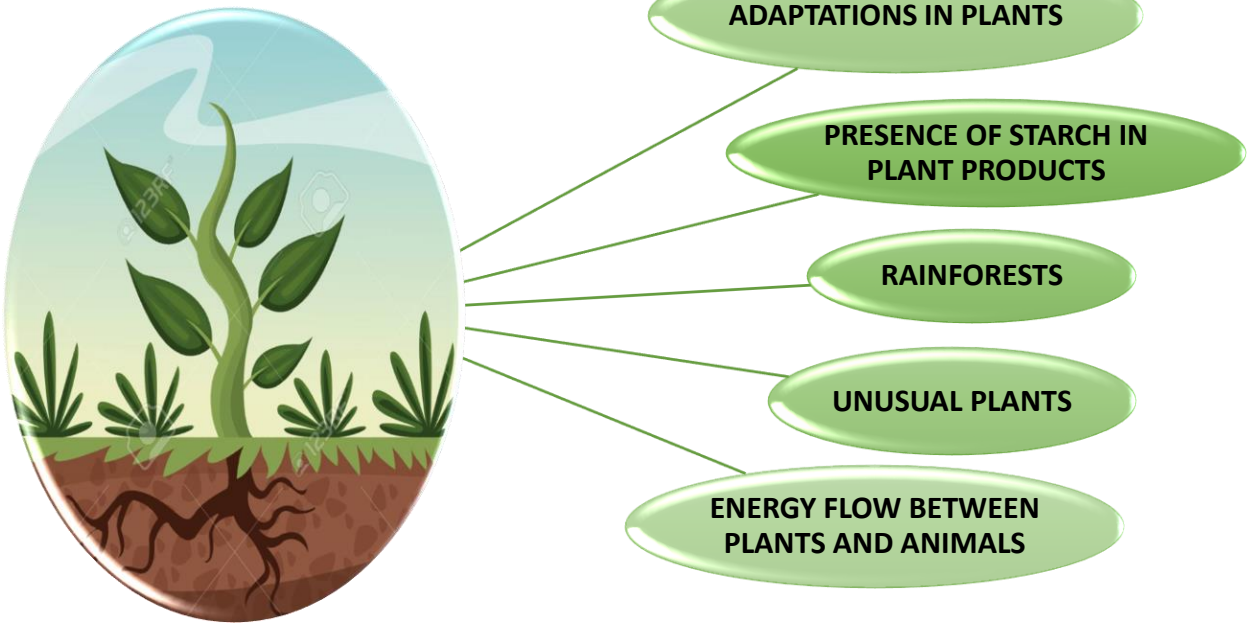
<table>
<tr><td>Roots of Plants
➢ Identify the different types of roots of plants.
➢ Analyze the importance of roots in growth of plants.</td><td rowspan="3">Structure of leaf
➢ Explain why leaf is called the food factory of a plant.
➢ Explain the factors required for the photosynthesis.
➢ Illustrate the process of photosynthesis.
➢ List the non-green plants and explain how they obtain their nutrients.
➢ Illustrate the different parts of leaf. (stalk, midrib, lamina, stomata)
➢ Analyze the importance of different parts of the leaf.</td></tr>
<tr><td>Stem
➢ Demonstrate how stem helps in transportation of water.
➢ Analyze the importance of stem in a plant.</td></tr>
<tr><td>Balance in Nature
➢ Illustrate the interdependence of plants and animals.
➢ Explain why plant is always the first link of all the food chains.</td></tr>
</table>

CCL to UAE Social Studies: Find out the adaptation of desert plants (roots, stem leaves) to save water for their survival in the hot climate.

SDG 15: Life on Land – Research on roots of Desert Plants

PLANTS

GRADE4

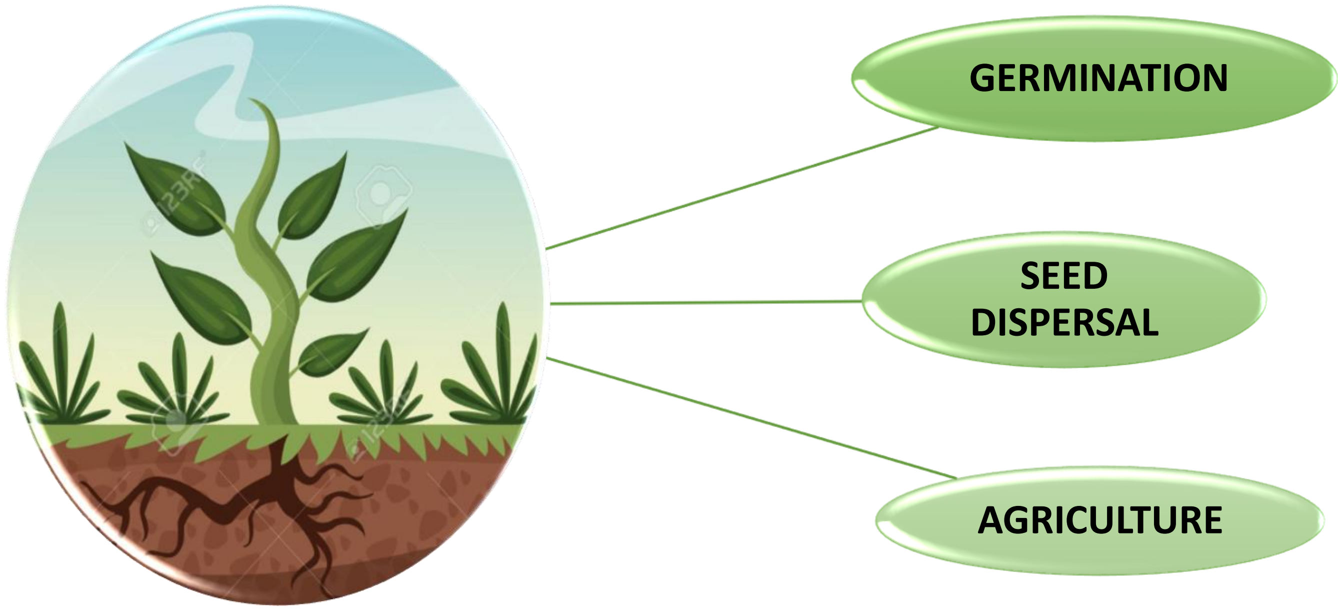


RAINFOREST ➢ Research on rainforests through the Flipped Classroom Strategy. ➢ Justify the importance to conserve the rainforests.	ADAPTATIONS IN PLANTS ➢ Explain the term - Adaptation. ➢ Classify plants according to their habitats ➢ Differentiate between the adaptations of each of the terrestrial plants. ➢ Distinguish between the features of floating, fixed and underwater plants. ➢ Analyze the importance of plants of the grass family in our life.
UNUSUAL PLANTS ➢ Research on any one insectivorous plant and write the mode of nutrition in it.	PRESENCE OF STARCH IN PLANT PRODUCTS ➢ Investigate by experimenting the presence of starch in the given food groups through the Starch Iodine test. ➢ Apply the concept in daily life. ➢ Explain the term - transpiration
ENERGY FLOW BETWEEN PLANTS AND ANIMALS Construct a food chain and explain its importance in the ecosystem.	

Cross Curricular link to **S.st –** Explain the use of Hydroponics in greening of the desert.
SDG 15: Life on Land: Importance of Rainforests for the Earth.

PLANTS

GRADE 5

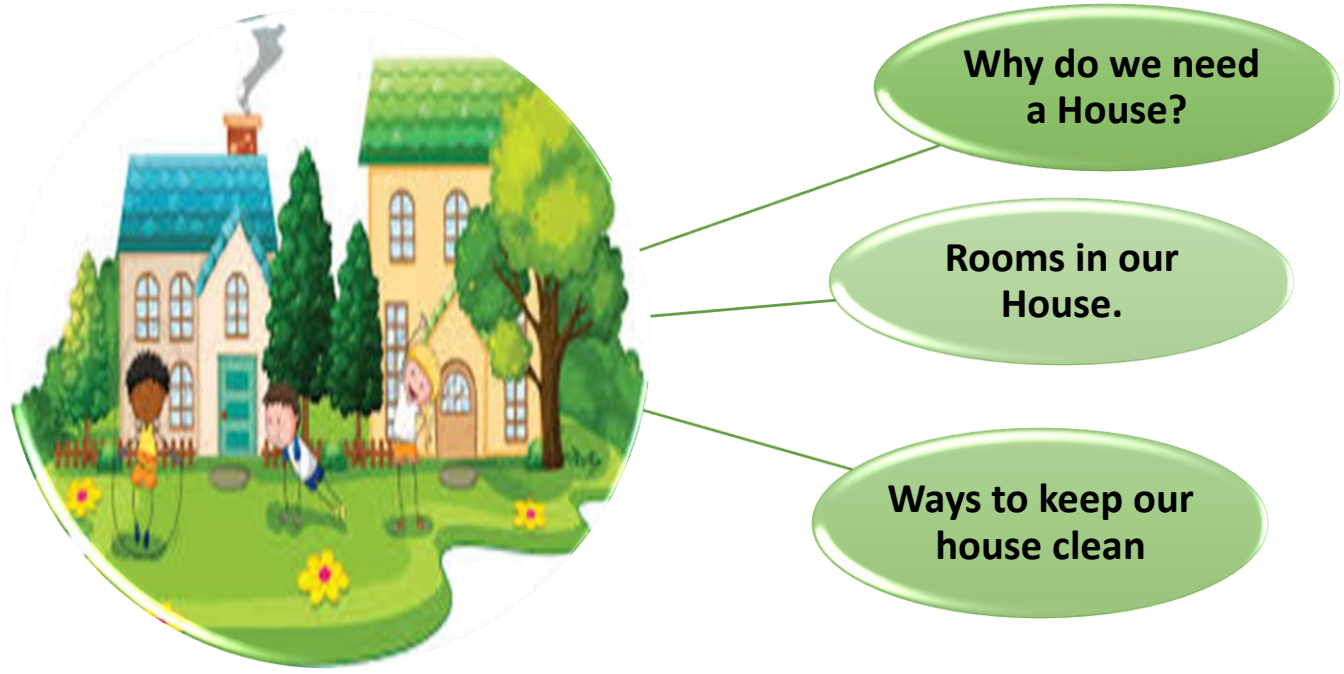


GERMINATION ➢ Explain the process of growth and development from a seed to a plant. ➢ Discuss the different methods of growing new plants from other parts SEED DISPERSAL ➢ Describe the different methods of seed dispersal	AGRICULTURE ➢ Justify the important role of agriculture in our lives ➢ Enumerate the various rabi and kharif crops in India

National Agenda - Research and find out about the measures taken by the UAE government to improve agriculture.
SDG: 2 – Zero Hunger - UAE has launched an initiative known as 'One billion meal initiative'.
How is it beneficial for the development of the nation?

SHELTER

GRADE 1



Need of a house ➢ State the importance of a house.	Rooms in our house ➢ List the rooms in a house and state their uses.
Ways to keep our house clean ➢ Explain the need and ways to keep our house clean.	

Cross Curricular Link (with UAE): Illustrate the different types of houses you see in UAE.
SDG: 9 Industry, Innovation & Infrastructure.

SHELTER

GRADE 2

BUILDING MATERIALS

TYPES OF HOUSES & ROOFS

Building materials	Types of houses and roofs	Clothing
➢ State the different materials used for building different types of houses	➢ Analyze the importance of different houses ➢ Explain the different types of roofs.	➢ Analyze the role of weather and occasion in clothing choice.

CCL to S.St: Compare the modern houses and traditional houses in Sharjah and identify the materials used to build them.
SDG: 11 – **Sustainable Cities and Communities** Material used for making houses which can keep cool in summer. (Wood instead of cement)

WEATHER

GRADE 1

Types of Weather

Food & Clothes according to the weather

Types of weather	Clothes & food according to the weather
➢ Explain the features of different types of weather – cold, rainy, hot, stormy, etc. ➢ List facts about weather.	➢ Discuss about the different seasons in UAE and clothes worn during these seasons. ➢ Categorize food according to the different weather conditions. ➢ Compare food and clothing in different types of weather.

Real Life & UAE: Why Global Village activities do not happen throughout the year?
SDG: 12 – Responsible consumption & production - Reena had a collection of clothes which she had not worn for the past six months. What according to you she should do with them?

WEATHER

GRADE 2

ACCORDING TO WEATHER

According to weather

- Suggest activities that suit the weather conditions of a particular place
- Analyze the role of weather in deciding the type of clothes.

Real life Application: Discussions on type of clothes to be carried with us while going on vacations to different countries
SDG 13: Climate Change – How do human activities cause the weather to become more hot? Give examples.

WEATHER

GRADE 3

FACTORS AFFECTING THE WEATHER

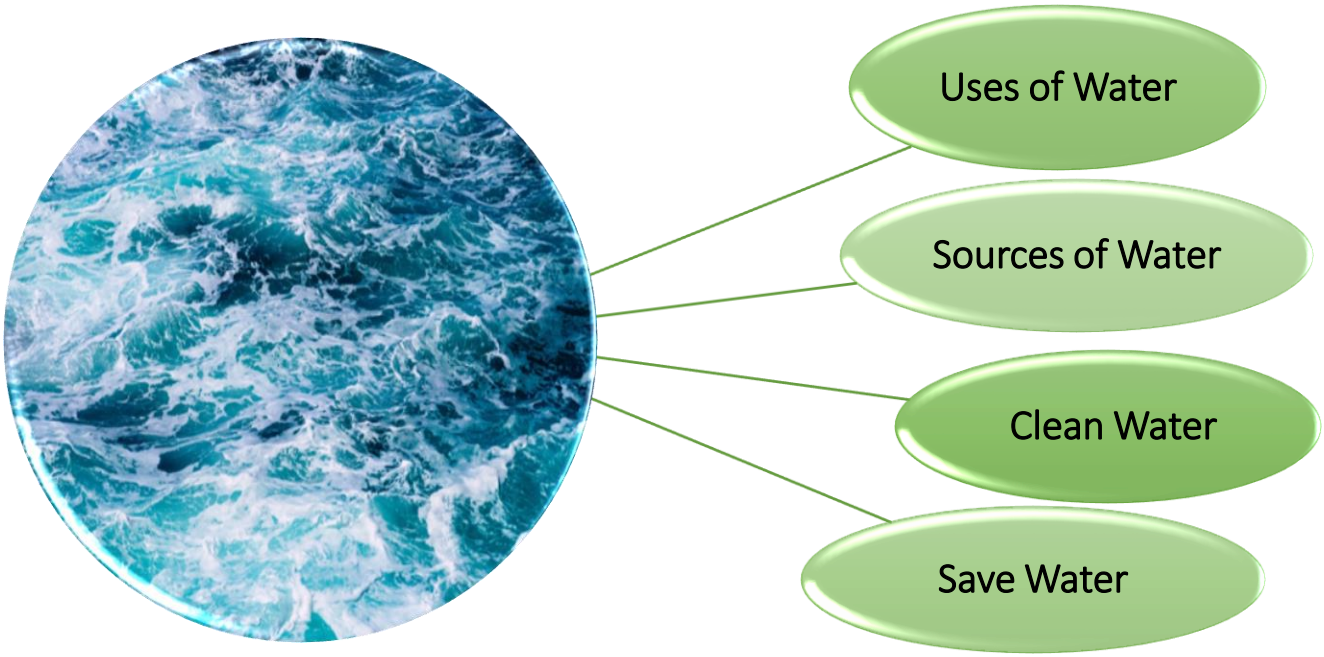
WEATHER AFFECTS OUR LIFE

Factors affecting the weather	Weather affects our life
➢ Analyze the factors affecting weather. ➢ Explain why cloudy nights are warmer.	➢ Describe how does the weather affect our life.(Dew, fog and hail) ➢ Explain how extreme weather causes natural disasters. (Drought, Flood) ➢ Research about the fibers used in different seasons (Fibers – Silk, Wool, cotton Jute).

National Agenda:- Research and find out the weather modification techiques followed in the UAE. How does it impact the weather?
SDG 13: Climate Change : Melting of Glaciers and Ice bergs

WATER

GRADE 1

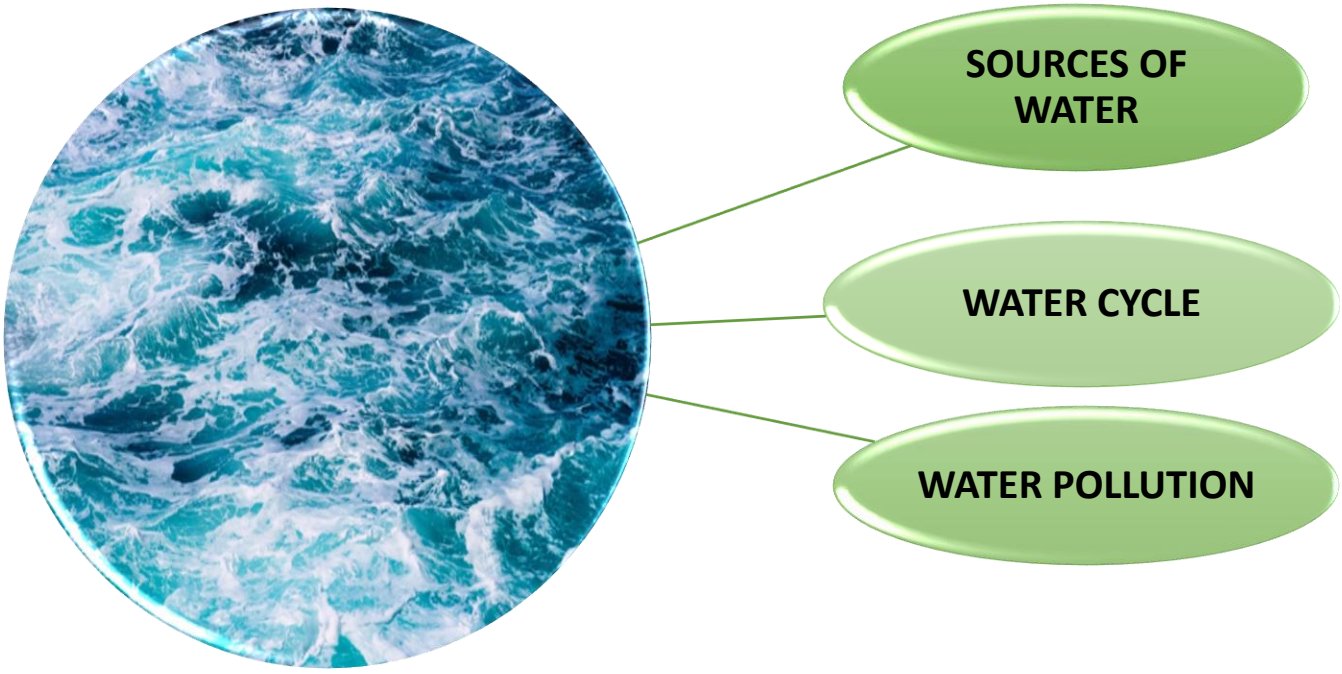


Uses of water ➢ Recognize significance of water to all living beings. ➢ List the different uses of water.	Sources of Water ➢ Name the main sources of water.
Clean Water ➢ Recognize the methods to purify water. (Boiling and Filtering) ➢ Explain the need to purify water.	Save Water ➢ State the need and ways to save water.

National Agenda & Real-life: Suggest ways to save water in your homes (Sustainable environment)
SDG: Clean Water and Sanitation

WATER

GRADE 2



Sources of water	Water Cycle	Water Pollution
➢ Analyze the importance of sources of water in our daily life. ➢ Categorize the sources of water into natural and man-made.	➢ Explain and illustrate the water Cycle through a neatly labelled diagram	➢ Analyze the reasons of water pollution. ➢ Suggest ways to avoid / reduce water pollution.

CCL to S.St: UAE does not enough fresh water supply. Find out from where people in UAE get water for their daily use.
SDG 6: Clean water and sanitation
Oil spills from ships in the seas is one of the biggest causes of water pollution. Justify.

WATER

GRADE 3

- FORMS OF WATER
- WATER CYCLE
- CONSERVATION OF WATER

FORMS OF WATER ➢ Identify the different states of water ➢ Explain the processes involved in changes in the states of water.	WATER CYCLE ➢ Illustrate the water cycle and explain the processes involved in it ➢ Explain why Sun is the main source of energy for the water cycle.
CONSERVATION OF WATER ➢ Explain the need and ways of conservation of water	

National Agenda: Research and find out the initiatives taken by the UAE government to overcome the shortage of fresh water in the country.
SDG 6: Clean Water & Sanitation:

WATER

GRADE 5

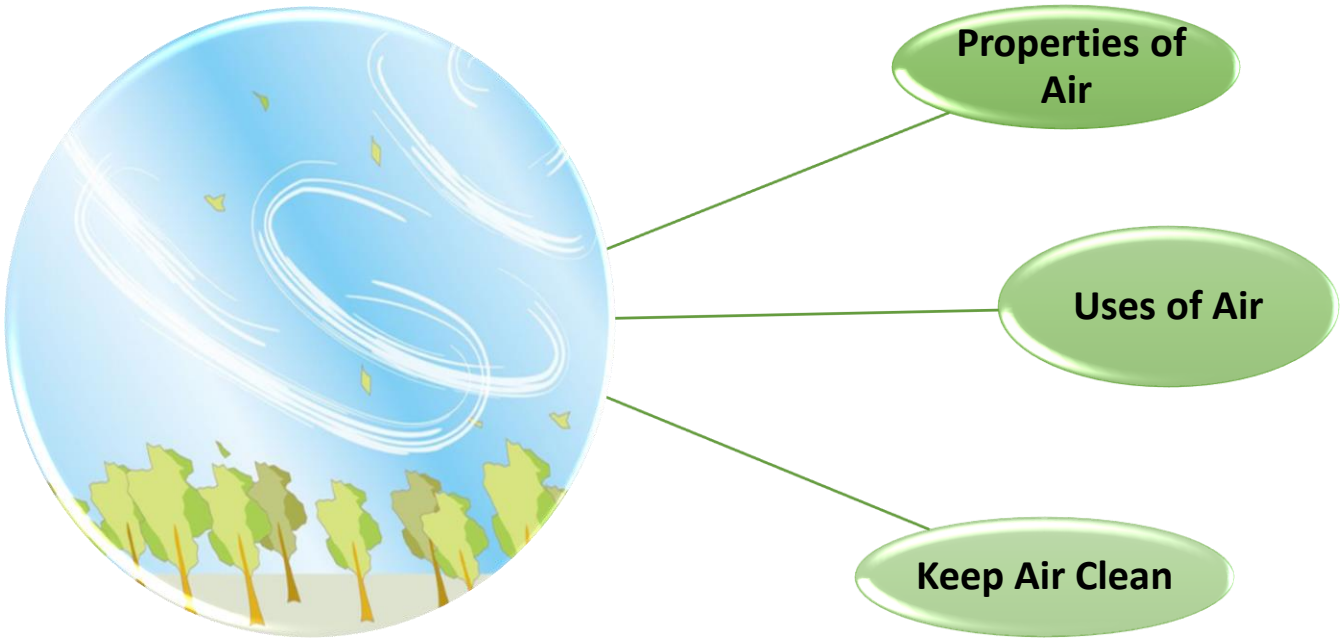
- PURIFICATION OF WATER
- SOLUTIONS
- CHANGE OF STATE
- CHANGES AROUND US

Purification of water ➢ Classify the different types impurities ➢ Describe various methods of purification of water	Solutions ➢ Define solution and classify different types of solutions ➢ Compare miscible and immiscible liquids
Changes around us ➢ Recognize the physical and chemical changes	Change of state ➢ Determine the difference between solids, liquids, and gases. ➢ Describe the different physical properties of each state of matter.

National Agenda: How does UAE convert the sea water into fresh drinking water?
SDG: 6 – Clean water & sanitation – Explain the process of distillation / working of a water purifier.

AIR

GRADE 1



Uses of Air ➢ Recognize and express significance of air to all living beings. ➢ Illustrate uses of air.	Properties of Air ➢ Demonstrate the properties of air. (Air occupies space & Air has weight)
Keep Air Clean ➢ Causes of air pollution & suggest ways to keep the air clean.	

Real Life/ CCL to ME: Tom just entered his house. His eyes are red and his hair is dirty and dry. What do you think he faced on the way – **a dust storm** or **rain**? As his friend, what advice would you give him?
SDG: 15 – Life on land -

AIR

GRADE 2

PROPERTIES OF AIR

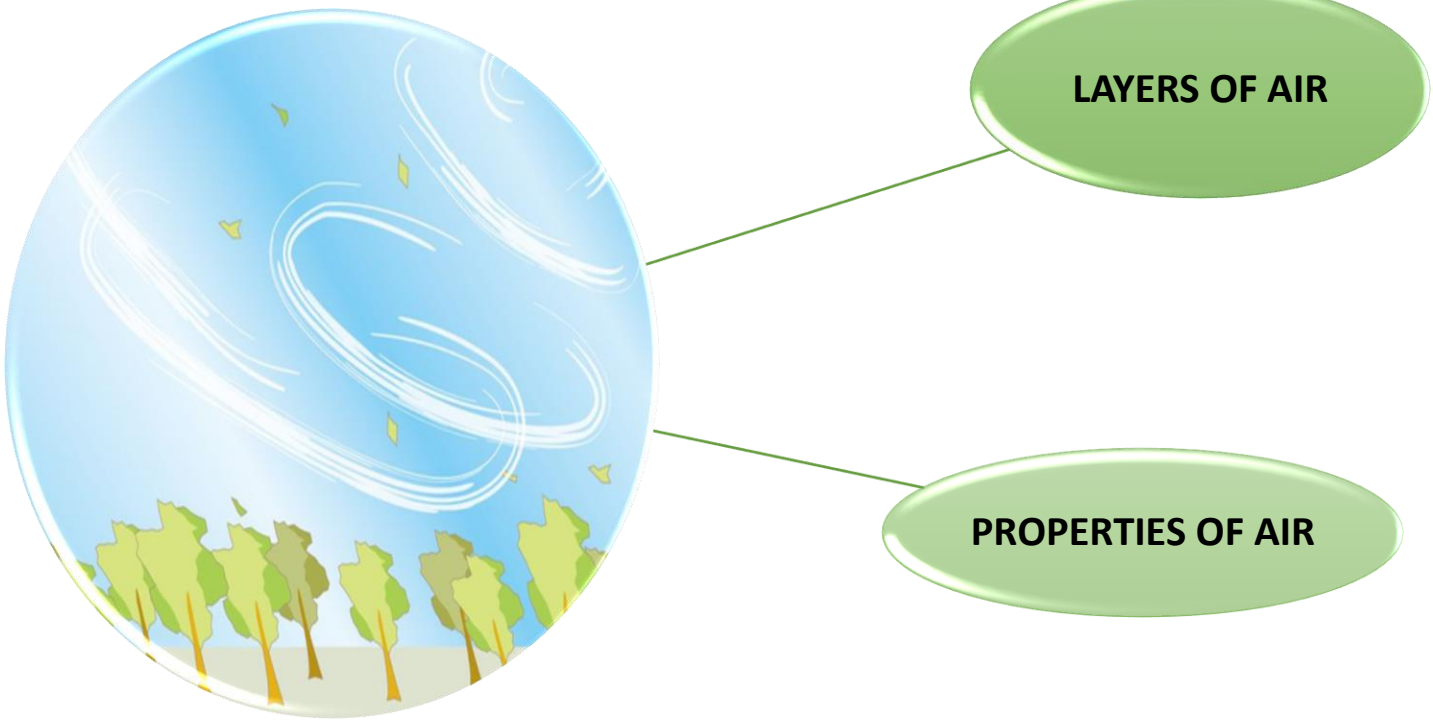
AIR POLLUTION

Properties of Air	Air Pollution
➢ To demonstrate how air exerts pressure. ➢ Apply in real life situations.	➢ Analyze the reasons of air pollution. ➢ Suggest ways to avoid it.

Real life: Research work
The Indian government is trying to make all the cities free of air pollution.
National Agenda - How can the citizens contribute to make the country free of pollution?
SDG 7: Affordable and Clean Energy Ways to promote the use of Wind Energy in UAE

AIR

GRADE 5

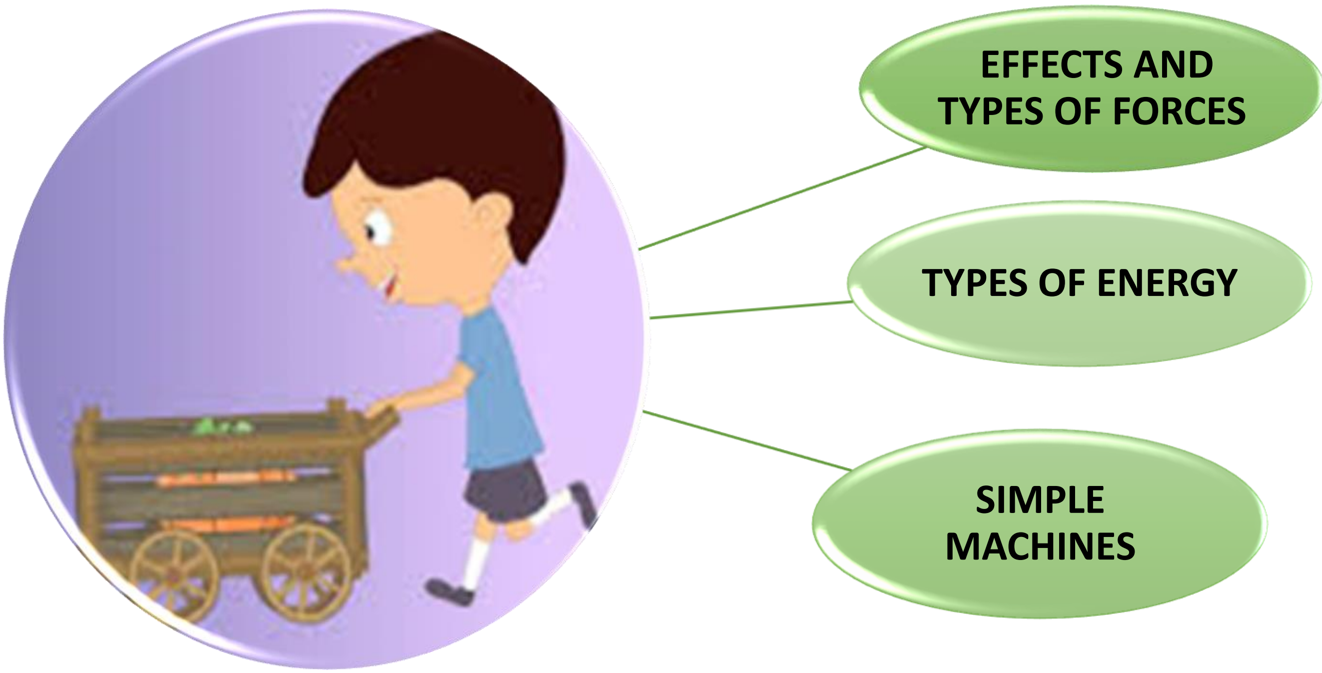


Layers of atmosphere	Properties of air
➢ Describe the different layers of atmosphere ➢ Explain the importance of these layers	➢ Explain the different properties of air ➢ Apply the different properties of air in real life

National Agenda- Discuss the steps taken by UAE to reduce air pollution?
SDG: 11 – Sustainable Cities & Communities **–** How has the Masdar City in UAE helped in reducing CO2 emissions?

FORCE & ENERGY

GRADE 5



Effects and Types of forces	Types of Energy	Simple machines
Summarize the effects of force. Explain different types of forces. Justify the advantages and disadvantages of friction in our daily life	Enumerate the uses of energy Differentiate between different types of energies Compare renewable and nonrenewable sources of energy.	Demonstrate the uses of various simple machines in our daily life. Classify the different types of simple machines Illustrate types of levers.

National Agenda- What is the impact of discovery of petroleum in the economic development of UAE?
SDG: 7 – Affordable & Clean Energy **–** How has the Masdar City in UAE helped in reducing CO2 emissions?

LIGHT AND SHADOW

GRADE 3

MATERIALS AND LIGHT

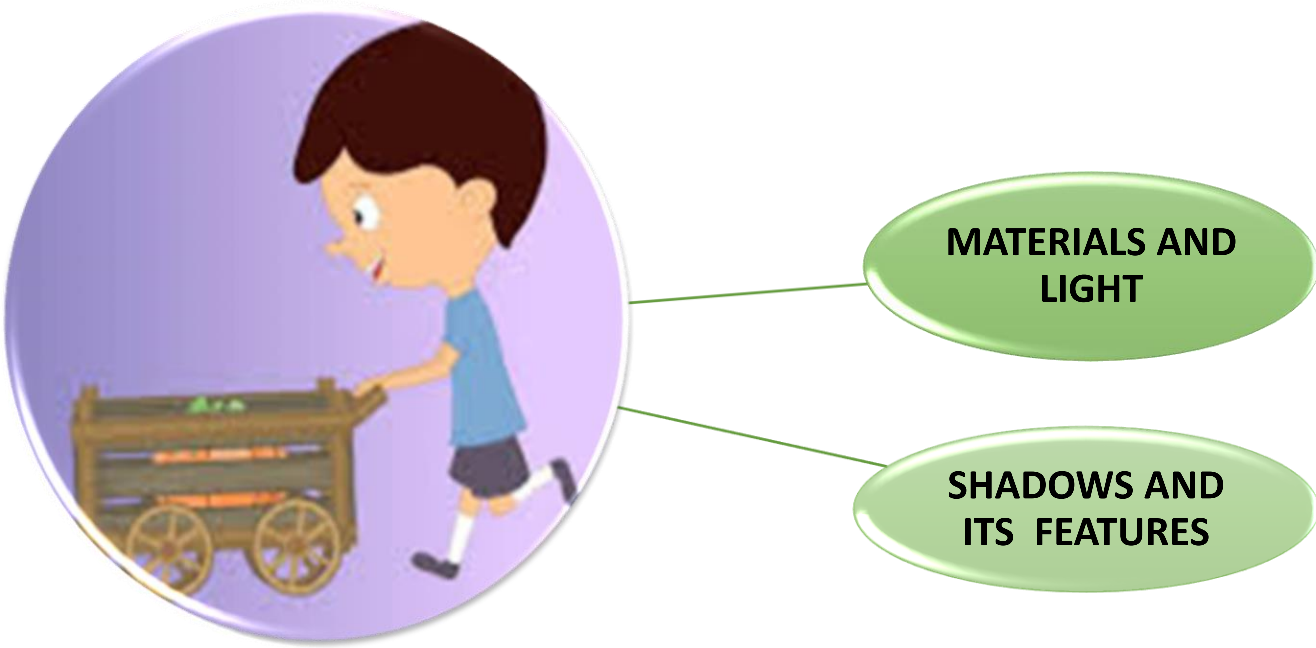
SHADOWS AND ITS FEATURES

Materials and light ➢ Classify materials depending on how much light can pass through them: ➢ Investigate how translucent and opaque materials form shadows	Shadows and features of shadow ➢ To identify factors which might affect the size of a shadow

CCL to Math: Difference in the angle and size of the shadow in relation to the position of light source.
SDG: 9 – Industry, Innovation and Infrastructure –
UAE has many sky-scrapers. What safety measures are followed by the engineers to avoid this situation?

LIGHT AND SHADOW

GRADE 5



Materials and light	Shadows and features of shadow
➢ Classify materials depending on how much light can pass through them: ➢ Investigate how translucent and opaque materials form shadows	➢ To identify factors which might affect the size of a shadow

CCL to Math: Difference in the angle and size of the shadow in relation to the position of light source.
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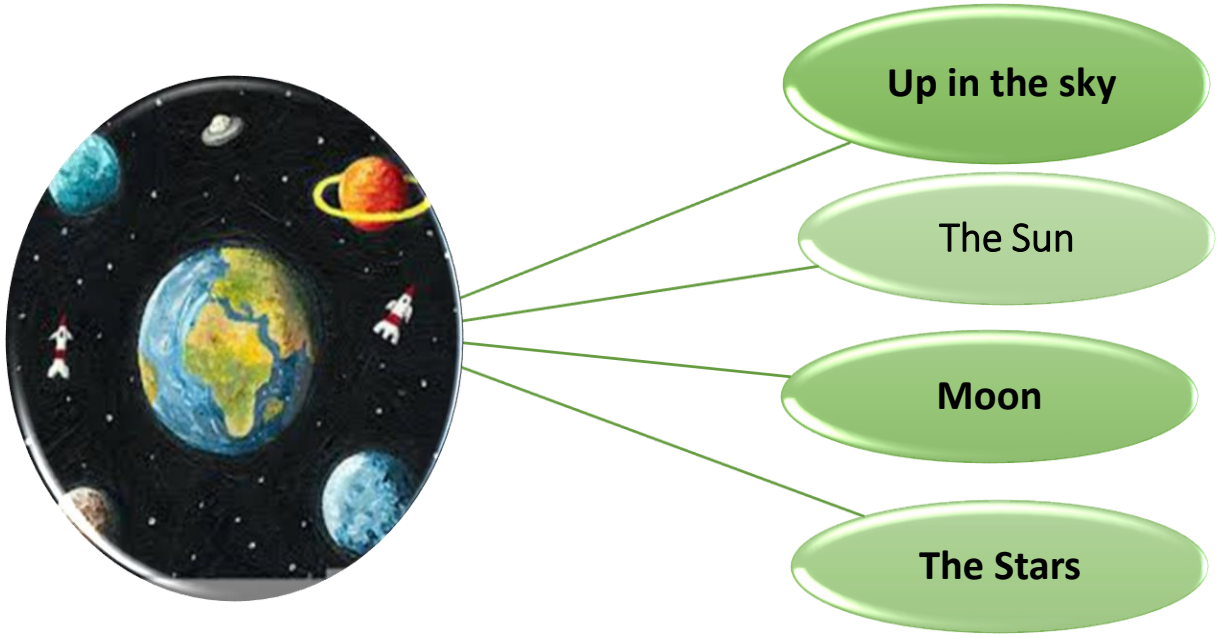
UAE has many sky-scrapers. What safety measures are followed by the engineers to avoid this situation?

UNIVERSE

GRADE 1



Up in the Sky: ➢ Identify the things that are seen in the sky during day and at night. (Sun, Clouds, Moon, Stars and Rainbow)	The Sun ➢ Demonstrate the occurrence of day and night. ➢ Recognize the importance of Sun in the daily life.
Moon ➢ Identify and list the phases of the moon	The stars ➢ Recognize the stars as heavenly bodies.

Real life UAE Link: Research and find out the festivals celebrated in UAE related to the sighting of the moon.
SDG: 12- Responsible consumption & production. How can you save electricity in your homes to protect the Mother Earth?

UNIVERSE

GRADE 2

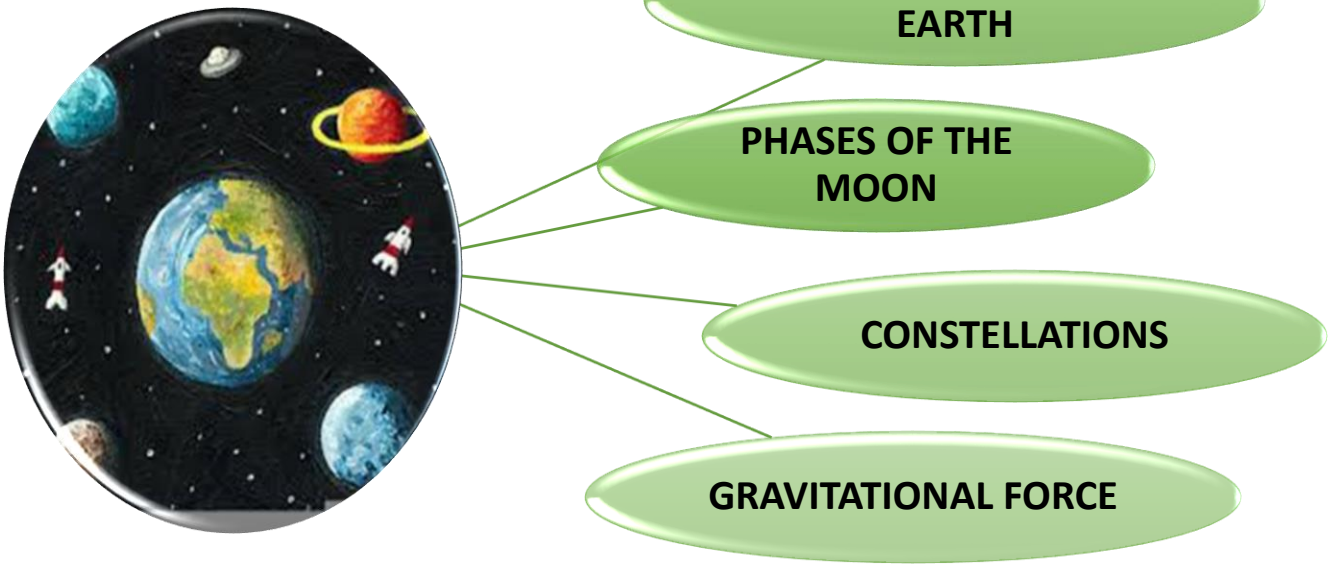
- THE SOLAR SYSTEM
- GOING TO THE MOON
- LIGHT AND SHADOW

The Solar system	Going to the moon	➢
➢ Name the different planets of the solar system. ➢ Explain a few interesting facts about the planets.	➢ State facts about moon ➢ Explain how the moon shines.	

CCL to Math: distance between an object and its light source affects the size of a shadow.
SDG 7: Affordable and Clean Energy Ways to promote the use of Wind Energy in UAE

UNIVERSE

GRADE 3



Movements of the earth ➢ Identify the movements of the Earth – Rotation & Revolution ➢ Explain the effects of these movements on earth.	Phases of the moon ➢ Describe the physical features of the moon. ➢ Explain why we see different phases of the moon
Constellations ➢ Explain what are constellations. ➢ List few constellations.	Gravitational force ➢ Explain what is gravitational force. ➢ Compare the gravity on the earth and moon.

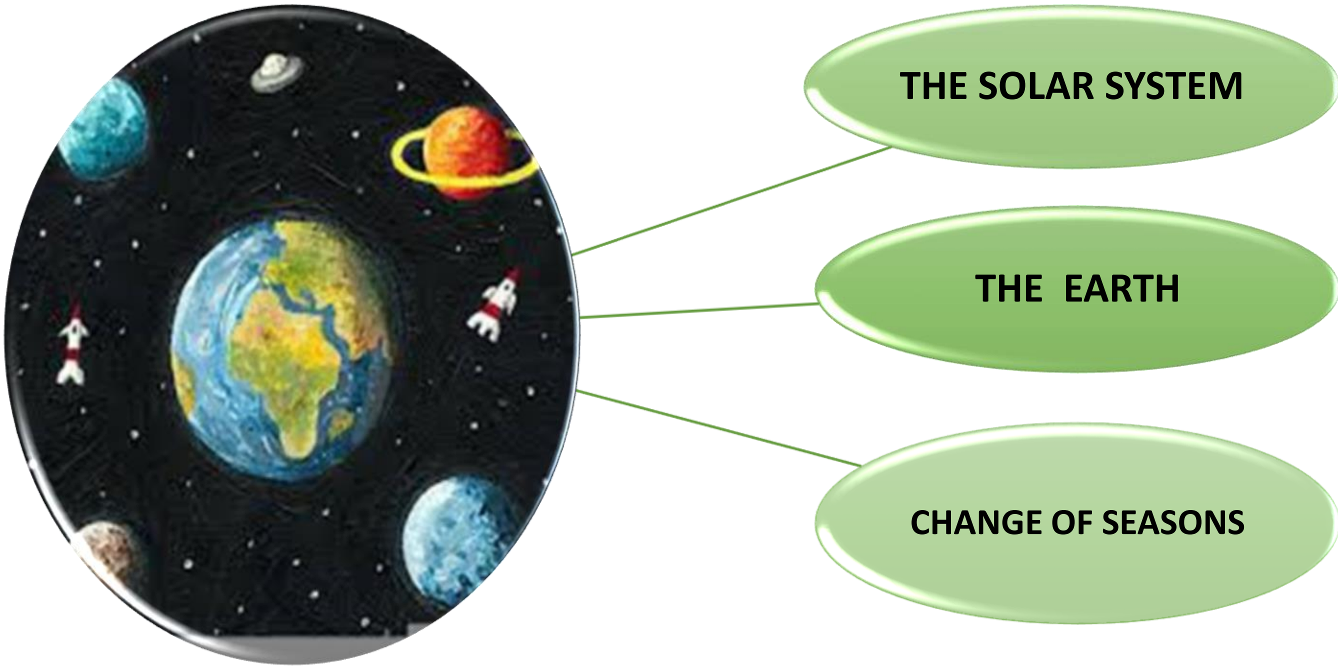
CC Link with Math:- How much will Rahul weigh on moon if he weighs 54 kg on earth? Give reason to support you answer.

SDG: 11 – Sustainable cities and communities

Research on why is Masdar City is declared as a sustainable community and how does it help the environment?

UNIVERSE

GRADE 4

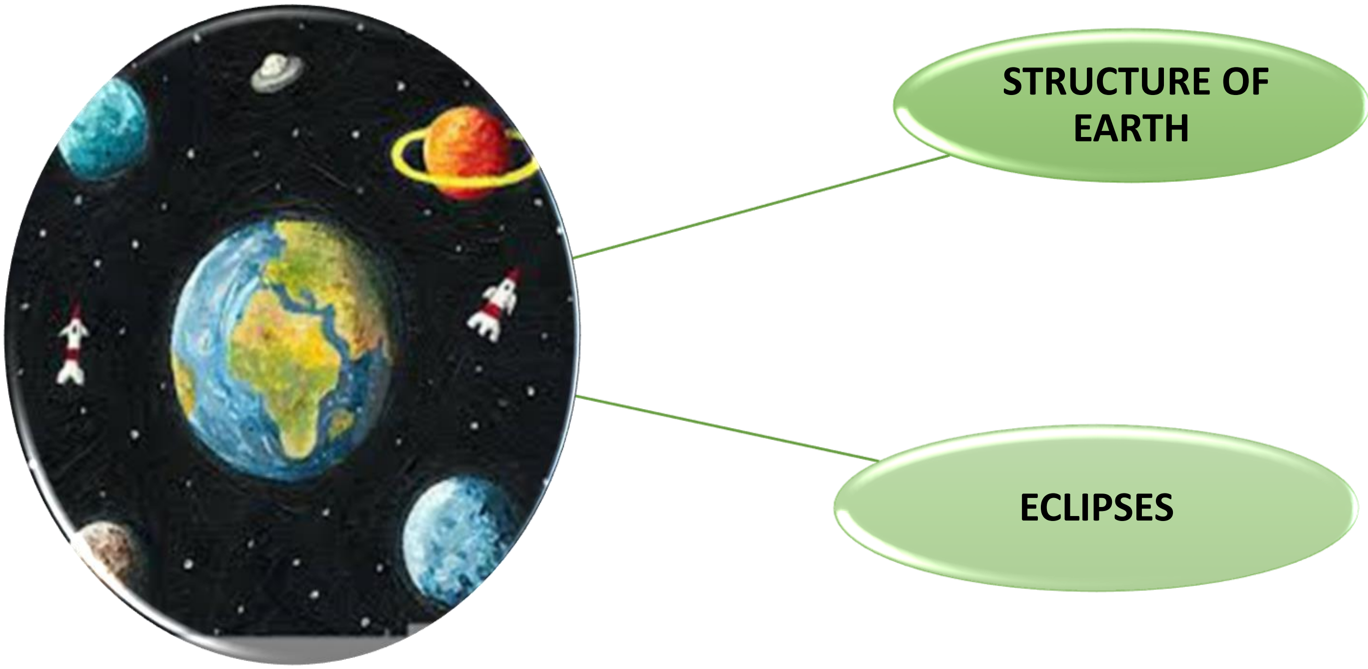


THE SOLAR SYSTEM	CHANGE OF SEASONS
➢ Prepare an information card on the facts about planets. THE EARTH ➢ Illustrate and describe the three main layers of the Earth. ➢ Predict and describe the effect of Rotation.	➢ Predict and describe the effect of Revolution around the sun on the atmosphere. ➢ Research on Northern Hemisphere and Southern Hemisphere.

<u>Cross Curricular link with MATH</u>: Comparing the weight of a person on earth, moon and Mars. Give reasons to support your answer.

UNIVERSE

GRADE 5



Structure of Earth	Eclipses
➢ Explain the internal structure of Earth. ➢ Compare and describe the different features of the layers of earth	➢ Differentiate between two types of eclipses. ➢ Compare and contrast Solar and Lunar eclipse.

National Agenda & SDG 11: Sustainable Cities and Communities
How was Expo 2020, the most sustainable EXPO?

Light

GRADE 2

Transparent, Translucent & Opaque objects

Transparent, Opaque & Transluscent	Light and Shadow
Identify the objects that allow the light to pass through.	Demonstrate and explain that the distance between an object and its light source affects the size of a shadow.

National Agenda & SDG 11: Sustainable Cities and Communities
How was Expo 2020, the most sustainable EXPO?

Magnetism

GRADE 4

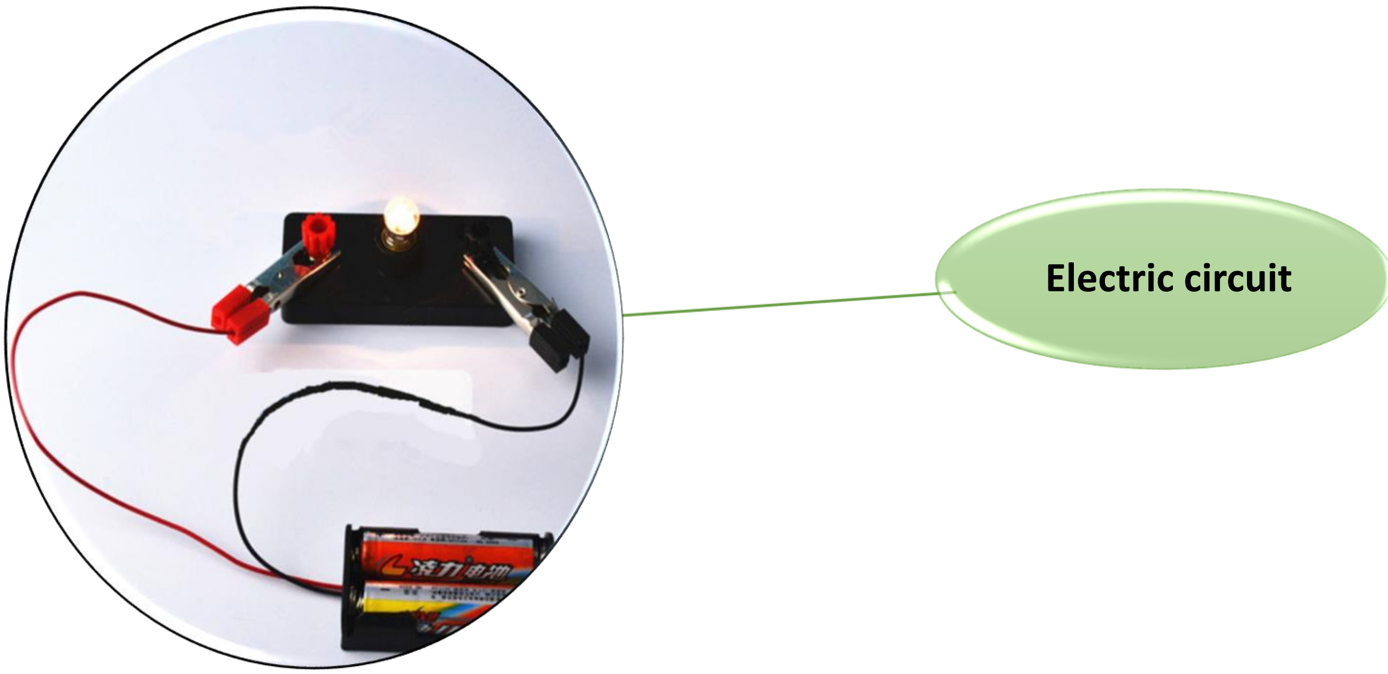
Magnets and their properties

Magnets and their properties

- State and explain the properties of a magnet and relate it to real life situations.

Electricity

GRADE 4



Electric Circuit

- To design and construct a simple electric circuit and to demonstrate how the electric current flows through it.
- To apply the concept in real life situations.

SDG 9: Industry, Infrastructure & Innovation:
Explain the working of a useful device we need in our day to day life that works with a renewable form of energy.