Espalier Heritage School Annual Planner 2025-26

Grade 8	Science											
Sr. No	**Lesson Name**	**learning objectives/ Subtopic**	**Methodology**	**Pedagogical methods**	**Learning outcome**	**Teaching Aid**	**Teaching Place**	**Is the lesson worksheet ready**	Reff.books with pg.no	**No.of lectures required**	**Class Activities /Diagrams / Map work**	**Activity Suggested ---Tr Name**
1	Chapter-1 Crop Production and Management	*Crops and difference between Kharif and Rabi crops *Basic crop production practices. *Preparation of soil *Sowing of seed *Addition of manure and fertilisers *Irrigation *Weeding and crop protection *Harvesting, Threshing and winnowing *Storage of grain and their importance *Animal husbandry	1) Demonstrartion cum Explanation. 2) Technology based 3)Project Based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	Differentiates materials and organisms, such as, natural and human made fibres; contact and non-contact forces; liquids as electrical conductors and insulators; plant and animal cells; viviparous and oviparous animals, on the basis of their properties, structure and functions. Classifies materials and organisms based on properties / characteristics, e.g., metals and non-metals; kharif and rabi crops; useful and harmful microorganisms; sexual and asexual reproduction; celestial objects; exhaustible and inexhaustible natural resources, etc. Applies learning of scientific concepts in daily life/real life situations in order to solve problems/give solutions/take preventive measures/etc.: (such as, purifying water; segregating biodegradable and non-biodegradable wastes; increasing crop production; using appropriate metals and nonmetals for various purposes; increasing/reducing friction; challenging myths and taboos regarding adolescence, etc.) Makes efforts to apply to daily life the understanding of environment and steps to conserve it, in order to contribute to the protection of the environment: (e.g., using resources judiciously; making controlled use of	PPT, crops, seeds	Virtual classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	10	Students will sow seeds and grow crops, Check growth of manures, fertilisers, and test	Take two potted plants. Keep one in the sun and one in the dark and note down your observation., Obeserve the growth of Plants,
2	Chapter 3 Synthetic Fibres and Plastics	Distinguish between Synthetic & Natural fibres based on their properties. Enlist different types of synthetic fibres and their characteristics in order to explain their specific uses List characteristics of plastic's ability to bend to differentiate between thermoplastics and thermosetting plastics Examine suggest the characteristics of plastic to explain its suitability in a variety of applications. Differentiate between plastics based on their ability to decompose in order to explain why plastics are a threat to the environment.	Explanation. 2) Technology	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	classifies materials such as, natural and human made fibres; • differentiates different types of synthetic fibres based on their properties/ characteristics; biodegradable and non-biodegradable materials etc. • conducts simple investigations to measure strength of different fibres • draws flow charts to depict types of synthetic fibres , their characteristics and uses. • applies learning of scientific concepts in day to-day life such as why synthetic fibres should be avoided near fire, why to become fibre wise etc. • discusses and appreciates stories of scientific discoveries such as discovery of Nylon makes efforts to protect environment e.g., using plastic and its products judiciously; becoming fiber wise, develop environment friendly habits.	PPT, Sample of cloth pieces, Video,	google class	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	12	Tensile strength of Nylon, Check the water absorption capacity of synthetic fibres and natural fibres	Best out of waste- Use of plastic. Conservation of nature

3	Chapter 4 Materials: Metal & Non-metals	Differentiate between the commonly known materials based on their ability to be bent and formed into sheets, be drawn into wires, ability to produce ringing sound, ability to conduct electricity, ability to conduct heat in order to define various properties of metal Categorize the commonly known materials as Metals & Non-metals in order to explain their physical properties. Elaborate the chemical reactions of metals and non-metals with oxygen, water, acids and bases in order to distinguish between them. Apply the concept of reactivity of a metal to predict if a given metal will displace another metal in a displacement reaction Predict the utility of a given material for a specific task to reinforce the physical and chemical properties of metals and non-metals	based 3)Project Based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	differentiates materials such as, metals and nonmetals. • classifies materials based on their properties/ characteristics, e.g., metals and non- metals • conducts simple investigations to seek answers to queries e.g. effect of air and water on different metallic and non-metallic substances, nature of metallic and non-metallic oxides, etc. • relates processes and phenomenon with causes, e.g. why does iron get rusted etc, • explains processes and phenomenon such as rusting of iron, loss of gold during cleaning of gold jewelry etc • Writes word equation for chemical reactions, e.g., reactions of metals and non-metals with air, water and acids, etc. • draws labelled diagram of activities , simple investigations related to metals and non-metals ,experimental set ups, etc. • applies learning of scientific concepts in day to-day life, e.g., purifying water; using appropriate metals and non-metals for various purposes , loss of gold during cleaning by jewelers etc • makes efforts to protect environment, e.g making controlled use of fertilisers and pesticides; • exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices	Metals, Non-Metals, Water, HCl, H_2SO_4, bunsen burner, coppersulfate, zinc sulphate	Laboratory, Classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	12	Testing metals reaction with oxygen, water, acid, base, Displacement reaction	Make a comic script on properties of metals and non- metals
4	Chapter 5: Coal and Petroleum	Classify natural resources based on their ability to replenish in order to distinguish between inexhaustible and exhaustible natural resources Discuss the process of formation of coal to explain why coal is an exhaustible natural resource List the useful by products after processing coal to explain that natural resources can be used to obtain useful products other than fuel Infer why gas, oil and water found in this particular sequence in location where petroleum is found in order to explain that gas, oil their densities and ability to mix with each other Classify different constituents of petroleum according to their use in daily life in order to deserve various by products besides fuel of petroleum that there is a large number of products obtained from petroleum other than fuel	1) Inquiry based 2) Lecture cum demonstration based 4) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	• differentiates different petroleum products • classifies materials as exhaustible and inexhaustible natural resources. • relates processes and phenomenon related to formation of petroleum • explains processes and phenomenon, related to refining of petroleum • draws labelled diagram/ flow charts related to formation of petroleum and its refining. • discusses and appreciates stories of scientific discoveries such as discovery of Coal. • constructs models using materials from surroundings and explains their working, • applies learning of scientific concepts in day to-day life, e.g., uses of various petroleum products • discusses and appreciates stories of scientific discoveries • makes efforts to protect environment, e.g., using resources judiciously; suggesting ways to cope with environmental hazards . • exhibits creativity in designing, planning, making use of available resources, etc. exhibits values of honesty, objectivity,cooperation, freedom from fear and prejudices	Two transparent plastic bottles with bottle caps, one plastic straws, Scissors, glue, cello tape, PPT, Video		yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	15	Students will discuss about the resources and how to preserve them	Have discussion on the role of human being in conservation of natural resources on the group created by your teacher.

5	Chapter 6: Combustion and Flame	Explain the process of combustion in order to describe the role of fuel and oxygen in the process as necessary conditions for combustion to take place Ignition temperature Define ignition temperature to explain why minimum temperature is required for a substance to catch fire. Compile and list the commonly known inflammable substances to explain that certain substance catch fire than others. List the conditions necessary for producing fire to discover how combustible materials can be prevented from catching the fire. Differentiate between the type of combustion taking place in gas stove, burning of phosphorus and bursting of firecrackers to assess rapid combustion, spontaneous combustion and explosion Explain the different parts of flame in order to explain why goldsmiths blow the outermost zone of a flame to melt gold and silver Compare the calorific value of commonly used fuel to examine fuel	1) Inquiry based 2) Lecture cum demonstration based 4) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	differentiates combustible and non combustible substances, different zones of flame • classifies materials as combustible and non combustible substances • conducts simple investigations to seek answers to queries, e.g., What are the conditions required for combustion, observe different zones of flame. • relates processes and phenomenon with causes, e.g., ignition temperature of fuels, Forest Fire, etc. • explains processes and phenomenon, such as how is fire controlled . • draws labelled diagram of structure of flame, activities, etc. • constructs models using materials from surroundings and explains their working such as fire extinguisher scientific concepts in day to-day life such as use of fire extinguisher, control on fire caused due to different reasons • makes efforts to protect environment, e.g., using resources judiciously;; suggesting ways to cope with environmental hazards, etc. • exhibits creativity in designing, planning, making use of available resources, etc. • exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices	Candle, beaker, wooden block, magnesium ribbon, PPT, Video		yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	15	Student will be show that air is essential for burning,Burning of magnesium,Heating od water in a pump .	Make a model of fire extinguisher by using household substances
6	Chapter 11: Force and pressure	Classify common actions involving motion of object as push or pull in order to define the term force Provide examples where force is being applied in order to explain that two objects must interact for a force to come into play Analyse motion of an object when force is applied in the same and opposite direction in order to conclude that forces in same direction add while forces in opposite directions subtract Predict the motion of an object when force is applied viz-a-vizforce is not applied in order to explain that a force may bring a change in the state of motion of an object Predict the changes when force is applied to a body that is not free to move in order to explain that force can cause change in shape of objects Cite examples from daily life where an action causes change inmovement or shape due to the contact between two objects in order to define contact forces Illustrate with examples from daily life an action that causes change in movement or shape without contact between two objects in order to	1) Inquiry based 2) Lecture cum demonstration based 4) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	differentiates combustible and non combustible substances, different zones of flame • classifies materials as combustible and non combustible substances • conducts simple investigations to seek answers to queries, e.g., What are the conditions required for combustion, observe different zones of flame. • relates processes and phenomenon with causes, e.g., ignition temperature of fuels, Forest Fire, etc. • explains processes and phenomenon, such as how is fire controlled . • draws labelled diagram of structure of flame, activities, etc. • constructs models using materials from surroundings and explains their working such as fire extinguisher scientific concepts in day to-day life such as use of fire extinguisher, control on fire caused due to different reasons • makes efforts to protect environment, e.g., using resources judiciously;; suggesting ways to cope with environmental hazards, etc. • exhibits creativity in designing, planning, making use of available resources, etc. • exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices	PPT, Video, Tyre, Magnets, pencils, straw, nail, balloon, bottle etc		yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	17	Students will know about magnetic force, static force, air exerts pressure, Magdeburgs hemisphere	Make your own magdeburgs hemisphere

7	Chapter 2: Microorganisms- Friend and Foe	Recall four major categories of microorganisms (bacteria, fungi, protozoa, algae) Differentiate between microorganisms and viruses to establish that viruses reproduce only inthe host body Elucidate the reason for increasing volume when yeast is added to dough in baking industry to explain fermentation. Explain the role of antibiotics in order to demonstrate the medicinal uses of microorganisms Explain the role of vaccinations in fighting with diseases in order to appreciate the medicinal uses of microorganisms Explain how microorganism help in increasing the nitrogen in soil to the agricultural uses of microorganisms Explain microorganisms role in decomposing to describe importance Of microorganisms Define pathogens to list the class of harmful microorganisms Describe how mosquitoes spread malaria and dengue to explain the role of carriers in spreading communicable disease List examples of diseases in humans,	1) Inquiry based 2) Lecturecum demonstration based 4)Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	Differentiate between microorganisms and viruses to establish that viruses reproduce only in the host body Recall four major categories of microorganisms (bacteria, fungi, protozoa, algae) Define pathogens to list the class of harmful Microorganisms Elucidate the reason for increasing volume when yeast is added to dough in baking industry to explain fermentation Describe how mosquitoes spread malaria and dengue to explain the role of carriers in spreading communicable disease List examples of diseases in humans, plants and animal caused by microorganisms in order to explain the harmful effects of microorganisms Explain the role of antibiotics in order to demonstrate the medicinal uses of microorganisms Explain microorganisms role in decomposing to describe importance Illustrate the process of fixing the nitrogen back in the soil to explain the role of microorganisms in increasing the fertility of soil	PPT, Video, Slides, Yeast, Soil sample, Nitrogen cycle	online classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	18	students will watch different videos of microorganisms.	Keep a piece or bread/chapati in a damp place and observe.
8	Chapter 7: Conservation of Plants and Animals	List causes of deforestation to reflect on its rampant existence despite forest being essential to life Describe how droughts are caused to elaborate the consequence of deforestation Describe the process of	1) Inquiry based 2) Lecturecum demonstration based 4)Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc.	List causes of deforestation to reflect on its rampant existence despite forest being essential to life Describe how droughts are caused to elaborate the consequence of deforestation Describe the process of desertification to explain the consequence of deforestation	PPT, A V aids	online classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	12	Students will observe various plants and animals in their area.	Observe the harmful effects of deforestation leading to soil erosion in your area.
9	Chapter 8: Cell - Structure and Function	Classify animals based on their cell number, shape and size in order to describe unicellular and multicellular animals List the different parts and functions of a typical cell in order to appreciate the unit structure in an organism Distinguish between plant and animal cells to explain the function of cell wall	1) Kinesthetic method 2) Lecture cum Demonstration 3) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	List the different parts and functions of a typical cell in order to appreciate the unit structure in an organism Distinguish between plant and animal cells to explain the function of cell wall Draws labelled diagram / flow charts, e.g., structure of cell,	PPT, A V aids	online classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	12	students will watch videos of different cell organelles	Draw structure of cell and cell organelles
10	Chapter 9: Reproduction in Animals	Differentiate between asexual and sexual reproduction in order to list two modes of reproduction Differentiate between sex cells	1) Inquiry based 2) Lecturecum demonstration based 4)Technology	• pose questions and find answers through reflection, discussion, designing and performing appropriate	Differentiates viviparous and oviparous animals, Classifies sexual and asexual reproduction; Explains processes and phenomena in order to relate to science behind	PPT, A V aids	online classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir	14	Students will Classify commonly known animals and plants based on how they reproduce	Draw life cycle of a frog.

11	Chapter 10: Reaching the Age of Adolescence	Enumerate different variations that take place in body at puberty to explain the effect of adolescence on changing human body Explain the effects of hormones in the development of secondary sexual characteristics in order to illustrate growth during puberty Elaborate the functions of hormones secreted by endocrine glands in order to explain the growth in male and female body at puberty Summarize the functions of sex and other hormones to establish their role secondary sexual characteristics Describe mensuration , menarche and menopause to explain the reproductive phases of life in humans Illustrate the procedure for the determining the sex of a baby in order to establish that the gender of the child is decided by the chromosome from male sperm Elucidate the need for a balanced diet in order to explain the nutritional needs of	1) Inquiry based 2) Lecturecum demonstration based 4)Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	In detail information about adolscence, capabilities of reproduction, puberty, importance of balanced diet.	PPT, A V aids	online classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	12	Students will Observe changes in human beings at different stages in life	Collect newspaper cuttings and information about HIV/AIDS
12	Chapter 12: Friction	Analyse situations where resistance is felt while applying force to move a body in order to explain friction force where acts in opposite direction Analyse and identify number of bodies interacting when friction force is felt in order to establish that friction is a contact force. Discover the factors that cause friction when two bodies moving relatively in order to explain why it is easier to move an object on a smooth surface compared to a rough surface Provide advantages and disadvantages of friction in order to justify friction as necessary evil Identify factors causing friction in order to come up with formulate strategies to reduce Differentiate between rolling friction and sliding friction in order to explain the use of different friction reducing strategies Fluid friction Explain why the engine of an airplane is needed when flying in order to explain drag caused by air (friction caused by fluids)	1) Kinesthetic method 2) Lecture cum Demonstration 3) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	Differentiates contact and noncontact forces; Conducts simple investigations on his/her own in order to seek answers to queries Applies learning of scientific concepts in daily life/real life situations in order to solve problems/give solutions/take preventive measures/etc.:	PPt, Video, Spring Balance, Wooden block,		yes		15	Students will push an pull the object, Measure the weight, Motion of book on rollers	Climbing toy

13	Chapter 13: Sound	List examples of body moving in to and fro motion in order to explain vibration List commonly known musical instrument and identify parts that vibrate in order to explain that vibration produces sound List and identify functions of parts of human body that produces sound in order to explain the process of sound production Provide examples where sound travels from one point to another in order to establish that sound needs a medium to propagate Describe the structure and function of an eardrum in order to explain how humans hear sound Differentiate between frequency and amplitude in order to describe factors responsible for loudness and pitch of the sound Recall the audible range of sound for humans in order to explain why certain sounds cannot be heard by humans Noise pollution List the harmful effects of noise pollution in order to mitigate it	1) Kinesthetic method 2) Lecture cum Demonstration 3) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	Explain process of propagation of sound; Explains processes and phenomena in order to relate to science behind the phenomena/processes and develop scientific thinking skills: Constructs models using materials from surroundings and explains their working in order to demonstrate scientific knowledge and understanding of how it works	PPT, Video, Utensils, Ekatara,		yes		14	Students will bang the metal pan, work on vocal cords What is vibration? How does sound travel?	What is vibration? How does sound travel?
14	Chapter 14: Chemicals Effects of Electrical	Distinguish between good and poor conductors of electricity in order to explain that various materials can conduct electricity under	1) Kinesthetic method 2) Lecture cum Demonstration	• pose questions and find answers through reflection, discussion, designing and	The students will be able to recall example of good & bad conductors. The students will be able to recognize liquid that conduct electricity. The	PPT , videos	online classroom	yes	NCERT Textbook, Science Quest, Galaxy	Students wiill make simple circuit, there is	Distinguish between good and poor conductors of electricity in order to	
15	Chapter15: Some Natural Phenomena	Recall examples of visible sparks in order to explain the phenomenon of lightning Analyse if two charged objects attract or repel each other in order to establish that similar charge repel each other while opposite charge attract each other Examine the working of electroscope to detect if an object is charged or not in order to apply the concept of similar charge objects repel each other Investigate the process of earthing in order to assess the process of transferring charge from a charged object to earth in order to explain the advantages of earthing of electric circuits in households Examine the sequence of lightening occurring in clouds in order to explain the process of electric discharge in nature Lightning safety Predict how lightning travels from the cloud to the ground in order to describe the measures that must be taken during lightning Justify the phenomenon of	1) Kinesthetic method 2) Lecture cum Demonstration 3) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	Explains processes and phenomenon, Explains processes and phenomena in order to relate to science behind the phenomena/processes and develop scientific thinking skills:	PPT , videos	online classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	16	Students check whether like poles attract or repel	Do an earthquakq drill at home

16	Chapter 16: Light	Identify and calculate the angles of incidence and reflection of a ray of light to illustrate the laws of reflection in real life. Conclude the law of reflection and represent it by drawing a ray diagram identifying incident ray, reflected ray and the normal Illustrate with a line diagram how images invert when reflecting from a mirror in order to see the applications of the laws of reflection Distinguish between reflection from a rough and a smooth reflecting surface in order to differentiate between diffused and regular reflection Establish that light can reflect multiple time with a set of mirrors by constructing a kaleidoscope Describe various parts of human eye and identify their functions in order to explain how humans see object in presence of light Compare and contrast between blind spot and field of view in order to explain how humans see object in the presence of light Care of eyes Recommend different measures for protecting eyes when a problem is felt in order to establish	1) Kinesthetic method 2) Lecture cum Demonstration 3) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	• exhibits creativity in designing, planning, making use of available resources, etc. • exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices. • measures angles of incidence and reflection, etc. • formation of multiple images;	PPT, Mirror, Video, Protactor,Kaleidoscope, Bird in cage	online classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	17	Calculate the incident and reflected angle after striking the mirror with a ray of light to illustrate the law of reflection in real life	Make a Kaleidoscope
17	Chapter 17: Stars and the Solar System	List commonly seen objects in the sky as celestial objects are Explain with diagram the different phases of moon in order to explain that moon rotates around earth Categorize the name of commonly known group of stars in order to explain that constellations are a group of stars with recognisable shape Solar system Outline and illustrate the planets of the solar system in order to correctly identify them Identify the name of different celestial bodies in the solar system in order to explain the constituting bodies of a solar system Differentiate between asteroids, comet and meteor in order identify the celestial body. Describe artificial satellites in order correctly classify them as manmade celestial body	1) Kinesthetic method 2) Lecture cum Demonstration 3) Technology based	• pose questions and find answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity, experiments, surveys, field trips, etc. analyse recorded data, interpret results and draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of resources, etc	Applies learning of scientific concepts in daily life/real life situations in order to solve problems/give solutions/take preventive measures/etc.:	PPT, videos	online classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)	12	Students will known about the planets	Collect pictures of planets and make your own solar system in your room.
18	Chapter 18: Pollution of Air and Water	Analyse the problem of air pollution in order to explain why it is a threat to human beings. Identify commonly known air	1) Kinesthetic method 2) Lecture cum Demonstration 3) Technology	• pose questions and find answers through reflection, discussion, designing and performing appropriate	Explains processes and phenomenon, Applies learning of scientific concepts in daily life/real life situations in order to solve problems/give solutions/take preventive	PPT, Video,	online classroom	yes	NCERT Textbo	15	Students will make sure the environment is safe	Survey the amount the vehicle in your area and PUC