	Espalier Heritage School Annual Planner 2022-23												
Grade 8 Sr. No	Science 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	
	Chapter-1 Crop Production and Manageme nt	*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 	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 indiciously maine controlled use of	PPT, crops, seeds	Virtual classroom	yes	NCERT Textbook, Science Quest, Galaxy & Lakhmir Singh (if available)		0 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	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.		 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. internate, acquire and appreciate values such as cooperation, collaboration, honest reporting, judicious use of 	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)	1	2 Tensile strength of Nylon, Check the water absorption capacity of synthetic fibres and natural fibres	Best out of waste- Us of plastic. Conservation of nature	

30	Chapter 4	Differentiate between the commonly	based 3)Project	pose questions and find	differentiates materials such as, metals and	Metals, Non-	Laboratory,	ves	NCERT	12	Testing metals	Make a comic script on
		known materials based on their	Based	answers through	nonmetals.	Metals, Water,	Classroom	you	Textbook.	.2		properties of
		ability to be bent and formed into	Duoou	reflection, discussion,	classifies materials based on their properties/	HCI, H2SO4,			Science		water, acid, base,	metals and non- metals
		sheets, be drawn into wires, ability to		designing and	characteristics,	bunsen burner,			Quest, Galaxy		Displacement reaction	
		produce ringing sound, ability to		performing appropriate	e.g., metals and non- metals • conducts simple	coppersulfate,			& Lakhmir			
		conduct electricity, ability to conduct		activities, role plays,	investigations to	zinc			Singh (if			
		heat in order to define various		debates, use of ICT, etc.	seek answers to queries e.g. effect of air and	sulphate			available)			
		properties of metal		record the observations	water on different metallic				,			
		Categorize the commonly known		during the activity,	and non-metallic substances, nature of metallic							
		materials as Metals & Non-metals in		experiments, surveys, field	and non-metallic oxides, etc.							
		order to explain their physical		trips, etc.	 relates processes and phenomenon with 							
		properties.		analyse recorded data,	causes, e.g. why does iron get rusted etc,							
		Elaborate the chemical reactions of		interpret results and	• explains processes and phenomenon such as							
		metals and non-metals with oxygen,		draw inference/ make	rusting of iron, loss of gold during cleaning of							
		water, acids and bases in order to		generalisations and	gold jewelry etc							
		distinguish between them.		share findings with peers and	Writes word equation for chemical reactions,							
		Apply the concept of reactivity of a		adults	e.g., reactions of metals and non-metals with air,							
		metal to predict if a given metal will		exhibit creativity presenting	water and							
		displace another metal in a		novel ideas,	acids, etc.							
		displacement reaction		new designs/patterns,	 draws labelled diagram of activities , simple 							
		Predict the utility of a given material		improvisation, etc.	investigations related to metals and non-metals							
		for a specific task to reinforce the		 internalise, acquire and 	,experimental set							
		physical and chemical properties of		appreciate values	ups, etc. • applies learning of scientific concepts							
		metals and non-metals		such as cooperation,	in day to-day life, e.g., purifying water; using							
				collaboration, honest	appropriate metals							
				reporting, judicious use of	and non-metals for various purposes , loss of							
				resources, etc	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,							
		Classify natural resources based on	1) Inquiry based	pose questions and find	differentiates different petroleum products	Two transparent		yes	NCERT	15	Students will discuss	Have discussion on
C	Coal and	their ability to replenish in order to	2) Lecture cum	answers through	 classifies materials as exhaustible and 	plastic bottles			Textbook,		about the resources	the role of
P	Petroleum	distinguish between inexhaustible and	demonstration	reflection, discussion,	inexhaustible natural resources. • relates	with bottle caps,			Science		and how to preserve	human being in
		exhaustible natural resources	based 4)	designing and	processes and	one plastic			Quest, Galaxy		them	conservation of
		Discuss the process of formation of	Technology	performing appropriate	phenomenon related to formation of petroleum •	straws,			& Lakhmir			natural resources on
		coal to explain why coal is an	based	activities, role plays,	explains processes and	Scissors, glue,			Singh (if			the group
		exhaustible natural resource		debates, use of ICT, etc.	phenomenon, related to refining of petroleum ·	cello tape, PPT,			available)			created by your
		List the useful by products after		record the observations	draws labelled diagram/	Video						teacher.
		processing coal to explain that natural		during the activity,	flow charts related to formation of petroleum and							
		resources can be used to obtain useful		experiments, surveys, field	its refining.							
		products other than fuel		trips, etc.	discusses and appreciates stories of scientific							
		Infer why gas, oil and water found in		analyse recorded data,	discoveries such as discovery of							
		this particular sequence in location		interpret results and	Coal.							
		where petroleum is found in order to		draw inference/ make	constructs models using materials from							
		explain that gas, oil their densities		generalisations and	surroundings and explains their working,							
		and ability to mix with each other		share findings with peers and	applies learning of scientific concepts in day to-							
		Classify different constituents of		 adults exhibit creativity presenting 	day life, e.g., uses of various petroleum products							
		petroleum according to their use in daily life in order to deserve various by		novel ideas,	discusses and appreciates stories of scientific							
		products besides fuel of		new designs/patterns,	discoveries • makes efforts to protect							
		petroleum that there is a large number		improvisation, etc.	environment, e.g., using resources judiciously;							
	1		1									
		of products obtained from		internalise, acquire and appreciate values	suggesting ways to cope with environmental							
				appreciate values	hazards .							
		of products obtained from		appreciate values such as cooperation,	hazards . • exhibits creativity in designing, planning, making							
		of products obtained from		appreciate values such as cooperation, collaboration, honest	hazards . • exhibits creativity in designing, planning, making use of available resources, etc. exhibits values							
		of products obtained from		appreciate values such as cooperation,	hazards . • exhibits creativity in designing, planning, making							

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			1) Inquiry based	pose questions and find	differentiates combustible and non combustible	Candle, beaker,	yes	NCERT	15 Student will be show	Make a model of fire
			2) Lecture cum	answers through	substances,	wooden block,		Textbook,	that air is essential for	extinguisher by
n ar			demonstration	reflection, discussion,	different zones of flame • classifies materials as	magnesium		Science	burning,Burning of	using household
Flar		conditions for combustion to take place		designing and	combustible and non	ribbon, PPT,		Quest, Galaxy	magnesium,Heating	substances
			Technology	performing appropriate	combustible substances • conducts simple	Video		& Lakhmir	od water in a pump	
			based	activities, role plays,	investigations to seek			Singh (if		
		temperature is required		debates, use of ICT, etc.	answers to queries, e.g., What are the conditions			available)		
		for a substance to catch fire.		record the observations	required for combustion,					
		Compile and list the commonly known		during the activity,	observe different zones of flame.					
		inflammable substances to explain that		experiments, surveys, field	 relates processes and phenomenon with 					
		certain substance catch fire than		trips, etc.	causes, e.g., ignition temperature of fuels,					
		others.		analyse recorded data,	Forest Fire, etc.					
		List the conditions necessary for		interpret results and	• explains processes and phenomenon, such as					
		producing fire to discover how		draw inference/ make	how is fire controlled .					
		combustible		generalisations and	 draws labelled diagram of structure of flame, 					
		materials can be prevented from		share findings with peers and	activities, etc.					
		catching the fire.		adults	 constructs models using materials from 					
		Differentiate between the type of		 exhibit creativity presenting 	surroundings and explains their working such as					
		combustion taking place in gas stove,		novel ideas,	fire extinguisher scientific concepts in day to-day					
		burning		new designs/patterns,	life such as use of fire extinguisher, control on					
		of phosphorus and bursting of		improvisation, etc.	fire caused due to different reasons • makes					
		firecrackers to assess rapid		 internalise, acquire and 	efforts to protect environment, e.g., using					
		combustion,		appreciate values	resources judiciously;; suggesting ways to cope					
		spontaneous combustion and		such as cooperation,	with environmental hazards, etc. • exhibits					
		explosion		collaboration, honest	creativity in designing, planning, making use of					
		Explain the different parts of flame		reporting, judicious use of	available resources, etc. • exhibits values of					
		in order to explain why goldsmiths blow		resources, etc	honesty, objectivity, cooperation, freedom from					
		the			fear and prejudices					
		outermost zone of a flame to melt gold								
		and silver								
		Compare the calorific value of								
		commonly used fuel to exemine fuel								
6 Cha		commonly used fuel to examine fuel	1) Inquiry based	pose questions and find	differentiates combustible and non combustible	PPT. Video.	ves	NCERT	17 Students will know	Make vour own
	pter 11:	Classify common actions involving	1) Inquiry based 2) Lecture cum	pose questions and find answers through	differentiates combustible and non combustible substances,	PPT, Video, Tyre, Magnets,	yes	NCERT Textbook,	17 Students will know about magnetic force,	Make your own magdeburgs
For	pter 11: ce and	Classify common actions involving motion of object as push or pull in	2) Lecture cum				yes			magdeburgs
For	opter 11: ce and ssure	Classify common actions involving motion of object as push or pull in	2) Lecture cum demonstration	answers through	substances,	Tyre, Magnets,	yes	Textbook,	about magnetic force,	magdeburgs
For	opter 11: ce and ssure	Carsting used fuel to examine fuel Classify common actions involving motion of object as push or pull in order to define the term force Provide examples where force is being	2) Lecture cum demonstration	answers through reflection, discussion,	substances, different zones of flame	Tyre, Magnets, pencils, straw,	yes	Textbook, Science	about magnetic force, static force, air exerts	magdeburgs
For	opter 11: ce and ssure	commonly used fuel to examine fuel 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	2) Lecture cum demonstration based 4)	answers through reflection, discussion, designing and	substances, different zones of flame • classifies materials as combustible and non	Tyre, Magnets, pencils, straw, nail, balloon,	yes	Textbook, Science Quest, Galaxy	about magnetic force, static force, air exerts pressure,	magdeburgs
For	opter 11: ce and ssure	commonly used fuel to examine fuel 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	2) Lecture cum demonstration based 4) Technology	answers through reflection, discussion, designing and performing appropriate	substances, different zones of flame • classifies materials as combustible and non combustible substances	Tyre, Magnets, pencils, straw, nail, balloon,	yes	Textbook, Science Quest, Galaxy & Lakhmir	about magnetic force, static force, air exerts pressure, Magdeburgs	magdeburgs
For	apter 11: ce and ssure	commonly used fuel to examine fuel 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	2) Lecture cum demonstration based 4) Technology	answers through reflection, discussion, designing and performing appropriate activities, role plays,	substances, different zones of flame • classifies materials as combustible and non combustible substances • conducts simple investigations to seek answers	Tyre, Magnets, pencils, straw, nail, balloon,	yes	Textbook, Science Quest, Galaxy & Lakhmir Singh (if	about magnetic force, static force, air exerts pressure, Magdeburgs	magdeburgs
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7	Chapter 2:	Recall four major categories of	1) Inquiry based	pose questions and find	Differentiate between microorganisms and	PPT, Video,	online	ves	NCERT	18 students will watch	Keep a piece or
			2) Lecturecum	answers through	viruses to establish that viruses reproduce	Slides,	classroom	,	Textbook,	different videos of	bread/chapati in a damp
		protozoa, algae) Differentiate between	demonstration	reflection, discussion,	only in the host body	Yeast, Soil			Science	microorganisms.	place and observe.
		microorganisms and viruses to	based	designing and	Recall four major categories of	sample,			Quest, Galaxy		
		establish that viruses reproduce only inthe host body Elucidate the reason	4)Technology based	performing appropriate activities, role plays,	microorganisms (bacteria, fungi, protozoa, algae)	Nitrogen cycle			& Lakhmir Singh (if		
		for increasing volume when yeast is	based	debates, use of ICT, etc.	Define pathogens to list the class of harmful				available)		
		added to dough in baking industry to		record the observations	Microorganisms				arailabio)		
		explain fermentation. Explain the role		during the activity,	Elucidate the reason for increasing volume						
		of antibiotics in order to demonstrate		experiments, surveys, field	when yeast is added to dough in baking						
		the medicinal uses of microorganisms Explain the role of vaccinations in		trips, etc. analyse recorded data,	industry to explain fermentation Describe how mosquitoes spread malaria						
		fighting with diseases in order to		interpret results and	and dengue to explain the role of carriers in						
		appreciate the medicinal uses of		draw inference/ make	spreading communicable disease						
		microorganisms		generalisations and	List examples of diseases in humans, plants						
		Explain how microorganism help in		share findings with peers and	and animal caused by microorganisms in						
		increasing the nitrogen in soil to the agricultural uses of microorganisms		 adults exhibit creativity presenting 	order to explain the harmful effects of microorganisms						
		Explain microorganisms role in		novel ideas,	Explain the role of antibiotics in order to						
		decomposing to describe importance		new designs/patterns,	demonstrate the medicinal uses of						
		Of microorganisms		improvisation, etc.	microorganisms						
		Define pathogens to list the class of		 internalise, acquire and 	Explain microorganisms role in decomposing						
		harmful microorganisms Describe how mosquitoes spread		appreciate values such as cooperation,	to describe importance Illustrate the process of fixing the nitrogen						
		malaria and dengue to explain the		collaboration, honest	back in the soil to explain the role of						
		role		reporting, judicious use of	microorganisms in increasing the fertility of						
		of carriers in spreading		resources, etc	soil						
		communicable disease									
	Chapter 7:	List examples of diseases in humans, List causes of deforestation to reflect	 In mulimula and 	pose questions and find	List causes of deforestation to reflect on its	PPT, A V aids	online		NCERT	12 Students will observe	Observe the harmful
		on its rampant existence	 Inquiry based Lecturecum 	answers through	rampant existence despite forest being	PPT, A V alds	classroom	yes	Textbook.	various plants and	effects of
		despite forest being essential to life	demonstration	reflection, discussion,	essential to life		Classicolin		Science	animals in their area.	deforestation leading
	and	Describe how droughts are caused to	based	designing and	Describe how droughts are caused to				Quest, Galaxy		to soil erosion in your
		elaborate the consequence of	4)Technology	performing appropriate	elaborate the consequence of deforestation				& Lakhmir		area.
		deforestation	based	activities, role plays,	Describe the process of desertification to				Singh (if		
9	Chapter 8:	Describe the process of Classify animals based on their cell	1) Kinesthetic	 debates, use of ICT, etc. pose questions and find 	explain the consequence of deforestation List the different parts and	PPT. A V aids	online	ves	available) NCERT	12 students will watch	Draw structure of cell
	Cell -	number, shape and size in order to	method 2)	answers through	functions of a typical cell in order to		classroom	yes	Textbook,		and cell organelles
		describe	Lecture cum	reflection, discussion,	appreciate the unit structure in an				Science	organelles	5
	and	unicellular and multicellular animals	Demonstration	designing and	organism				Quest, Galaxy		
	Function	List the different parts and functions	3) Technology	performing appropriate	Distinguish between plant and animal cells to explain the function				& Lakhmir		
		of a typical cell in order to appreciate the	based	activities, role plays, debates, use of ICT, etc.	of cell wall				Singh (if available)		
		unit structure in an organism		record the observations	Draws labelled diagram / flow charts, e.g.,				available)		
		Distinguish between plant and		during the activity,	structure of cell,						
		animal cells to explain the function		experiments, surveys, field							
		of cell wall		trips, etc.							
				analyse recorded data, interpret results and							
				draw inference/ make generalisations and							
				draw inference/ make generalisations and share findings with peers and							
				draw inference/ make generalisations and share findings with peers and adults							
				draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting							
				draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas,							
				draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting							
				draw inference/ make generalisations and share findings with peers and adults • exhibit creativity presenting novel ideas, new designs/patterns, improvisation, etc. • internalise, acquire 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							
				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,							
				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							
				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,							
				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 asexual and	1) Inquiry based	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 • pose questions and find		PPT, A V aids	online	yes	NCERT	14 Students will Classify	Draw life cycle of a frog.
	Reproducti	sexual reproduction in order to list	2) Lecturecum	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 sexual and asexual	PPT, A V aids	online classroom	yes	Textbook,	commonly known	Draw life cycle of a frog.
	Reproducti on in	sexual reproduction in order to list two		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 • pose questions and find answers through reflection, discussion,	Classifies sexual and asexual reproduction;	PPT, A V aids		yes	Textbook, Science	commonly known animals and plants	Draw life cycle of a frog.
	Reproducti on in Animals	sexual reproduction in order to list	2) Lecturecum demonstration	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 sexual and asexual	PPT, A V aids		yes	Textbook,	commonly known	Draw life cycle of a frog.

		1	1	1	r		1				1
	0: Enumerate different variations that	1) Inquiry based		In detail information about adolscence,	PPT, A V aids	online	yes	NCERT	12	Students will Observe	Collect newspaper
Reaching		2) Lecturecum	answers through	capabilities of reproduction, puberty, importance		classroom		Textbook,		changes in human	cuttings and information
the Age of	f explain the	demonstration	reflection, discussion,	of balanced diet.				Science		beings at different	about HIV/AIDS
Adolesce	nc effect of adolescence on changing	based	designing and					Quest, Galaxy		stages in life	
e	human body	4)Technology	performing appropriate					& Lakhmir		0	
	Explain the effects of hormones in	based	activities, role plays,					Singh (if			
	the development of secondary sexual		debates, use of ICT, etc.					available)			
	characteristics in order to illustrate		record the observations					availabic)			
			during the activity,								
	growth during puberty										
	Elaborate the functions of hormones		experiments, surveys, field								
	secreted by endocrine glands in order		trips, etc.								
	to		analyse recorded data,								
	explain the growth in male and		interpret results and								
	female body at puberty		draw inference/ make								
	Summarize the functions of sex and		generalisations and								
	other hormones to establish their role		share findings with peers and								
	secondary sexual characteristics		adults								
	Describe mensuration , menarche		 exhibit creativity presenting 								
	and menopause to explain the		novel ideas,								
	reproductive		new designs/patterns,								
	phases of life in humans		improvisation, etc.								
	Illustrate the procedure for the										
			 internalise, acquire and 								
	determining the sex of a baby in		appreciate values								
	order to		such as cooperation,								
	establish that the gender of the child		collaboration, honest								
	is decided by the chromosome from		reporting, judicious use of								
	male		resources, etc								
	sperm										
	Elucidate the need for a balanced										
	diet in order to explain the nutritional										
	needs of										
	needs of							1 1			
	- dele										
12 Chapter 1		1) Kinesthetic	pose questions and find	Differentiates contact and noncontact	PPt, Video,		yes				Climbing toy
12 Chapter 1 Friction	2: Analyse situations where resistance is felt while applying force to	1) Kinesthetic method 2)	pose questions and find answers through	Differentiates contact and noncontact forces;	Spring Balance,		yes			pull the object,	Climbing toy
							yes				Climbing toy
	is felt while applying force to move a body in order to explain	method 2)	answers through reflection, discussion,	forces;	Spring Balance,		yes			pull the object,	Climbing toy
	is felt while applying force to	method 2) Lecture cum Demonstration	answers through reflection, discussion, designing and	forces; Conducts simple investigations on his/her own in order to seek answers to queries	Spring Balance,		yes			pull the object, Measure the weight,	Climbing toy
	is felt while applying force to move a body in order to explain friction force where acts in opposite direction	method 2) Lecture cum Demonstration 3) Technology	answers through reflection, discussion, designing and performing appropriate	forces; Conducts simple investigations on his/her own in order to seek answers to queries Applies learning of scientific concepts in daily	Spring Balance,		yes			pull the object, Measure the weight, Motion of book on	Climbing toy
	is felf while applying force to move a body in order to explain friction force where acts in opposite direction Analyse and identify number of bodies	method 2) Lecture cum Demonstration	answers through reflection, discussion, designing and performing appropriate activities, role plays,	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	Spring Balance,		yes			pull the object, Measure the weight, Motion of book on	Climbing toy
	is felf 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	method 2) Lecture cum Demonstration 3) Technology	answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc.	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	Spring Balance,		yes			pull the object, Measure the weight, Motion of book on	Climbing toy
	is felf 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	method 2) Lecture cum Demonstration 3) Technology	answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations	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	Spring Balance,		yes			pull the object, Measure the weight, Motion of book on	Climbing toy
	is felf 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.	method 2) Lecture cum Demonstration 3) Technology	answers through reflection, discussion, designing and performing appropriate activities, role plays, debates, use of ICT, etc. record the observations during the activity,	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	Spring Balance,		yes			pull the object, Measure the weight, Motion of book on	Climbing toy
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	is felf 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	method 2) Lecture cum Demonstration 3) Technology based	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	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	Spring Balance,		yes			pull the object, Measure the weight, Motion of book on	Climbing toy

12/0	hapter 13:	List examples of body moving in to and	1) Kinesthatia	pose questions and find	Explain process of propagation of sound;	PPT, Video,	1	1400		14	Students will bang the	What is vibration?
		fro motion in order to	method 2)	answers through	Explain process of propagation of sound, Explains processes and phenomena in order to	Utensils,		yes		14	metal pan, work on	How does sound
10		explain vibration	Lecture cum	reflection, discussion,	relate to science behind the	Ekatara.					vocal cords	travel?
		List commonly known musical	Demonstration	designing and	phenomena/processes	Litatara,					What is vibration?	laver:
		instrument and identify parts	3) Technology	performing appropriate	and develop scientific thinking skills:						How does sound	
		that vibrate in order to explain that	based	activities, role plays,	Constructs models using materials from						travel?	
		vibration produces sound	Sacoa	debates, use of ICT, etc.	surroundings and explains their working in order							
		List and identify functions of parts of		record the observations	to demonstrate scientific knowledge and							
		human body that		during the activity,	understanding of how it works							
		produces sound in order to explain		experiments, surveys, field								
		the process of sound		trips, etc.								
		production		analyse recorded data,								
		Provide examples where sound		interpret results and								
		travels from one point to		draw inference/ make								
		another in order to establish that		generalisations and								
		sound needs a medium to propagate		share findings with peers and adults								
		Describe the structure and function of		exhibit creativity presenting								
		an eardrum in order to		novel ideas,								
		explain how humans hear sound		new designs/patterns,								
		Differentiate between frequency and		improvisation, etc.								
		amplitude in order to		 internalise, acquire and 								
		describe factors responsible for		appreciate values								
		loudness and pitch of the		such as cooperation,								
		sound		collaboration, honest								
		Recall the audible range of sound for		reporting, judicious use of								
		humans in order to explain why certain sounds cannot be		resources, etc								
		heard by humans										
		Noise pollution List the harmful effects										
		of noise pollution in order to mitigate										
		it C										
		Distinguish between good and poor	1) Kinesthetic	 pose questions and find 	The students will be able to recall example of	PPT , videos	online	yes			Distinguish between	
		conductors of electricity in order	method 2)	answers through	good & bad conductors. The		classroom		Textbook,		good and poor	
		to explain that various materials can conduct electricity under	Lecture cum Demonstration	reflection, discussion, designing and	students will be able to recognize liquid that conduct electricity. The				Science Quest, Galaxy		conductors of electricity in order to	
		Recall examples of visible sparks in	1) Kinesthetic	pose questions and find		PPT . videos	online	ves	NCERT		Students check	Do an earthquakq drill at
		order to explain the	method 2)	answers through	processes and phenomena in	FFT, VIGEOS	classroom	yes	Textbook,		whether like poles	home
		phenomenon of lightning	Lecture cum	reflection, discussion,	order to		oldoor oolii		Science		attract or repel	
		Analyse if two charged objects	Demonstration	designing and	relate to science behind the				Quest, Galaxy			
a		attract or repel each other in	3) Technology	performing appropriate	phenomena/processes and develop scientific				& Lakhmir			
		order to establish that similar charge	based	activities, role plays,	thinking skills:				Singh (if			
		repel each other while		debates, use of ICT, etc.					available)			
		opposite charge attract each other		record the observations								
		Examine the working of		during the activity,								
		electroscope to detect if an object is charged or not in order to apply the		experiments, surveys, field								
		concept of similar charge		trips, etc. analyse recorded data,								
		objects repel each other		interpret results and								
		Investigate the process of earthing in		draw inference/ make								
		order to assess the process		generalisations and								
		of transferring charge from a		share findings with peers and								
		charged object to earth in order to		adults								
		explain the advantages of earthing of		exhibit creativity presenting								
		electric circuits in		novel ideas,								
		households		new designs/patterns,								
		Examine the sequence of lightening		improvisation, etc.								
		occurring in clouds in order to explain the process of electric		 internalise, acquire and appreciate values 								
		discharge in nature		such as cooperation,								
		Lightning safety		collaboration, honest								
		Predict how lightning travels from		reporting, judicious use of								
		the cloud to the ground in		resources, etc								
		order to describe the measures that										
		must be taken during										
		must be taken during lightning Justify the phenomenon of										

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	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, 		PPT, Mirror, Video, Protactor,Kaleid oscope, 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 mirro with a ray of light to illustrate the law of reflection in real life	
		In the presence of light Compare and contrast between the presence of light 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		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							
	Stars and the Solar System	bolic object of the solar system in archieve and 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.
	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