



NAME OF THE DEPARTMENT: SCIENCE

SUBJECT: PHYSICS

SYLLABUS BREAK UP 2021-22 -AJI

Name of the Subject Teacher:- LEKSHMI CHANDRAN

ALAN JENNERS SCHOOL,  
BROOKS SYSTEM

Grade:- 10

MONTH	WEEK	Unit/Section	No of Periods	Topic Break Down / for Periods/Learning objectives / progression	Learning Outcomes/ Skills acquired	Activities (Formative assessment tasks, projects, Visits) INCLUDING VIRTUAL LEARNING	Teaching Aids / Reference/ Resources	Competencies and Values	MY IDENTITY	Cross curricular link / Art integration	Artificial Intelligence	Critical Thinking Questions: Descriptive	Critical Thinking Questions- Objective
April	1st week	Electricity	8	To define Electric current, potential difference and electric current. To Evaluate the charge flowing through a conductor in a given time, in order to calculate current flowing through it. To Determine work done in moving a charge across two points, in order to calculate potential difference between two points.	Students will be able to Draw the different symbolic representation of electrical components Design and construct a electrical circuit with battery, key, bulb, ammeter Apply and observe the electrical circuit concept in real life application in various electrical appliances	Project on Simple electric circuit	Smart board, Ncert book, related videos, ppt, sticky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Competencies:Communication, problem solving digital competence,critical thinking,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness Values: Respect,integrity,empathy,resilience,honesty,care,tolerance	Identify different electric power plants in U A E	<p><b>ASSESSMENT TECHNIQUE: ART INTEGRATED PROJECT</b></p> <p><b>OBJECTIVES:</b> To calculate the Electricity bill of 3 neighbours / three friends and compare and analyze the electricity consumption by 3 neighbours / three friends with your own house E-bill.</p> <p><b>PROCEDURE:</b> (1) Choose a month for calculation of E-bill. (2) Find out the difference in meter readings at the beginning and end of the chosen month. (3) Calculate the bills of 3 neighbours / three friends along with your own house. (MATHS/Physics) (4) Talk to neighbours/ friends about different electrical and electronic gadgets they are using every month (on an average): (ENGLISH) (5) Make a bar graph of consumption in that month vs individual house. (MATHS) (6) Investigate the reason behind high consumption of electricity in a house with respect to others. (7) Suggest the future remedy. (SOCIAL STUDIES) (8) Solar cells (panels) can be suggested to reduce the consumption of electricity and also to support the usage of renewable sources of energy.(YOUR VIEWS) (9) Present a skit on saving electricity.(ART)</p>	<p>Introduction to AI Awareness through Google story Speaker Link to install Story Speaker extension for Story Speaker: <a href="https://chrome.google.com/webstore/detail/story-speaker/ohfibhfhbkndfkipjdpbnegkbkjpj">https://chrome.google.com/webstore/detail/story-speaker/ohfibhfhbkndfkipjdpbnegkbkjpj</a></p>	<p>1) A charge of 100 C flows through a bulb in 5 minutes. How much current is flowing through the bulb? 2) A conducting wire carries <math>10^{21}</math> electrons in 4 minutes. What is the current flowing through the wire? 3) Work of 14 J is done to move 2 C charge between two points on a conducting wire. What is the potential difference between the two points? 4) In order to move a charge of 3 C between two points on a conducting wire, 12 J of work is done. How much increase or decrease in the voltage will increase the work done on the same amount of charge to 36 J? 5) A piece of wire is measured to have resistivity in the order of <math>10^{-9} \Omega \text{ m}</math>. What should its material be classified into? 6) Which combination of a 2 <math>\Omega</math> resistor and 4 <math>\Omega</math> resistor offers the least resistance to current in the circuit? 7) The image shows a combination of 4 resistors.[FIG] What is the net resistance between the two points in the circuit? 8) A bulb has a resistance of 5 <math>\Omega</math>. If 2 A of current at 200 V flows through the bulb, how much heat is produced by the bulb in 10 minutes? 9) An electric toaster has a power rating of 200 W. It operates for 1 hour in the morning and 1 hour in the evening. How much does it cost to operate the toaster for 10 days at Rs 5 per kW h?</p>	<p>1) A circuit has a charge of 2C moving through it in 3 s. Which electrical component in the circuit, if present, will show the current? Test items (a) Voltmeter will show a current of 6 A. (b) Ammeter will show a current of 0.7 A. (c) Rheostat will show a current of 0.7 A. (d) Resistor will show a current of 0.35 A. 2) The image shows a circuit diagram.[FIG]What is being measured using the voltmeter? (a) current in the circuit (b) voltage in the circuit (c) voltage across the resistor (d) resistance offered by the resistor 3) What is the relationship between resistance and current? (a) They are directly related to each other. (b) They are inversely related to each other. (c) The resistance has a greater magnitude than current. (d) The current has a greater magnitude than resistance. 4) Which plot shows the change in voltage when the current is gradually decreased across a resistor? [OPTIONS AS GRAPHS] 5) Which one among a bar of an alloy of mass 2 kg and a 3 kg iron bar of same dimension has greater resistivity? (a) Iron bar because it has higher mass. (b) Alloy bar because it has lower mass. (c) Iron bar because it has same types of atoms. (d) Alloy bar because it has different types of atoms 6) How much more heat is produced, if current is doubled? (a) twice the original amount (b) thrice the original amount (c) four times the original amount. (d) five times the original amount. 7) In order to reduce electricity consumption at home, what kind of appliance should one purchase? (a) one which draws low power (b) one which produces less heat (c) one which operates at a higher voltage (d) one which draws a high amount of current</p>
April	2nd week	Electricity		To Plot a graph between voltage and current, in order to prove ohm's law & find resistance.	Students will be able to Construct an electric circuit based on ohm's law Solve the problems based on ohm's law Derive the current drawn from the given circuit using ohm's law when resistance and voltage is given	Experiment with Simple electric circuit	Smart board, Ncert book, related videos, ppt, sticky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Competencies:Communication, problem solving digital competence,critical thinking,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness Values: Respect,integrity,empathy,resilience,honesty,care,tolerance	Identify different electric power distribution companies in U A E				
April	3rd week	Electricity		To Define resistivity and its range for different materials, in order to classify substances as conductors, alloys and insulators.	Students will be able to Derive the relation connecting resistivity and resistance Apply the symbolic representation in deriving the concept Apply the concept in the electrical circuit	Concept based worksheet	Smart board, Ncert book, related videos, ppt, sticky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Competencies:Communication, problem solving digital competence,critical thinking,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness Values: Respect,integrity,empathy,resilience,honesty,care,tolerance	How will you conserve electricity and how is it important for the future of U A E				
April	4th week	Electricity		To explain Series combination of resistors and its applications in daily life.	Students will be able to Construct an electric circuit with series circuit Apply the theoretical knowledge and examine that why series connection is not used for domestic purpose	Making Simple series electric circuit using Phet simulation.	Smart board, Ncert book, related videos, ppt, sticky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Competencies:Communication, problem solving digital competence,critical thinking,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness Values: Respect,integrity,empathy,resilience,honesty,care,tolerance	Give examples of alternative sources of energy that are suitable for U A E				
May	1st week	Electricity	8	To explain parallel combination of resistors and its applications in daily life.	Students will be able to Construct an electric circuit with parallel circuit Apply the theoretical knowledge and examine that why parallel connection is used for domestic purpose	Making Simple parallel electric circuit using Phet simulation.	Smart board, Ncert book, related videos, ppt, sticky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	Competencies:Communication, problem solving digital competence,critical thinking,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness Values: Respect,integrity,empathy,resilience,honesty,care,tolerance	Make a energy conservation model suitable for U A E				

May	2nd week	Electricity		To Explain and calculate the heating effect of electric current, in order to learn working of appliances like heater, iron and fuse.	Students will be able to Observe and apply the heating effect of electric current in real life application in various electrical appliances.	Solving defferentiated task sheets	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness <b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance	Discuss about the support of U A E government for all residents through their well planned energy distribution system.			
MAY	3RD WEEK		UNIT TEST - 1 [REVISION]									
May	3rd week	Electricity		To Calculate power, in order to represent electric consumption in domestic circuits	Students will be able to Solve the problems based on power Derive the current drawn from the given circuit using ohm's law when resistance and voltage is given.	Solving defferentiated task sheets	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness	What suggestions do you have to enhance the efficient utilisation of electrial energy in U A E.	What is the frequency and potential difference rating of power supply in U A E- ppt presentation/ video making.		
May	4Th week	Magnetic effects of electric current		To Draw magnetic field lines for a bar magnet, in order to identify the magnetic field strength at different points around a magnet  To discuss about the properties of magnetic field lines. To Represent magnetic field lines for a straight current carrying conductor, in order to identify the magnetic field strength at different points around it.	Students will be able to Apply the concept of magnetic field due to a current carrying conductor Analyse about the Magnetic field, field lines, field due to current carrying coil or solenoid	Experiment on magnetic field due to current distributions.	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness <b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance	Site a recent step took by UA E government to benefit the residents which involve the use of magnetic field		1)A student placed a magnetic compass around a straight current carrying wire. The student noticed when he moved the compass away from the wire, the deflection in compass decreases. How around a bar magnet? 2) The image shows the magnetic field lines around a straight current carrying conductor[IMAGE] If the direction of the current in the straight wire is Changed, what change in the magnetic field line will be observed? 3) Where should the magnetic compass be placed in solenoid to get maximum deflection in the magnetic compass? 4) A metal rod PQ is placed in the magnetic field. The ends of the rod are connected with a battery using wires.[FIG] Where will the rod move? 5) A student inserts a bar magnet in the coil. The student observes deflection in the galvanometer connected to the coil. What will happen if the magnet is continuously getting in and out of the coil? 6) A student makes an arrangement to study electromagnetic induction, as shown.[FIG] She changes the arrangement in four different ways. [TRIALS IN FORM OF TABLE GIVEN] In which trial the galvanometer would remain undeflected? 7) The image shows the components of an electric generator.[IMAGE] WhenWhen the coil PQRS is rotated as shown. What is the direction of electric current when coil completes half cycle of the rotation? 8) A force is applied to a wire inside a horse shoe magnet. The current induced in the wire as shown.[IMAGE] Three other arrangement X, Y and Z are setup as shown.In which arrangement/ s, the direction of induced current will be the same as the direction of current in arrangement P?	1) A student learns that magnetic field strength around a bar magnet is different at every point. Which diagram shows the correct magnetic field lines around a bar magnet? [OPTIONS AS PICTURES] 2) A student places some iron fillings around a magnet. The iron fillings arrange themselves as shown in image.[IMAGE] The student labelled four different regions around the magnet. Where would be the magnetic be the strongest? (a) P (b) Q (c) R (d) S 3) Which diagram shows the magnetic field lines around a current carrying circular loop? [DIAGRAM AS OPTION] 4) Which diagram shows the correct direction of the magnetic field lines at point P and Q in current carrying circular loop? [ IMAGE AS OPTION] 5)The magnetic field lines of solenoid are similar to the magnetic field lines of bar magnet. Which image correctly shows the solenoid as a bar magnet? [IMAGE AS OPTION] 6) The image shows the Fleming's left-hand rule.[IMAGE] Which option explains the rule to understand the working of motor? (a) When a current carrying conductor is moved with a force, it creates a magnetic field. (b) When a conductor is moved inside a magnetic field, current is produced in the conductor. (c) When magnetic field is moved relative to the conductor, current is produced in the conductor. (d) When a current carrying conductor placed in a magnetic field, it experiences a force by magnetic field. 7) Appliances that have metal body are generally connected to the earthing wire. What is the reason to earth these wires? (a) to prevent excess of current (b) to prevent the leakage of current (c) to provide extra current to appliance (d) to provide high resistance to the appliance. 8) Which diagram shows the domestic electric circuit?[IMAGE AS OPTIONS]
June	1st week	Magnetic effects of electric current	8	To Draw magnetic field lines for at current carrying circular loop, in order to identify the magnetic field strength at different points around it. To explain Force on current carrying conductor, Fleming's left hand rule.	Students will be able to Analyse the Force on current carrying conductor, Fleming's left hand rule.	Solving defferentiated task sheets	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness <b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance	Identify various modes of transportation in U A E			
June	2nd week	Magnetic effects of electric current		To Outline magnetic field lines for at current carrying solenoid, in order to identify the magnetic field strength at different points around it. To Discuss electromagnetic induction, in order to understand how a moving magnet can be used to generate electric currents. To Explain Fleming's right hand rule, in order to understand the working of an electric generator	Students will be able to Explain electromagneticinduction Define Induced potential difference, Induced current and apply Fleming's Right Hand Rule in the determination of direction of current in an electric generator	Demonstration and experiment on Electromagneticinduction using phet simulation.	Smart board, Ncert book, related videos, ppt, stcky notes , blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness <b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance	Which hospitals in U A E has MRI scanning.	make a list of hospitals using MRI scanning facility and how they are maintaining it.make a presentation based on your views.	Introduction to AI Awareness through Google story Speaker Link to install Story Speaker extension for Story Speaker: <a href="https://chrome.google.com/webstore/detail/story-speaker/ohfibhfhbkhndkipjdcpbneqbkjpi">https://chrome.google.com/webstore/detail/story-speaker/ohfibhfhbkhndkipjdcpbneqbkjpi</a>	
JUNE	3rd week		PERIODIC ASSESSMENT - 1 [REVISION]									





OCTOBER	2nd week	Light	<ul style="list-style-type: none"> <li>To Represent the path of incident ray and reflected ray in order to decipher the position and nature of image formed.</li> </ul>	<p>Students will be able to Discuss and elaborate about the images formed by spherical mirrors.</p>	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<p><b>Competencies:</b>Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness</p> <p><b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance</p>	List the applications of spherical mirrors by identifying the places it used in U A E	<p>Understand that light travels in a straight path and can be refracted with a convex lens.</p> <ul style="list-style-type: none"> <li>Understand that light-sensitive chemical processes can be used to create images using light as a catalyst.</li> <li>Identify characteristics of light waves and make predictions about how light can be manipulated to affect a photograph.</li> <li>Create and develop photographs using a pinhole camera.</li> <li>Compare and contrast photographs made with different types of cameras.</li> </ul>	glass slab, the ray of light bends towards the normal. But as refracted ray emerges out of the glass slab to the vacuum, it bends away from the normal, as shown.[FIG] Which option explains the law of refraction of light through the glass slab? (a) light always bends towards the normal in a glass slab (b) ray of light always travels in a straight path irrespective of change in medium (c) the incident ray, the refracted ray, and the normal to the interface always lie on the same plane (d) ray of light travelling in the air is always considered as the incident ray, and the one in the glass is the refracted ray 8) A student studies that speed of light in air is 300000 kms/ sec where that of speed in a glass slab is about 197000 kms/ sec. What causes the difference in speed of light in these two media? 9) The speed of light in air is $3 \times 10^8$ m s <sup>-1</sup> , whereas that of the speed of light in water is $2 \times 10^8$ m s <sup>-1</sup> . What is the refractive index of water with respect to air?	4) A student studies that convex lens always forms virtual image irrespective of its position. What causes the convex mirror to always form a virtual image? (a) because the reflected ray never intersects (b) because the reflected ray converges at a single point (c) because the incident ray traces its path back along the principal axis (d) because the incident ray of a convex mirror gets absorbed in the mirror 5) The image shows the path of light travelling through a glass slab. What causes the ray of light to deviate from its original path? (a)change in the amount of light (b) change in the direction of wind flow (c) change in the temperature of the air (d) change in the density of the medium	
	3rd week	Light	8 <ul style="list-style-type: none"> <li>To obtain , mirror formula (Derivation not required), magnification.</li> </ul>	<p>Students will be able to Construct the mirror formula (Derivation not required), magnification and apply it in new situations.</p>	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<p><b>Competencies:</b>Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness</p> <p><b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance</p>	List innovative ideas for the use of spherical mirrors, by identifying the places where it can be used in U A E.				
	4Th week	Light	<ul style="list-style-type: none"> <li>To Demonstrate the path of light when it travels through a rectangular glass slab, in order to formulate laws of refraction of light.</li> <li>To state laws of refraction. To illustrate the path of incident &amp; reflected light rays from a convex lens, in order decipher the position and nature of image formed.</li> </ul>	<p>Students will be able to Do Experiment with Refraction; laws of refraction, refractive index. Organize the Refraction of light by spherical lens. Image formed by spherical lenses.</p>	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<p><b>Competencies:</b>Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness</p> <p><b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance</p>	Which eye defect is common in U A E				
NOVEMBER	1st week		UNIT TEST - 2 (REVISION)									
	1st week	Light	<ul style="list-style-type: none"> <li>To apply Lens formula (Derivation not required),</li> <li>To Deduce the nature and size of image by magnification in order to relate height of object with height of image.</li> <li>To Calculate the power of a lens, in order to determine its power to converge or diverge.</li> </ul>	<p>Students will be able to Deduce and apply Lens formula (Derivation not required),Magnification. Power of a lens in solving formula</p>	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<p><b>Competencies:</b>Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness</p> <p><b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance</p>	Suggest measures to develop healthy habits while living in U A E				
	2nd week	Human eye and colorful world	<ul style="list-style-type: none"> <li>To Relate changes in focal length of eye lens to vision of distant and nearby objects.</li> <li>To Describe the structure of an eye and functions of various parts that help humans to see.</li> </ul>	<p>Students will be able to Draw the structure of human eye Explain Functioning of a lens in human eye</p>	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<p><b>Competencies:</b>Communication, problem solving digital competence,critical thinkng,collaboration, cultural awareness,creativity and innovation,independent learning,leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness</p> <p><b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance</p>	Name the number one medical college located in U A E.	construct the model of Human eye. Make a presentation about the laser technique used in the different areas of eye surgery.	3 D model of eye		

NOVEMBER	3rd week	Human eye and colorful world	8	To identify the causes of defects of vision in human eye and suggest correction procedures. To explain applications of spherical lenses	Students will be able to Analyse defects of vision and explain their corrections	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng.collaboration, cultural awareness,creativity and innovation,independent learning.leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness <b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance	Explain any one optical phenomenon that you observed while you are in U A E	create an innovative art work based on optical illusion .	study about optical illusion and 3D images.	1) Rahul conducts an experiment using an object of height 10 cm and a concave lens with focal length 20 cm. The object is placed at a distance of 25 cm from the lens. Can the image be formed on a screen? 2) A student conducts an experiment using a convex lens of focal length 20 cm and an object of height 15 cm. He placed the object at 25 cm from the lens. Can the image be formed on a screen? 3) Kumar conducts an experiment using a concave lens with focal length of 20 cm. He places an object at a distance of 30 cm in front of the lens. Where is the image most likely to form? 4) Rakhi conducts an experiment to produce an image of an object on a screen which is placed at 20 cm from the lens. She uses a convex lens of focal length 15 cm for the experiment. Where should she place the object in order to produce the sharpest image? 5) An image of an object produced on a screen which is about 36 cm using a convex lens. The image produced is about 3 times the size of the object. What is the size of the object? 6) An object of height 10 cm is placed in front of a convex lens having focal length of 12 cm. The object is placed at a distance of 36 cm in front of the lens. How many times is the image likely to be magnified? 7) A student conducts an experiment using a convex lens. He places the object at a distance of 60 cm in front of the lens and observed that the image is formed at a distance of 30 cm behind the lens. What is the power of the lens? 8) A person standing at point Y is watching a car coming from a point X to O as shown.[IMAGE AND TABLE] The table shows the variation in the parts of eye while seeing the car at X and O. Which change in the person's eye would likely to occur while watching the car? 9) The image shows the ray diagram of a defected eye.[IMAGE] Which option shows the correction of the defect of the eye? 10) A student learns that the scattering of sunlight depends on the wavelength of the light and size of particles present in the atmosphere. The student collects the data about the wavelength of the visible lights and size of the particle as shown.[FIG] Which particles will scatter blue light?	1) A concave lens has a focal length of 20 cm. What is the power of the lens? (a) -5 dioptre (b) -0.05 dioptre (c) 0.05 dioptre (d) 5 dioptre 2) In which part of the human eye the image of an object is formed? (a) iris (b) pupil (c) retina (d) cornea 3) A person gets out in the sunlight from a dark room. How does his pupil regulate and controls the light entering in the eye? (a) the size of pupil will decrease, and less light will enter the eye (b) the size of pupil will decrease, and more light will enter the eye (c) the size of pupil will remain same, but more light will enter the eye (d) the size of pupil will remain same, but less light will enter the eye 4) A person is seeing an object closer to his eyes. What changes in his eyes will take place? (a) the pupil size will expand (b) the ciliary muscles will contract (c) the focal length of eye lens will increase (d) the light entering in the eye will be more 5) A person went for a medical check-up and found that the curvature of his eye lens is increasing. Which defects he is likely to suffer from? (a) myopia (b) cataract (c) presbyopia (d) hypermetropia 6) The image shows a light ray incident on a glass prism.[IMAGES AS OPTION] 7) The image shows the dispersion of the white light in the prism. What will be the colours of the X, Y and Z? (a) X: red; Y: green; Z: violet (b) X: violet; Y: green; Z: red (c) X: green; Y: violet; Z: red (d) X: red; Y: violet; Z: green 8) Why stars appear to twinkle at night? (a) because the light of stars travels in different medium (b) because the distance of star varies when earth rotates (c) because the star changes its position relative to earth (d) because the atmosphere reflects the light at different angles 9) Which option justifies that the Sun appears red at sunrise and sunset? (a) red scatters highest by the atmosphere
	4Th week	Human eye and colorful world		To Examine the path of light rays through a prism and identify various rays and angles formed. To Demonstrate that white light is dispersed into seven colours by a prism and explain the reasons for the same.	Students will be able to construct and analyse refraction of light through a prism, dispersion of light	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng.collaboration, cultural awareness,creativity and innovation,independent learning.leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness <b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance	Study and suggest places where you find the necessity of traffic signals in U A E	formation of rainbow and different applications of scattering of light a video presentation.			
	1st week	Human eye and colorful world		To Provide scientific explanation for twinkling of stars, advanced sunrise and delayed sunset. To Relate scattering of light to Tyndall effect, blue colour of sky and red colour of sun at sunrise and sunset.	Students will be able to Discuss about scattering of light, and its applications in daily life	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng.collaboration, cultural awareness,creativity and innovation,independent learning.leadership and responsibility,self	List advantageous and disadvantageous of roundabouts in AI Ain in comparison with traffic signals.				
PRE BBOARD EXAMINATION-1													
December	2ND week	Revision		To understand Electric current, potential difference and electric current. To describe Ohm's law; Resistance To explain parallel combination of resistors and its applications in daily life.	Students will be able to Draw the different symbolic representation of electrical components Design and construct a electrical circuit with battery, key, bulb, ammeter Apply and observe the electrical circuit concept in real life application in various electrical appliances	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng.collaboration, cultural awareness,creativity and innovation,independent learning.leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness <b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance		REVISION QUESTIONS/ PREVIOUS YEAR QP DISCUSSION/ PROBLEM SOLVING			
WINTER VACATION													
JANUARY	1st week	Revision	4	To explain parallel combination of resistors and its applications in daily life. To understand Heating effect of electric current and its applications in daily life.	Students will be able to Construct an electric circuit with parallel circuit Apply the theoretical knowledge and examine that why parallel connection is used for domestic purpose	<ul style="list-style-type: none"> <li>Group discussion</li> <li>Experiments</li> <li>Project</li> <li>Differentiated Worksheets</li> <li>Power point presentation</li> </ul>	Smart board, Ncert book, related videos, ppt, sticky notes, blank papers, differentiated worksheets, assessment tasks etc.phet simulations	<b>Competencies:</b> Communication, problem solving digital competence,critical thinkng.collaboration, cultural awareness,creativity and innovation,independent learning.leadership and responsibility,self confidence,innovation and self direction,global and environmental awareness <b>Values:</b> Respect,integrity,empathy,resilience,honesty,care,tolerance		REVISION QUESTIONS/ PREVIOUS YEAR QP DISCUSSION/ PROBLEM SOLVING			



