BCM SCHOOL

A Sr. Sec School Affiliated to CBSE,New Delhi

Annual Academic Calendar

Class :-X **SUBJECT-PHYSICS** **Session :- 2020-2021**

MONTH	TOPIC	LEARNING OUTCOMES	SOURCE/RESOURCES	SUGGESTED ACTIVITIES
	CHAPTER 10 LIGHT	**THE LEARNER WILL BE ABLE TO**	**NCERT/STATE TEXT BOOK**	
APRIL	**1-REFLECTION OF LIGHT**	•Identify light as a form of energy that affects sight	https://youtu.be/m-21BHddGu0	*How do we observe the image formed by (i) concave (ii) convex reflecting surfaces Watch the below link activity and make a list of reflecting surfaces
		• Distinguish between ray and beam • Conceptualize the term Reflection of light and laws of reflection	https://youtu.be/R-rPGtLjxlQ	https://www.youtube.com/watch?v=IXukVFHfX6A
		• Analyse image formation in plane mirror and name the characteristics of this image • Distinguish between real & virtual image	https://youtu.be/v0sXOq9k6P0	
		• Comprehend the term spherical mirrors, identify their types and define the terms—pole, aperture, focus principal axis, centre of curvature, radius of curvature focal length.	https://youtu.be/k4Nr4_i-wh0	
		• Discover rules for obtaining image formed by spherical mirrors. • Draw ray diagrams to show formation of image by concave and convex mirror	https://youtu.be/3-VP9j6RqKA	https://www.youtube.com/watch?v=LMrpY13ypmo

		• Study the formation of image by a concave mirror and a convex mirror for different positions of objects	https://youtu.be/W3JE0OhAZqA	*What happens when sun rays are focussed by a concave mirror on a piece of paper go through above activity link and create your own video
		• Experimentally find focal length of a concave mirror by focussing the image of a distant object.	https://youtu.be/P9tPk5jCchQ	
		• Investigate the uses of plane mirrors, concave mirrors and convex mirrors in our day-to-day life, with the help of activity	https://youtu.be/AqXjuRie6mY	*How can the image of an object formed in a plane mirror be studied
		• Analyse that as they see an ambulance coming on the road, should immediately give the way so that the patient inside can reach hospital at earliest	https://youtu.be/DuaXfkw3wGU https://youtu.be/_86PsrjubrU	
MAY	**2-Refraction of Light and Lenses**	• Classify optical medium as a rarer or a denser medium. • Comprehend definition of refraction of light and represent diagrammatically	https://youtu.be/_AQI17fXPKo	
		• Evolve laws of refraction of light, verify them experimentally • Interpret the meaning of the term refractive index and its relation to the velocity of light	https://youtu.be/EWJthSa_6u4	

		• Analyse the reason behind everyday phenomena using knowledge of refraction of light • Develop definition of a lens • Identify types of lens • Discover rules for image formation in lenses	https://youtu.be/Nn_PxgYFRIA	
		• Sketch ray diagrams to locate image in convex and concave lenses • Study the image formed by lenses	https://youtu.be/KKvRLDa-dv8	
		• Experimentally find the focal length of convex lens by focussing the image of a distant object	https://youtu.be/RMfuREalTWM	
		• Comprehend the lens formula and magnification formula • Solve numerical problems	https://youtu.be/QOM-J22AM7I	
		• Develop meaning of power of lens, state and define its unit.	https://youtu.be/Csv4Wi2a1lQ	
JUNE	**SUMMER BREAK**			
JULY	**CHAPTER-11 Human Eye and Colourful World**			
	1- Refraction of light through a glass prism	• Draw the shape of the prism and define angle of prism. • Trace the path of a ray of light through a glass prism • Develop meaning of angle of deviation	https://youtu.be/JsaUCH6f5pU	*Observe the bending of pencil and raising of coin , lemon in pure water and write your observation regarding phenomenon of refraction

	2-Dispersion of light	• Comprehend the term dispersion of light • Develop the meaning of spectrum & name its colours • Deduce the cause of dispersion	https://youtu.be/G4YX6xNNXDc	*Try to disperse the white light coming from sun by the soap bubble and click the pictures.
		• Illustrate that white light is composed of seven colours • Logically analyse the reason for the formation of rainbow.	https://youtu.be/rMQli-Gmz2w	
	3- Atmospheric Refraction	• Discover that atmosphere consists of layers of air having different densities.	https://youtu.be/KIAxm1UEOGc	*Observe the colour of sun in the morning, noon and evening for 5 days and write the observations. Now discuss with your friends and teacher the reason behind the different observations
		• Justify how stars appear to twinkle but planets do not twinkle. • Deduce the reason for apparent position of star due to refraction		
		• Understand the reason for advanced sunrise and sunset • Understand the reason for advanced sunrise and sunset		

	3- Scattering of light	• Develop concept of scattering of light and Tyndall Effect • Infer that the colour of Scattered light depends on the size of particles • Reason out the blue colour of the sky & red colour of sun at sunrise • Observe the scattering of blue light by colloidal solution	https://youtu.be/F0WBGw3fims	*After watching link create your own video on Tyndall effect at home
SEPTEMBER		**MID-TERM EXAM**		
OCTOBER	**CHAPTER 12- ELECTRICITY**	• Identify charge as a fundamental quantity. • Develop meaning of electric current and its unit, electric potential, potential difference and their units.	https://youtu.be/0AaCcJ_j4mw	*With the help of battery, bulb switch, wire construct electric circuit
		• Evolve Ohm's law and express it mathematically. • Verify Ohm's law experimentally.	https://youtu.be/phg401i2GQI	
		Ohm's law • List the factors which affect resistance.	https://youtu.be/6xyg1Ohu7BE	
		• Explain resistivity, Conductors, resistors & insulators • Experimentally determine the factors affecting resistance	https://youtu.be/jEmMTUyUKsA https://youtu.be/7w7MiieTPjk	*Make a list of conductor , insulator and write their properties
		• Calculate effective resistance in series and in parallel combination	https://youtu.be/JIwGgQrK684	

		• Experimentally verify the laws of resistances in series and in parallel	https://youtu.be/oCQeF7WRNgs	
	2- Heating effect of current	• Analyse the uses of conductors, resisters and insulators. • Observe that heat is produced due to flow of current • State Joule's law and express it mathematically • Recognise application of commercial unit of energy in our daily life • Infer that appliances of higher power consume more energy. So to save energy, use of high power appliances should be minimized • Discover applications of heating effect of electric current like fuse, heaters.	https://youtu.be/zqapY8PSB6M https://youtu.be/sWd5dd8RG_A https://youtu.be/7YrjrHAwqcM	*Calculate the electricity bill of your house for the month of August by Calculating power, energy consumption by appliances
NOVEMBER	**CHAPTER 13- Magnetic Effect of Electric Current** **1. Magnets** **2. Magnetic effect of electric current**	• Recall magnets and list their important properties • Conceptualize magnetic field lines and list their properties • Experimentally trace magnetic lines of force • Interpret construction of Solenoid & electro-magnet and their uses *Comprehend and apply right hand thumb rule to find out direction of magnetic field	https://youtu.be/3lusVaE4Gx0 https://youtu.be/ETJWrsJtN9I https://youtu.be/Dm686nrNnfc https://youtu.be/mpOg-qGwHiM https://youtu.be/8hFWFtFBFpM	*After watching link 2 and 3 Draw magnetic field lines around a bar magnet? With the help of compass *Does a current carrying conductor produce magnetic field? JUSTIFY

		• Experimentally study the force acting on a current carrying conductor • Comprehend and apply Fleming's Left hand rule for finding direction of force on a current carrying conductor	https://youtu.be/lahQXNvZxt8 https://youtu.be/GkD8RMEXi6s https://youtu.be/IGfO7MKVxmg https://youtu.be/17ePwh-bg_4	
	3.Electromagnetic induction	• Observe experimentally electromagnetic induction. • Comprehend induced current, state Fleming's Right hand rule and apply it to find direction of induced current	https://youtu.be/YddV_FkCKYM	

LIST OF EXPERIMENTS

1. Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with a) Litmus solution (Blue/Red)
b) Zinc metal
c) Solid sodium carbonate

2. Performing and observing the following reactions and classifying them into:
A. Combination reaction
B. Decomposition reaction
C. Displacement reaction
D. Double displacement reaction
(i) Action of water on quicklime
(ii) Action of heat on ferrous sulphate crystals
(iii) Iron nails kept in copper sulphate solution
(iv) Reaction between sodium sulphate and barium chloride solutions

3. Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions:
i) $ZnSO_4$ (aq) ii) $FeSO_4$ (aq) iii) $CuSO_4$ (aq) iv) $Al_2(SO_4)_3$(aq)
Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above

4. Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determining its resistance. Also plotting a graph between V and I.

5. Experimentally show that carbon dioxide is given out during respiration

6. Determination of the focal length of (i) Concave mirror and (ii) Convex lens by obtaining the image of a distant object.

7. Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, angle of emergence and interpret the result.

8. Studying (a) binary fission in Amoeba, and (b) budding in yeast and Hydra with the help of prepared slides.

9. Tracing the path of the rays of light through a glass prism.

DELETED CHAPTERS			
SR.NO	**NAME OF THE CHAPTER/TOPICS**	**LEARNING OUTCOMES**	**SUGGESTED ACTIVITIES**
1	**CHAPTER-14** **Source of energy**	*Able to know about energy extracted from different form of energy	Maka a POWERPOINT PRESENTATION on different form of energy with their advantages and disadvantages
2	**CHAPTER 13** **Magnetic effect of electric current** Electric Generator Domestic electric circuit	*Able to know about electric generator and differentiate between AC and DC current	Differentiate between the appliances available in your home in which AC and DC current flow and also write their characteristics