

BHARTIYA VIDYA MANDIR SENIOR SECONDARY SCHOOL
SECTOR-39, CHANDIGARH ROAD, LUDHIANA
SYLLABUS OF CLASS X

BOOK: NCERT		SUBJECT : SCIENCE		SESSION : 2024-25	
PHYSICS					
Month	Unit/Chapter/Topic	Learning Objectives	Resources/Art-integrated pedagogy tools used/		Learning Outcomes/
			E-Resources		Skills learnt by students
APRIL	CH-9 LIGHT: REFLECTION AND REFRACTION	Students will be able to- · Define reflection · State laws of reflection · Differentiate between types of reflection · Differentiate between real and virtual image. · Define terms related to spherical mirror. · Define refraction · State laws of refraction · State causes for refraction · Define and calculate refractive index · State factors affecting refractive index · Explain refraction through spherical lenses · Draw image formation for spherical mirrors and state the nature and position of image. · Make use of mirror formula	TOOLS: Lecture method, brainstorming, Chalk and board, Questioning. ACTIVITY- To observe refraction through glass slab and check relation between emergent ray and incident ray.	https://youtu.be/XNIDK52wlrQ?si=wW6-yopyqwVEoMSx	"Students are now able to · Understand the difference between reflection and refraction. · Apply the concept of reflection and refraction in daily observation · Understand the application of spherical mirrors and state its uses. · Can make use of mirror formula · Apply sign conventions correctly · Apply the concept of refraction to day today life e.g. twinkling of stars, apparent bending of straw/ spoon when kept in glass filled with water etc. SKILLS: *Observation *Conclusion * Drawing and labelling
MAY	CH-9 LIGHT: REFLECTION AND REFRACTION	Students will be able to- · Draw image formation by spherical lenses. · Apply sign conventions correctly · Calculate power of lens. · Calculate focal length of combinations · Draw the image formation through glass slab and able to calculate the refractive index · Draw the tracing of light through glass prism and able to understand the relation between emergent and incident ray.	TOOLS: Lecture method, brainstorming, Chalk and board, Questioning. ACTIVITY: To observe lens and tell their types by their thickness across edges and centre.	https://youtu.be/wmImGo8XHtE?si=I_-HDyEv5gcV_KII	Students are now able to- *draw ray diagrams and solve numericals of lens. *calculate power of lens *appreciate importance of lens and mirrors SKILLS: *Observation *Conclusion * Drawing and labelling
JUNE	SUMMER VACATIONS				
JULY	CH-10 HUMAN EYE AND COLORFUL WORLD	Students will be able to- • comprehend the structure of human eye and the defects of vision. • perform experiment to observe refraction of light through glass prism. • observe phenomenon of dispersion. • infer the meaning of spectrum and reason for rainbow formation. • comprehend the atmospheric refraction. • reason out: why star appear to twinkle, why planet are seen at apparent position, • analyse reason for the scattering of white light. • illustrate why sky appears blue. • explain why danger signals are always painted red.	TOOLS: Demonstration method, Chalk and board, Questioning, Discussion method. ACTIVITY: To observe deviation of light through a glass prism.	https://youtu.be/L5ylfTr0pb4?si=bFuoG9Q0toY9Tnpx	Students are now able to: *explain the working of human eye and the defects of vision. • discuss the phenomenon of Dispersion in detail. • comprehend the applications of atmospheric refraction. • comprehend the phenomenon of scattering of light in the atmosphere and its implications. SKILLS: *Critical thinking *Collaboration *Observation *Conclusion

AUGUST	CH-11 ELECTRICITY	Students will be able to : *Define electric current, potential difference, resistance, resistivity. * Deduce Ohm's law and verify it experimentally. *Solve numericals .	TOOLS: Demonstration method, Chalk and board, Questioning, Discussion method. ACTIVITY: To verify ohm's law experimentally.	https://www.youtube.com/live/7nyvFw6Nge4?si=j6KBq4zyet_j9d-m	Students are now able to: *define terms like current,ampere,potential difference,volt,resistance,ohm etc. *define and calculate resistivity. *understand ohm's law. SKILLS: *Critical thinking *Collaboration
SEPTEMBER TERM-1 EXAMINATION					
OCTOBER	CH-11 ELECTRICITY	Students will be able to : *Understand the meaning of 'series and parallel combination' of resistors, learn the way of connecting a given number of resistors. *Understand Reasons for arrangement of devices, 'in parallel' with each other, in domestic circuits. *Describe Heating effect of electric current and derive Joule's law of heating. *Find an expression for electric power and derive commercial unit of electrical energy in kWh.	TOOLS: Demonstration method, Chalk and board, Questioning, Discussion method.	https://youtu.be/ICP26s5sISM?si=qfSVR8rdWCJQOtSq	Students are now able to: *draw various circuit diagrams *solve numericals based on series and parallel connections *define electrical power and solve numericals. *understand the concept of fuse. SKILLS: *Critical thinking *Collaboration
NOVEMBER	CH-12 MAGNETIC EFFECTS OF ELECTRIC CURRENT	Students will be able to: • observe magnetic field lines due to a bar magnet. • enumerate properties of magnetic field lines. • demonstrate the presence of magnetism due to a current carrying conductor. • draw field lines due to straight, circular current carrying conductor and solenoid with the help of right hand thumb rule. • find the direction of force on a conductor kept in magnetic field with the help of Fleming's left hand rule. •find direction of induced current with the help of Fleming's right hand rule.	TOOLS: Demonstration method, Chalk and board, Questioning, Discussion method. ACTIVITY: To observe the magnetic field lines due to a bar magnet using iron fillings.	https://youtu.be/rjGH0B-vVA?si=vE0Y2e-n8lyuGTSP	Students will be able to: • demonstrate and analyse magnetic field lines and their properties. • state and apply Right hand thumb rule. • state and apply Fleming's left hand rule. • state and apply Fleming's Right hand rule. SKILLS: *Observation *Analysis *Scientific temper
DECEMBER	CH-11 SOUND	Students will be able to learn: 1) Concept of sound and its propagation. 2) The meaning and concept of frequency, wavelength, time period. 3) Concept of loudness and pitch. 4) The meaning of intensity of sound. 5)The Difference between intensity of sound and loudness. 5) Meaning of echo and reflection of sound. 6) Concept of the reverberation of sound and its application. 7) Meaning of sonic boom and ultrasound and its application. 8) Concept of the SONAR.	TOOLS: Discussion method, Chalk and Board, Brainstorming, Concept mapping. ACTIVITY: To verify the laws of reflection of sound.	https://youtu.be/KWphn8yDbqs?si=a7hzO1jed4_icXUy	Students have understood and learnt: 1)concept of sound propagation. 2)terms like wavelength,frequency,time period,pitch,intensity,amplitude, loudness, shrillness etc. 3)concept of echo and reverberation 4)applications of reflection of sound in real life and appreciate their importance. SKILLS: *Communication *Critical thinking *Scientific attitude