PHYSICS
9TH GRADE

Unit-wise Heading, Sub-heading, SLO & Teaching-Method Plan | Based on National Curriculum of Pakistan 2022-23 (NBF Model Textbook)

Unit no	CONTENT (Heading / Sub-heading)	SLO #	METHOD (How to Teach)	RESPONSE
Unit 10 HEAT CAPACITY AND MODES OF HEAT TRANSFER	**10.1 Specific Heat Capacity**	01	Problem solving method	
	10.2 Modes of Heat Transfer	02	Demonstration with diagram method	
	10.3 Applications of Heat Transfer	03	Discussion method	
	10.4 Green House Effect and Global Warming	04	Case study method	
	10.5 Flow of Heat in Geothermal Activities	05	Discussion method	
Unit 11 THERMAL EXPANSION AND CHANGE OF STATE	**11.1 Kinetic Theory of Matter**	01	Lecture method	
	11.2 Thermal Expansion	02	Demonstration method	
	11.3 Evaporation	03	Demonstration method	
	11.4 Latent Heat	04	Problem solving method	
	11.5 Pressure Exerted by Gas Particles	05	Lecture method	
	11.6 Superconductivity	06	Discussion method	
Unit 12 WAVES	**12.1 Wave Motion**	01	Lecture with diagram method	
	12.2 Wave Propagation	02	Demonstration method	
	12.3 Characteristic Wave Parameters	03	Lecture method	
	12.4 Waves and their Types	04	Discussion method	
	12.5 Types of Waves On the Basis of Medium	05	Compare & contrast method	
	12.6 Types of Waves On the Basis of Propagation	06	Compare & contrast method	
	12.7 Wave Characteristics	07	Lecture method	
	12.8 Properties of Waves	08	Demonstration method	
	12.9 Tsunamis	09	Case study method	
Unit 13 SOUND	**13.1 Source of Sound**	01	Demonstration method	
	13.2 Nature of Sound Waves	02	Lecture method	
	13.3 Ultrasound	03	Discussion method	
	13.4 Infrasound	04	Discussion method	
	13.5 Characteristics of Sound Waves	05	Lecture with diagram method	
	13.6 Analysing Sound Waves	06	Hands-on/Practical method	
	13.7 Speed of Sound	07	Problem solving method	
	13.8 Noise	08	Discussion method	

Unit no	CONTENT (Heading / Sub-heading)	SLO #	METHOD (How to Teach)	RESPONSE
	13.9 Reflection, Refraction and Diffraction of Sound Waves	09	Demonstration method	
	13.10 Echo	10	Problem solving method	
	13.11 Acoustics	11	Discussion method	
	13.12 Human Hearing System	12	Lecture with diagram method	
Unit 14 OPTICS	**14.1 Reflection of Light**	01	Demonstration method	
	14.2 Refraction of Light	02	Demonstration method	
	14.3 Total Internal Reflection	03	Demonstration method	
	14.4 Thin Lenses	04	Lecture with diagram method	
	14.5 Application of Lenses	05	Case study method	
	14.6 Visible Spectrum	06	Demonstration method	
	14.7 Human Eye and Colour Perception	07	Lecture with diagram method	
	14.8 Gravitational Lensing	08	Discussion method	
	14.9 Acoustic Lenses	09	Discussion method	
Unit 15 ELECTROSTATICS	**15.1 Static Charge**	01	Demonstration method	
	15.2 Conductors and Insulators	02	Compare & contrast method	
	15.3 Charging and Discharging	03	Demonstration method	
	15.4 Electroscope	04	Hands-on/Practical method	
	15.5 Electric Field	05	Lecture with diagram method	
	15.6 Applications of Electrostatics	06	Case study method	
	15.7 Electrical Breakdown	07	Discussion method	
Unit 16 CURRENT ELECTRICITY	**16.1 Electric Current**	01	Lecture method	
	16.2 Alternating and Direct Current	02	Compare & contrast method	
	16.3 Potential Difference	03	Lecture method	
	16.4 Emf	04	Lecture method	
	16.5 Ohm's Law	05	Problem solving method	
	16.6 Resistance	06	Problem solving method	
	16.7 Resistivity	07	Problem solving method	
	16.8 Electrical Measuring Instruments	08	Demonstration method	
	16.9 Experiment for Demonstration of Resistance	09	Hands-on/Practical method	
Unit 17	**17.1 Circuit Elements and Diagram**	01	Lecture with diagram	

Unit no	CONTENT (Heading / Sub-heading)	SLO #	METHOD (How to Teach)	RESPONSE
ELECTRIC CIRCUITS			method	
	17.2 Resistors	02	Lecture method	
	17.3 Types of Resistors	03	Discussion method	
	17.4 Combination of Resistors	04	Problem solving method	
	17.5 Combination of EMF Sources	05	Problem solving method	
	17.6 Electricity and its Uses	06	Discussion method	
	17.7 Electrical Energy	07	Problem solving method	
	17.8 Electric Power	08	Problem solving method	
	17.9 Household Circuits and Electric Safety	09	Discussion method	
Unit 18 ELECTRONICS	**18.1 Semiconductors**	01	Lecture method	
	18.2 N and P Type Semiconductors	02	Compare & contrast method	
	18.3 PN Junction	03	Lecture with diagram method	
	18.4 Characteristics of Diode Under Biasing	04	Demonstration method	
	18.5 Light Emitting Diode	05	Demonstration method	
	18.6 Transistor	06	Lecture with diagram method	
	18.7 Relays and Switching Circuits	07	Demonstration method	
	18.8 Transistor as a Switch	08	Demonstration method	
	18.9 Digital Electronics	09	Discussion method	
	18.10 Fundamental Logic Gates	10	Hands-on/Practical method	
	18.11 Universal Logic Gates	11	Problem solving method	
	18.12 Uses of Logic Gates	12	Discussion method	
	18.13 Analogue and Digital Electronics	13	Compare & contrast method	
	18.14 Quantum Computers	14	Case study method	
Unit 19 ELECTROMAGNETISM	**19.1 Magnetic Field Due to Current Carrying Wire**	01	Demonstration method	
	19.2 Magnetic Field Due to Current Carrying Solenoid	02	Demonstration method	
	19.3 Earth's Magnetic Field	03	Lecture method	
	19.4 Application of Magnetic Effect of Current	04	Case study method	
	19.5 Force On a Current Carrying Conductor Placed in a Magnetic Field	05	Problem solving method	
	19.6 Current Carrying Coil in a Magnetic Field	06	Demonstration method	
	19.7 Electric Motor	07	Demonstration with	

Unit no	CONTENT (Heading / Sub-heading)	SLO #	METHOD (How to Teach)	RESPONSE
			diagram method	
	19.8 Electromagnetic Induction	08	Demonstration method	
	19.9 Lenz's Law	09	Lecture method	
	19.10 Electric Generator	10	Demonstration with diagram method	
	19.11 Transformer	11	Demonstration with diagram method	
	19.12 Deflection of Electron Beam	12	Lecture method	
	19.13 Cathode Ray Oscilloscope	13	Demonstration method	
Unit 20 ELECTROMAGNETIC WAVES	**20.1 Electromagnetic Spectrum**	01	Lecture with diagram method	
	20.2 Applications of Electromagnetic Waves	02	Discussion method	
	20.3 Risks Associated with Electromagnetic Waves	03	Debate method	
	20.4 Scattering of Light	04	Demonstration method	
	20.5 Nature of Light	05	Discussion method	
Unit 21 NUCLEAR PHYSICS	**21.1 Discovery of Nucleus**	01	Storytelling method	
	21.2 Nuclear Representations	02	Lecture method	
	21.3 Isotopes and Radioisotopes	03	Discussion method	
	21.4 Radioactivity	04	Lecture method	
	21.5 Nuclear Decay	05	Lecture method	
	21.6 Half-Life	06	Problem solving method	
	21.7 Ionizing Nuclear Radiations	07	Discussion method	
	21.8 Applications of Radiation	08	Case study method	
	21.9 Background Radiation	09	Discussion method	
	21.10 Nuclear Fission	10	Lecture with diagram method	
	21.11 Nuclear Fusion	11	Lecture with diagram method	
	21.12 Dark Matter	12	Discussion method	
	21.13 Falsibility	13	Discussion method	