

THE WISDOM GLOBAL SCHOOL

SYLLABUS BIFURCATION

GRADE 11

SUBJECT:- PHYSICS

NAME OF BOOK: S.L ARORA/NCERT

YEAR 2024-25

NAME OF THE TEACHER:- MR. SUMIT KUMAR PANDEY

S.NO	BOOK NAME	MONTH	CHAPTER NUMBER	CHAPTER NAME	SUB-TOPICS	NO. OF DAYS REQUIRED	ACTIVITY	MATERIAL REQUIRED (IF ANY)	ANIMATED VIDEO LINK	CHARTS		
1	S.L.ARORA	APRIL	1	Units and Measurements	Need for measurement & Units of measurement	1	To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.		https://video.wixstatic.com/video/f29914_8b06f2dfeaa5421aaeb0a3b8e0dff34/720p/mp4/file.mp4			
					systems of units; SI units, fundamental and derived units	2	To determine mass of a given body using a metre scale by principle of moments.					
					Dimensions of physical quantities	3						
					dimensional analysis and its applications	2						
					Quick revision and test	2			https://video.wixstatic.com/video/f29914_7c7715dd1c5e41f2b62c213990cd4b82/720p/mp4/file.mp4			
							Frame of reference	1				
							Motion in a straight line,	1				
							Elementary concepts of differentiation and integration for describing motion,	4				
							To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume.	1				

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2	S.L.ARORA	MAY	2	Motion in a Straight Line	To measure diameter of a given wire and thickness of a given sheet using screw gauge.	1				
					To determine volume of an irregular lamina using screw gauge.	1				
					Elementary concepts of differentiation and integration for describing motion,	2				
					uniform and nonuniform motion, and instantaneous velocity,	2				
					uniformly accelerated motion	2				
					velocity - time and position-time graphs	2	To plot a graph for a given set of data, with proper choice of scales and error bars.			
					Relations for uniformly accelerated motion (graphical treatment).	2				
					Quick revision and test	2				
			3	Motion in a Plane	Scalar and vector quantities	1			https://video.wixstatic.com/video/f29914_1cc2af6e44164a0798a07c59c5f6a541/720p/mp4/file.mp4	
					position and displacement vectors	1				
					general vectors and their notations	1				
equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors,	2									
Unit vector; resolution of a vector in a plane, rectangular components,	2									

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			5	Motion in a Plane	Scalar and Vector product of vectors.	4				
					To determine the radius of curvature of a given spherical surface by a spherometer.	1				
					To determine the mass of two different objects using a beam balance.	1				
3		JUNE			Motion in a plane, cases of uniform velocity and uniform acceleration	2				
					projectile motion,	3	To study the variation in range of a projectile with angle of projection.			
					uniform circular motion	2				
4					Quick revision and test	2				

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5	S.L.ARORA	JULY	4	Laws of Motion	Intuitive concept of force,	1			https://video.wixstatic.com/video/f29914_67c46c5f295c4ce4b74841683810c294/720p/mp4/file.mp4	
					Inertia,	2				
					Newton's first law of motion	2				
					momentum	2				
					Newton's second law of motion	2				
					Impulse	2				
					Newton's third law of motion	2				
					Law of conservation of linear momentum and its applications	2				
					Equilibrium of concurrent forces	4				
					To find the weight of a given body using the parallelogram law of vectors.	1				
					Using a simple pendulum, plot its L-T ² graph and use it to find the effective length of second's pendulum.	1				
					Static and kinetic friction	1				
					laws of friction	1				
					rolling friction	1	To measure the force of limiting friction for rolling of a roller on a horizontal plane.			
lubrication	1									
Dynamics of uniform circular motion	2			YES						
Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).	2									
Quick revision and test	3									

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6		AUGUST	5	Work, Energy and Power	Work done by a constant force and a variable force	2			https://video.wixstatic.com/video/f29914_7ae96ca719224b0fb3f6961c0026c27a/720p/mp4/file.mp4	
					kinetic energy	2				
					workenergy theorem,	2	To study the conservation of energy of a ball rolling down on an inclined plane (using a double inclined plane).			
					1. To determine Young's modulus of elasticity of the material of a given wire.	1				
					1. To find the force constant of a helical spring by plotting a graph between load and extension.	1				
7	S.L.ARORA	SEPTEMBER			power & Notion of potential energy,	1	To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.			
					potential energy of a spring	2				
					conservative forces: non-conservative forces	1				
					motion in a vertical circle	2				
MID TERM ASSESSMENT										
					elastic and inelastic collisions in one and two dimensions.	2				
					Centre of mass of a two-particle system	2			https://video.wixstatic.com/video/f29914_86b96c270be246afb68c583ffa5854c1/720p/mp4/file.mp4	

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8	S.L.ARORA	OCTOBER	6	System of Particles and Rotational Motion	momentum conservation and Centre of mass motion	2				
					Centre of mass of a rigid body	1				
					centre of mass of a uniform rod.	1				YES
					Moment of a force, torque	1				
					angular momentum	1				
					law of conservation of angular momentum and its applications.	1				
					Equilibrium of rigid bodies	2				
					rigid body rotation and equations of rotational motion	1				
					comparison of linear and rotational motions.	1				
					Moment of inertia	1				
					radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).	1				
			Quick revision and test	2						
			7	Gravitation	Kepler's laws of planetary motion	1				
					universal law of gravitation	1				
1. To determine the surface tension of water by capillary rise method.										
Acceleration due to gravity and its variation with altitude and depth	1					https://video.wixstatic.com/video/f29914_9d2c1ddd66024cc183c8513bab5b07c5/720p/mp4/file.mp4				
Gravitational potential energy and gravitational potential, escape speed	1									
orbital velocity of a satellite	1									
Quick revision and test	2									

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9	S.L.ARORA	NOVEMBER	8	Mechanical Properties of Solids	Elasticity	1			https://video.wixstatic.com/video/f29914_d5c0ffc0c4c744d9b897acf43d042185/720p/mp4/file.mp4	
					Stress-strain relationship	2	To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle.			
					Hooke's law	1				
					Young's modulus, bulk modulus	1				
					shear modulus of rigidity	1				
					Poisson's ratio; elastic energy.	2				
					Quick revision and test	2				
			9	Mechanical Properties of Fluids	Pressure due to a fluid column	1			https://video.wixstatic.com/video/f29914_dc92837e28394f3d81508d22579ef652/720p/mp4/file.mp4	
					Pascal's law and its applications (hydraulic lift and hydraulic brakes),	1			YES	
					effect of gravity on fluid pressure.	2				
					Viscosity	1				
					Stokes' law, terminal velocity	2				
					streamline and turbulent flow, critical velocity,	1				
Bernoulli's theorem and its simple applications	1	To observe the decrease in pressure with increase in velocity of a fluid.		YES						
Surface energy and surface tension	1									

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10	S.L.ARORA	DECEMBER			angle of contact, excess of pressure across a curved surface	2				
					application of surface tension ideas to drops, bubbles and capillary rise	2	To study the effect of detergent on surface tension of water by observing capillary rise.			
			10	Thermal Properties of Matter	Heat, temperature,	1			https://video.wixstatic.com/video/f29914_6098815036b6467287a2d67ee102221c/720p/mp4/file.mp4	
					thermal expansion; thermal expansion of solids, liquids and gases	1	To observe and explain the effect of heating on a bi-metallic strip.			
					Anomalous expansion of water	1	To note the change in level of liquid in a container on heating and interpret the observations.		YES	
					specific heat capacity; Cp, Cv	2				
					calorimetry;	1			YES	
					change of state - latent heat capacity.	1	To observe change of state and plot a cooling curve for molten wax.			
					Heat transfer-conduction, convection and radiation	2			YES	
					thermal conductivity,	1				
					qualitative ideas of Blackbody radiation	1				
					Wein's displacement Law	1				
Stefan's law.	1									

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					Thermal equilibrium and definition of temperature, zeroth law of thermodynamics	1			https://video.wixstatic.com/video/f29914_6098815036b6467287a2d67ee102221c/720p/mp4/file.mp4	
11	S.L.ARORA	JANUARY	11	Thermodynamics	heat, work and internal energy.	1				
					First law of thermodynamics,	1				
					Second law of thermodynamics	1				
					gaseous state of matter	1				
					change of condition of gaseous state -isothermal, adiabatic, reversible, irreversible, and cyclic processes.	1	To study the factors affecting the rate of loss of heat of a liquid.			
			12	Kinetic Theory	Equation of state of a perfect gas,	1			https://video.wixstatic.com/video/f29914_8331ffe6c81241ae81199b64761b1878/720p/mp4/file.mp4	
					work done in compressing a gas	1				
					Kinetic theory of gases - assumptions,	1				
					concept of pressure.	1				
					Kinetic interpretation of temperature; rms speed of gas molecules;	1				
			degrees of freedom, law of equipartition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.	1						

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12	S.L.ARORA	FEBRUARY	13	Oscillations	Periodic motion - time period, frequency,	1			https://video.wixstatic.com/video/f29914_5a6e6c07d7424627942e7ec1b1fec23c/720p/mp4/file.mp4	
					displacement as a function of time, periodic functions and their applications.	1				
					Simple harmonic motion (S.H.M) and its equations of motion; phase	1				
					oscillations of a loaded spring-restoring force and force constant	1			YES	
					energy in S.H.M. Kinetic and potential energies;	1				
					simple pendulum derivation of expression for its time period.	1				
			14	Waves	Wave motion: Transverse and longitudinal waves	1			https://video.wixstatic.com/video/f29914_1974d3933bd3418f8dab2a61ad79193d/720p/mp4/file.mp4	YES
					speed of travelling wave	2				
					displacement relation for a progressive wave,	2				
					principle of superposition of waves	2				
					reflection of waves	2				
standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.	2									
Revision	10									

ANNUAL ASSESSMENT