

BUDHA DAL PUBLIC SCHOOL,PATIALA

LESSON PLAN

CLASS: IX

SUBJECT: Physics

Month & Working Days	Theme/ Sub-theme	Learning Objectives		Activities & Resources	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	Behavioural (Application based)			
APRIL	Chapter:- Motion (PHYSICS) Distance, displacement, speed, velocity, acceleration, uniform and non uniform motion, elementary idea of circular motion, distance-time graph and velocity -time graph	Student must able to <ul style="list-style-type: none"> Understand the difference between displacement and distance. Understand the uniform and non-uniform motion. To represent graphically motion of any object. Find the relation $v = u + at$, $s = ut + \frac{1}{2} at^2$ and $v^2 = u^2 + 2as$. To understand the difference between 	<ul style="list-style-type: none"> To understand distance and displacement can be same in some situations and different in some situations. Calculate the average walking or running by evaluating the distance and time. Identify the nature or kind of motion of own or anybody. To observe trend of motion by the help of 	<ul style="list-style-type: none"> Measure the time it takes you to walk from your house to bus stop or the school. If you consider that your average walking speed is 4km/h estimate the distance if the bus stops or school from your school. Calculation should be in CGS system of unit and also plot nature of motion of graph. Take a meter scale and a long rope. Walk from one corner of a basket ballcourt to its opposite corner along its sides. Measure the distance covered by you and magnitude of the displacement. What difference would you notice between the two in 	<ul style="list-style-type: none"> They have learned the concept of various terms related to motion such as distance, displacement, speed, velocity and difference between them. They have learned the concept and examples of the uniform and non-uniform motion. They have learned to represent motion by using graph. They have 	<ul style="list-style-type: none"> Measure the time it takes you to walk from your house to bus stop or the school. If you consider that your average walking speed is 4km/h estimate the distance if the bus stops or school from your school. Calculation should be in CGS system of unit and also plot nature of motion of graph. <ul style="list-style-type: none"> Unit test Class Test

		<p>velocity and speed.</p> <ul style="list-style-type: none"> To understand the concept of uniform circular motion To understand the concept of uniformly accelerated motion Distinguish the average velocity and average speed and their calculation. Understand the concept of instantaneous velocity and acceleration. 	<p>graph.</p> <ul style="list-style-type: none"> Understand the reading of speedometer and odometer used in vehicle. 	<p>this case?</p> <ul style="list-style-type: none"> An electron moving with a velocity of 5×10^4 m/s enters into a uniform electric field and acquires a uniform acceleration of 10^4 m/s^2 in the direction of its initial motion. (i) Calculate the time in which the electron would acquire a velocity double of its initial velocity. (ii) How much distance the electron would cover in this time? Observation of instantaneous speed from speedometer and distance from odometer. Identify the motion of type. 	<p>learned to find the relation $v = u + at$, $s = ut + \frac{1}{2} at^2$ And $v^2 = u^2 + 2as$.</p> <ul style="list-style-type: none"> They have learned the term acceleration. They have learned the concept of uniform circular motion and its application in daily life. They have learned use of term average speed and average velocity while moving of any object. 	<p>Numerical problems of related content</p>
JULY	Chapter:- force and laws of motions force (balanced and unbalanced force) and motion,	<ul style="list-style-type: none"> Understand about types of forces i.e. balanced and unbalanced forces. 	<ul style="list-style-type: none"> To understand that mass and inertia are related. Apply the inertia of rest and motion and direction to different situation 	<ul style="list-style-type: none"> To study the roll of friction take two different balls one with smooth surface and other of rough. Using inclined plane. To just verify the concept of Newton's third law. 	<ul style="list-style-type: none"> They have learned the concept of force and difference between balance and unbalanced forces. 	<ul style="list-style-type: none"> Assignment To study the roll of friction take two different balls one with smooth surface and other of rough. Using

	<p>Newton's laws and its applications, inertia, momentum, Impulse, law of conservation of linear momentum.</p>	<ul style="list-style-type: none"> • Understand the concept of force. • Find the relation $f=ma$. • Understand the concept of inertia and its type. • Understand the keys of Newton's laws. • Formulate the Newton's second law of motion. • Understand the concept of momentum and impulse and their applications. • To understand application of all the three laws in our daily life. • Understand the concept and types of collision. 	<p>like when a person standing in a bus falls backward when bus is start moving suddenly.</p> <ul style="list-style-type: none"> • Use of balanced and unbalanced force in daily life. • Apply the concept and applications of Newton's second laws in daily actions like why a fielder pulls his hand backward; while catching a cricket ball? • To study motion of object in terms of momentum. • To understand that there is a reaction to every action. 		<ul style="list-style-type: none"> • They have learned the relation $f=ma$. • They have learned the concept of inertia and its type. • They have learned the keys of Newton's laws and their applications. • They have learned the concept of momentum and impulse and their use in daily life. • They have learned the concept and types of collision. • They have learned the derivation of the relation between the KE and Momentum of body • They have 	<p>inclined plane.</p> <ul style="list-style-type: none"> • Numerical problems of related content
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		<ul style="list-style-type: none">• Derivation of law of conservation of linear momentum and its application.			<p>learned the application of inertia of rest and motion in day to day life</p> <ul style="list-style-type: none">• They have learned the application and concept of Newton's laws in daily actions.• They have learned the to calculate the force and momentum of object on the basis of Newton's laws.• They have learned to calculate the mass, velocity after and before the collision. And calculate the recoil velocity of gun.	
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<p>AUGUST & SEPTEMBER</p>	<p>Chapter:- gravitation</p> <p>Newton's universal law of gravitation, free fall, acceleration due to gravity, mass, weight, pressure, thrust,</p>	<ul style="list-style-type: none"> • Understand the concept of Newton's universal law of gravitation. • Understand the concept of free fall and acceleration due to gravity. • Understand the meaning and concept of mass and weight. • Differentiate between mass and weight. • Differentiate between the acceleration due to gravity and universal gravitation constant. • Understand the concept of pressure and thrust. • Differentiate between pressure and 	<ul style="list-style-type: none"> • To understand how and why planets revolve around sun in different orbits. • Apply the concept of free fall during the rain fall or any object fall from certain height • Understand that weight changes with place due to change in acceleration due to gravity. • Analyses and conclude the situation for applying pressure or thrust for example why is it difficult to hold a school bag having a strap made of a thin and strong string? 	<ul style="list-style-type: none"> • A sphere of mass 40kg is attracted by a second sphere of mass 15kg when their centres are 20 cm apart, with a force of 0.1 milligram weight. Calculate the value of gravitational constant. • A body of mass 1 kg is placed at a distance of 2m from another body of mass 10kg. At what distance from the body of 1 kg, another body of mass 5 kg be placed so that the net force of gravitation acting on the body of mass 1 kg is zero? • Gravitational force acts on all objects in proportion to their masses. Why then, a heavy object does not fall faster than a light object? 	<ul style="list-style-type: none"> • The concept of Newton's universal law of gravitation. • The concept of free fall and acceleration due to gravity. • The meaning and concept of mass and weight. • The Difference between mass and weight. • The Difference between the acceleration due to gravity and universal gravitation constant. • The concept of pressure and thrust. • The Difference between pressure and thrust. • To Apply the concept of free fall during the rain fall or any 	<ul style="list-style-type: none"> • To calculate the kinetic and potential energy in free fall. And also the average velocity. • Class test • Numerical problems of related content
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		thrust.			<p>object fall from certain height</p> <ul style="list-style-type: none"> To calculate the mass or weight of object at any instant using value of acceleration due to gravity. To Analyses and conclude the situation for applying pressure or thrust for example why is it difficult to hold a school bag having a strap made of a thin and strong string? 	
<p>November January</p>	<p>Chapter:- floatation</p> <p>density, relative density, buoyancy, Archimedes'</p>	<ul style="list-style-type: none"> Understand the meaning of density ,relative density and concept of buoyancy. Understand the 	<ul style="list-style-type: none"> Daily life application of density and relative density. Apply the concept of Archimedes' principle when the 	<p>The volume of a 500 g sealed packet is 350 cm³. Will the packet float or sink in water if the density of water is 1 g cm⁻³? What will be the mass of the water displaced by this packet?</p> <p>Lab Activitiy: -</p>	<p>Students have learned</p> <ul style="list-style-type: none"> To apply the concept of Archimedes' principle when swimming or floating. 	<p>Determine the weight of object using Archimedes' principal.</p> <p>Numerical problems of related content</p>

	principle , laws of floatation.	<p>meaning and analyses the Archimedes' principle.</p> <ul style="list-style-type: none"> • Understand and aware about the laws of floatation. 	<p>object will float or sink.</p> <ul style="list-style-type: none"> • Calculate the force requires floating of an object on the water surface using buoyancy. 	<ul style="list-style-type: none"> • Determine the weight of object using Archimedes' principal. • Determine the density of water. • Loss of weight in tap or salty water and effect on density. 	<ul style="list-style-type: none"> • Understand about the concept of density and relative density. • To apply use of density and relative density in daily life. • To apply laws of floatation in different situation. 	
December January	Chapter:- work and energy work and types of work, energy and types of energy, conservation of energy ,power.	<p>Student will be able to</p> <ul style="list-style-type: none"> • Define the concept of work and its type. • Understand the concept of energy and its type. • Identify different forms of energy in our surrounding. • Formula 	<ul style="list-style-type: none"> • Apply the concept of work in daily actions like person carries a load on his head. • Analyze the different forms and conversion of energy like chemical into electrical. • Calculate the power consumption of any mechanical body. 	Lab Activity: - <ul style="list-style-type: none"> • Showing them work done against frictional force inclined plane. • Showing work done against gravitational force. • Identify different types of work in various situation. 	<p>Students have learned</p> <ul style="list-style-type: none"> • The concept of work and its type. • The concept of energy and its type. • The meaning of different forms of energy and its uses 	<p>Showing them work done against frictional force inclined plane. Numerical problems of related content.</p>

		<p>derivation of kinetic energy and potential energy.</p> <ul style="list-style-type: none"> • Understand and derive law of conservation of energy. • Differentiate between energy and work and their interconversion. • Understand the concept of power and average power 	<ul style="list-style-type: none"> • Understands the concept that to carry work energy is always needed. 		<ul style="list-style-type: none"> • The concept of conservation of energy. • To derive conservation of energy mathematically. • To derive the expression for potential and kinetic energy. • To differentiate between energy and work. • The concept of power and average power. • To apply the concept of work in daily actions like person carries a load on his head. • To analyze the situation to differentiate which type of work being preceded in some situation like pulling or 	
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					<p>pushing a roller.</p> <ul style="list-style-type: none"> • The different forms and conversion of energy like chemical into electrical. • To calculate the power consumption in different situation. 	
<p>January-18 February-06</p>	<p>Chapter:- Sound (PHYSICS) sounds and wave & types of wave, terms related with sound like frequency, wavelength etc, reflection of sound, echo, Reverberation, sonic boom, ultrasound and its applications, SONAR, Different characteristics of sound wave. Revision</p>	<p>Students will be able to learn</p> <ul style="list-style-type: none"> • Concept of sound and its propagation. • The meaning and concept of frequency, wavelength, time period. • Concept of loudness and pitch. • The meaning of intensity of sound. • The Difference 	<ul style="list-style-type: none"> • Apply the concept of sound propagation in loudspeaker. • Use of the concept of loudness and pitch during public use of loudspeaker. • Analyze the concept of echo i.e. megaphone, stethoscope etc. 	<ul style="list-style-type: none"> • Verify the law of reflection of sound. • Calculation of pitch, loudness wavelength numerical problems. • Identify types of waves in different situation. 	<p>They have learned</p> <ul style="list-style-type: none"> • The Concept of sound and its propagation. • Different types of waves such as longitudinal and transverse. • The meaning and concept of frequency, wavelength, time period. • The Concept of loudness and pitch. • The Difference 	<ul style="list-style-type: none"> • Annual exam

		<p>between intensity of sound and loudness.</p> <ul style="list-style-type: none">• Meaning of echo and reflection of sound.• Concept of the reverberation of sound and its application.• Meaning of sonic boom and ultrasound and its application.• Concept of the SONAR.			<p>between intensity of sound and loudness.</p> <ul style="list-style-type: none">• The Meaning of echo and reflection of sound.• The Concept of the reverberation of sound and its application.• Meaning of sonic boom and ultrasound and its application.• Concept of the SONAR.• Apply the concept of sound propagation in loudspeaker.• Analyze the concept of loudness and pitch during public use of loudspeaker.• Analyze the concept of intensity to know	
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					<p>the frequency, wavelength etc.</p> <p>Analyze the concept of echo i.e. megaphone, stethoscope etc.</p>	
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