



THE VITS SCHOOL

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Curriculum Planning for Class IX (2020-21)

Physics

Month/ Days	No. of working days	Lesson no. and name	Activity/ Practical
June	20	Chapter 8 : Motion NCERT Exercise + Numericals + Exemplar Questions	<p>1. Have you ever experienced that the train in which you are sitting appears to move while it is at rest? • Discuss and share your experience.</p> <p>2. Automobiles are fitted with a device that shows the distance travelled. Such a device is known as an odometer. A car is driven from Bhubaneswar to New Delhi. The difference between the final reading and the initial reading of the odometer is 1850 km. • Find the magnitude of the displacement between Bhubaneswar and New Delhi by using the Road Map of India.</p>
July	27	Chapter 8 : Motion NCERT Exercise + Numericals + Exemplar Questions	<p>1. The data regarding the motion of two different objects A and B are given in Table. Examine them carefully and state whether the motion of the objects is uniform or non-uniform.</p> <p>2. Measure the time it takes you to walk from your house to your bus stop or the school. If you consider that your average walking speed is 4 km h⁻¹, estimate the</p>

			<p>distance of the bus stop or school from your house.</p> <p>3. At a time when it is cloudy, there may be frequent thunder and lightning. The sound of thunder takes some time to reach you after you see the lightning. • Can you answer why this happens? Measure this time interval using a digital wrist watch or a stop watch.</p> <p>4. In your everyday life you come across a range of motions in which (a) acceleration is in the direction of motion, (b) acceleration is against the direction of motion, (c) acceleration is uniform, (d) acceleration is non-uniform. • Can you identify one example each of the above type of motion?</p> <p>5. Feroz and his sister Sania go to school on their bicycles. Both of them start at the same time from their home but take different times to reach the school although they follow the same route. Table 8.5 shows the distance travelled by them in different times. Plot the distance-time graph for their motions on the same scale and interpret</p>
August	22	<p>Chapter 9 : Force and Laws of Motion</p> <p>NCERT Exercise + Numericals + Exemplar Questions</p>	<p>1. Set a five-rupee coin on a stiff card covering an empty glass tumbler standing on a table as shown in Fig. 9.7. • Give the card a sharp horizontal flick with a finger. If we do it fast then the card shoots away, allowing the coin to fall vertically into the glass tumbler due to its inertia. •</p>

			<p>The inertia of the coin tries to maintain its state of rest even when the card flows off.</p> <p>2. Place a water-filled tumbler on a tray. • Hold the tray and turn around as fast as you can. • We observe that the water spills. Why?</p>
September	25	<p>Chapter 9 : Force and Laws of Motion</p> <p>NCERT Exercise + Numericals + Exemplar Questions</p>	<p>3. Take a test tube of good quality glass material and put a small amount of water in it. Place a stop cork at the mouth of it. • Now suspend the test tube horizontally by two strings or wires as shown in Fig. 9.16. • Heat the test tube with a burner until water vaporises and the cork blows out. • Observe that the test tube recoils in the direction opposite to the direction</p> <p>4. Take a big rubber balloon and inflate it fully. Tie its neck using a thread. Also using adhesive tape, fix a straw on the surface of this balloon. • Pass a thread through the straw and hold one end of the thread in your hand or fix it on the wall. • Ask your friend to hold the other end of the thread or fix it on a wall at some distance. This arrangement is shown in Fig. 9.15. • Now remove the thread tied on the neck of balloon. Let the air escape from the mouth of the balloon. • Observe the direction in which the straw moves.</p>
October	23	<p>Chapter 10 : Gravitation</p> <p>NCERT Exercise + Numericals + Exemplar Questions</p>	<p>1. Take a piece of thread. • Tie a small stone at one end. Hold the other end of the thread and whirl it round, as shown in Fig. 10.1. • Note</p>

			<p>the motion of the stone. • Release the thread. • Again, note the direction of motion of the stone</p> <p>2. Take a stone. • Throw it upwards. • It reaches a certain height and then it starts falling down.</p> <p>3. Take a sheet of paper and a stone. Drop them simultaneously from the first floor of a building. Observe whether both of them reach the ground simultaneously. • We see that paper reaches the ground little later than the stone. This happens because of air resistance. The air offers resistance due to friction to the motion of the falling objects. The resistance offered by air to the paper is more than the resistance offered to the stone. If we do the experiment in a glass jar from which air has been sucked out, the paper and the stone would fall at the same rate</p>
November	20	Chapter 10 : Gravitation NCERT Exercise + Numericals + Exemplar Questions	<p>1. Take an empty plastic bottle. Close the mouth of the bottle with an airtight stopper. Put it in a bucket filled with water. You see that the bottle floats. • Push the bottle into the water. You feel an upward push. Try to push it further down. You will find it difficult to push deeper and deeper. This indicates that water exerts a force on the bottle in the upward direction. The upward force exerted by the water goes on increasing as the bottle is pushed deeper till it is completely immersed. • Now, release the bottle. It bounces back to</p>

			<p>the surface. • Does the force due to the gravitational attraction of the earth act on this bottle? If so, why doesn't the bottle stay immersed in water after it is released? How can you immerse the bottle in water?</p> <p>2. Take a beaker filled with water. • Take an iron nail and place it on the surface of the water. • Observe what happens.</p> <p>3. Take a beaker filled with water. • Take a piece of cork and an iron nail of equal mass. • Place them on the surface of water. • Observe what happens.</p>
December	20	Chapter 11 : Work and Energy NCERT Exercise + Numericals + Exemplar Questions	<p>1. Think of situations when the object is not displaced in spite of a force acting on it. • Also think of situations when an object gets displaced in the absence of a force acting on it. • List all the situations that you can think of for each. • Discuss with your friends whether work is done in these situations.</p> <p>2. Think of some situations from your daily life involving work. • List them. • Discuss with your friends whether work is being done in each situation. • Try to reason out your response. • If work is done, which is the force acting on the object? • What is the object on which the work is done? • What happens to the object on which work is done?</p>
January	23	Chapter 11 : Work and Energy	<p>1. Lift an object up. Work is done by the force exerted by you on the object. The</p>

NCERT Exercise +
Numericals + Exemplar
Questions

object moves upwards. The force you exerted is in the direction of displacement. However, there is the force of gravity acting on the object. • Which one of these forces is doing positive work? • Which one is doing negative work? • Give reasons.

2. A few sources of energy are listed above. There are many other sources of energy. List them. • Discuss in small groups how certain sources of energy are due to the Sun. • Are there sources of energy which are not due to the Sun?

3. Take a heavy ball. Drop it on a thick bed of sand. A wet bed of sand would be better. Drop the ball on the sand bed from height of about 25 cm. The ball creates a depression. • Repeat this activity from heights of 50 cm, 1m and 1.5 m. • Ensure that all the depressions are distinctly visible. • Mark the depressions to indicate the height from which the ball was dropped. • Compare their depths. • Which one of them is deepest? • Which one is shallowest? Why? • What has caused the ball to make a deeper dent? • Discuss and analyse.

4. Take a rubber band. • Hold it at one end and pull from the other. The band stretches. • Release the band at one of the ends. • What happens? • The band will tend to regain its original

			length. Obviously the band had acquired energy in its stretched position. • How did it acquire energy when stretched?
February	24	Chapter 12 : Sound NCERT Exercise + Numericals + Exemplar Questions	<p>1. Take a tuning fork and set it vibrating by striking its prong on a rubber pad. Bring it near your ear. • Do you hear any sound? • Touch one of the prongs of the vibrating tuning fork with your finger and share your experience with your friends. • Now, suspend a table tennis ball or a small plastic ball by a thread from a support [Take a big needle and a thread, put a knot at one end of the thread, and then with the help of the needle pass the thread through the ball]. Touch the ball gently with the prong of a vibrating tuning fork (Fig. 12.1). • Observe what happens and discuss with your friends.</p> <p>2. Make a list of different types of musical instruments and discuss with your friends which part of the instrument vibrates to produce sound.</p>