



Srini Science Mind
Abdul Kalam Physical Science Group



NEW

9th class

PHYSICAL SCIENCE

LESSON PLAN with BYJU's Content



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LESSON PLAN

CLASS: 09

SUBJECT: PS

Name of the Teacher: M.Srinivasa Rao

Name of the School: SPSMH School, Gudivada

Name of the Lesson/Unit	Topic	No. of Periods Required	Timeline for teaching		Any specific information
			From	To	
LAWS OF MOTION (Chapter-8)	Introduction	1			
	Balanced and Unbalanced Forces	1			
	First Law of Motion and activities	2			
	Inertia and Mass	1			
	BYJU's Content Review	1			
	Second law of motion	1			
	Mathematical formulation of Second law of motion and examples	3			
	Third law of motion and activity	2			
	BYJU's Content Review	1			

Prior Concept/Skills:

1. Define the force of friction.
2. Why tie the luggage with a rope on the roof of buses?
3. What is acceleration and write its formula?
4. Express your experience when you are standing on the moving bus, suddenly the bus driver applies breaks?

Learning Outcomes:

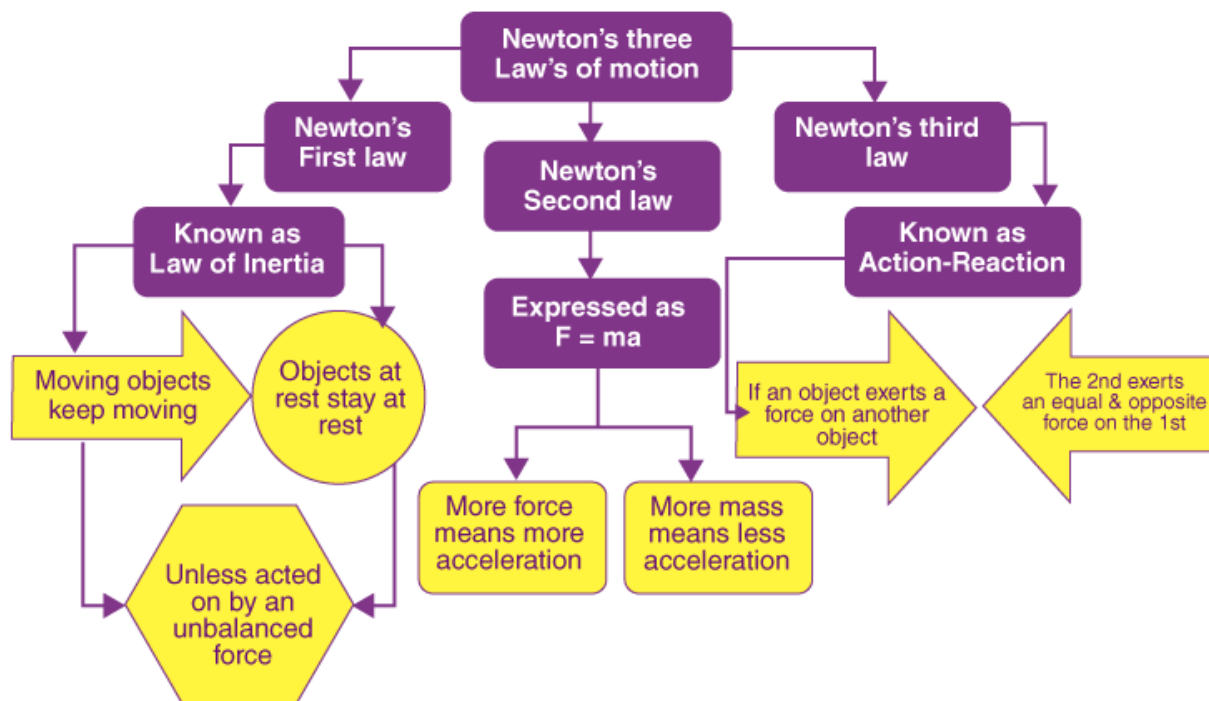
1. Describe scientific discoveries and inventions of Galileo Galilee and Newton
2. Explains processes of the effect of force on the state of motion of objects.
3. Plans and conducts investigation of "Do all the bodies have the same inertia"?
4. Relates processes with causes and effects of inertia of the objects.
5. Derives formulae, equations, and laws of mathematical expressions for Newton's second law of motion
6. Explains processes of action and reaction.
7. Draws conclusion of the effect of action and reaction on two different bodies.
8. Draws labelled diagrams of "To show the action and reaction forces acting on two different objects"
9. Applies scientific concepts in daily life and solving problems like uses safety belts in automobiles.
10. Calculates using the data given of Mass, Velocity, Linear momentum.
11. Uses scientific conventions, symbols and equations to represent various quantities and units of force, linear momentum.

No. of Periods

1
1
1
1
2
1
2
1
1
1
1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students are able to utilize Newton's laws of motion day-to-day life.
2. Students will understand the relationship between the law of conservation of momentum and Newton's third law of motion and apply it in everyday life
3. Students will be able to identify where the law of conservation of momentum occurs in their daily routines.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and explain the natural state of object 2. Discussion on effects of force on the objects 3. Explain and conduct activity on balanced and unbalanced forces.	1. Group discussion on natural state of the object. 2. Students collect the information on effects of force on the objects. 3. What happens when some children try to push a box on a rough floor?	1. Students give examples of objects change their state of motion. 2. Students gives the examples of The effect of force in own way. 3. Students will tell the difference between balanced and	1. Define the term force. 2. Which is the property of the object? 3. Give one example of an unbalanced force.

<p>4. Discussion and conduct activity of motion along inclined planes with different slopes and Motion from inclined surface to plane surface.</p> <p>5. Explain Newton's first law of Motion.</p> <p>6. Discussion and conduct activities on Newton's first law of motion.</p> <p>7. Explain the relation between Inertia and Mass of the object.</p> <p>8. Review of Byju's tab content</p> <p>9. Explain on the momentum of the object and Newton's second law of motion.</p> <p>10. Deduce the mathematical expression of Newton's second law of motion.</p> <p>11. Discussion on daily life examples of the second law of motion.</p> <p>12. Solved problems on the second law of motion.</p> <p>13. Explain and demonstration on Newton's third law of motion.</p> <p>14. Discussion and conduct an activity on third law of motion.</p> <p>15. Review of Byju's tab content</p>	<p>– Group discussion.</p> <p>4. Group discussion on the motion of the object on different surfaces.</p> <p>5. "Why is the first law of motion is also known as the law of inertia" – Group discussion</p> <p>6. Students arrange the apparatus in proper order</p> <p>7. Collect examples of inertia.</p> <p>8. Viewing the content in Byju's Tab</p> <p>9. Group discussion on relation between momentum and mass, velocity.</p> <p>10. Students use the physical quantities</p> <p>11. Collect the information on the utilization of the second law of motion in our daily life situations.</p> <p>12. Solved problems on the second law of motion.</p> <p>13. Students give examples of the third law of motion.</p> <p>14. Students conduct an experiment on show that third law of motion.</p> <p>15. Viewing the content in Byju's Tab</p>	<p>unbalanced forces.</p> <p>4. Students complete the homework.</p> <p>5. State first law of motion?</p> <p>6. Students will define Inertia.</p> <p>7. Students easily identify the less inertia object and high inertia object from given objects.</p> <p>8. Viewing the content in Byju's Tab.</p> <p>9. Students complete the homework.</p> <p>10. Students can write the mathematical expression of the second law of motion.</p> <p>11 Students give daily life examples of the second law of motion.</p> <p>12. Solved problems on the second law of motion.</p> <p>13. Students collect information on the third law of motion.</p> <p>14. Students identify the forces of action and reactions in a given situation.</p> <p>15. Viewing the content in Byju's Tab</p>	<p>4. State Galileo's law of inertia</p> <p>5. What is another name for Newton's first law of motion?</p> <p>6. Which law of motion defines the force?</p> <p>7. How many types of inertia? What are they?</p> <p>8. What is the S.I unit of linear momentum?</p> <p>9. State Newton's second law of motion.</p> <p>10. What would happen if a fielder stops the fast moving ball suddenly? Justify your answer.</p> <p>11. Name the principle on which a rocket works.</p> <p>12. State Newton's third law of motion and give examples</p>
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Check For Understanding Questions

1. Factual:

1. What did Galileo observe by placing two inclined planes facing each other and rolling down a marble ball from top end of one of them?
2. An athlete always runs some distance before taking a jump. Why?
3. What is the state of an object when no net force is acting on an object?

2. Open Ended/Critical Thinking:

1. Why is it dangerous to jump out of a moving bus?
2. Air bags are used in the cars for safety. Why?
3. Are we able to make the spring balances to show different readings by pulling them simultaneously in opposite direction? Why not?
4. Why do we not experience any leaning when a train takes a turn?
5. Discuss a horse continues to apply a force in order to move a cart with a constant speed

3. Student Practice Questions & Activities:

1. Why is it advised to tie any luggage kept on the roof of a bus with a rope?
2. When a bus makes a sharp turn at a high speed the passengers tend to get thrown to one side. Give reason.
3. State Newton's third law of motion.
4. A car and truck have same momentum. Whose velocity is more and why?

TLM's (Digital + Print)

1. Used prepared Quiz paper.
2. Utilized digital classroom.
3. Provide video links
QR codes,
DIKSHA App
4. YouTube video links
5. Byju's Tab
6. IFP

Assessment:

1. When a carpet is beaten with a stick, dust comes out of it, Explain.
2. An automobile vehicle has a mass of 1500 kg. What must be the force between the vehicle and road if the vehicle is to be stopped with a negative acceleration of 1.7 m s^{-2} ?
3. How much momentum will a dumb-bell of mass 10 kg transfer to the floor if it falls from a height of 80 cm? Take its downward acceleration to be 10 m s^{-2} .
4. According to the third law of motion when we push on an object, the object pushes back on us with an equal and opposite force. If the object is a massive truck parked along the roadside, it will probably not move. A student justifies this by answering that the two opposite and equal forces cancel each other. Comment on this logic and explain why the truck does not move.

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS