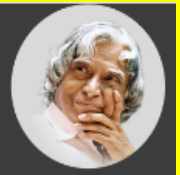
Srini Science Mind

Abdul Kalam Physical Science Group



NEW

8th class

PHYSICAL SCIENCE

MODEL LESSON PLAN

M.SRINIVASA RAO, SA(PS) AGKMHS GUDIVADA PH: 9848143855

MODEL LESSON PLAN

CLASS: 08 **SUBJECT: PS** **Name of the Teacher: M.SRINIVASA RAO** **Name of the School: A.G.K.M.H.School, Gudivada**

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
FRICTION (Chapter-2)	Force of friction	2	xx/xx/xxxx	xx/xx/xxxx	
	Factors affecting friction	2	xx/xx/xxxx	xx/xx/xxxx	
	Friction: A Necessary Evil	2	xx/xx/xxxx	xx/xx/xxxx	
	Increasing and Reducing Friction	2	xx/xx/xxxx	xx/xx/xxxx	
	Wheels Reduce Friction	2	xx/xx/xxxx	xx/xx/xxxx	
	Fluid Friction	2	xx/xx/xxxx	xx/xx/xxxx	

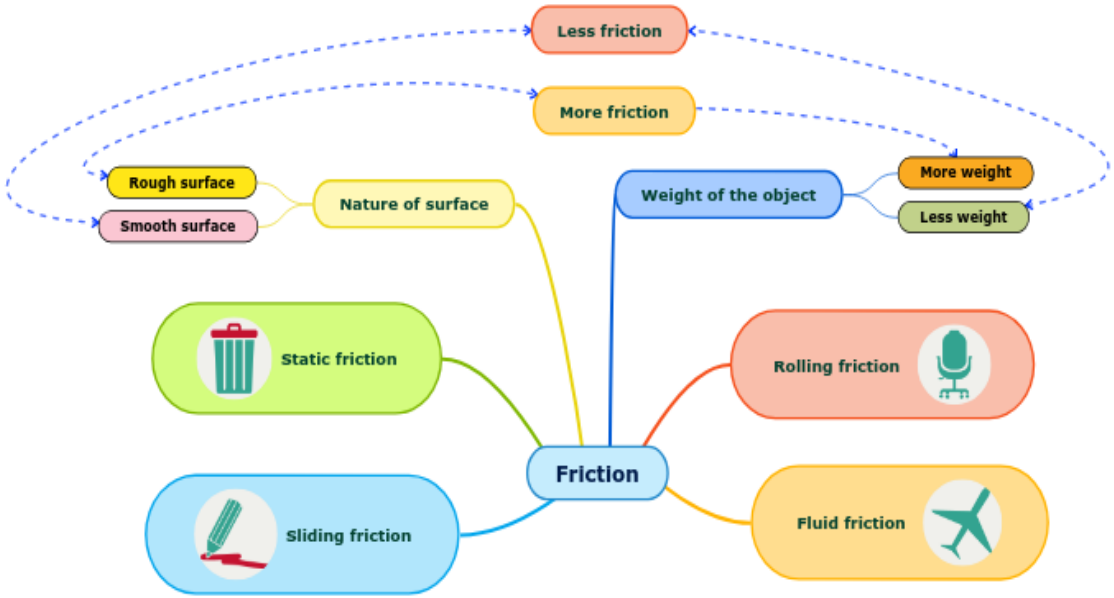
Prior Concept/Skills:

1. Why do we fall when we step on a banana peel?
2. Why do kabaddi players rub their hands with soil?
3. Give examples of contact forces.
4. Which force always acts on all the moving objects and its direction is always opposite to the direction of motion?

Learning Outcomes:	**No. of Periods**
1. Conducts simple investigation to seek answers to queries “Is the friction the same for all the surfaces?”	1
2. Explains processes and phenomenon of factors affecting friction.	1
3. Makes efforts to protect environment of using of lubricants.	1
4. Applies learning of scientific concepts in day-to-day life of increasing or reducing friction.	1
5. Conducts simple investigations to seek answers to queries of can we reduce friction to zero by polishing surfaces or using large amount of lubricants.	1
6. Relates processes with causes of increasing and reducing friction.	1
7. Differentiates frictions based on characteristics.	1
8. Draws the flow charts of types of frictions.	1
9. Exhibits creativity in designing, planning, making use of lubricants.	1
10. Constructs models using materials from surroundings and explains their working of ball bearings in machines.	1
11. Explains processes of making of special shape objects	1
12. Applies learning of scientific concepts in the day-to-day life of streamlined objects.	1
13. Relates process and phenomenon with causes fluids exert the force of friction on objects in motion through them.	

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students utilize the concept of friction in the driving of a vehicle on a surface, applying breaks to stop a moving vehicle.
2. Students are able to utilize the friction concept to face their daily life situations.
3. Students understand the working of machines based on ball bearings.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion on 'Why is it difficult to walk on a smooth and wet floor'? with suitable examples	1. Collet the information of force of Friction.	1. Students express walking on different surfaces	1. Define the force of friction?
2. Explain and conduct an activity of friction opposes relative motion	2. Students conduct activities and find out friction opposes relative motion	2. What is the role of friction in daily life?	2. Friction opposes the relative motion

between the surfaces of the book and the table	between the surfaces of the book and the table.		between two surfaces in contact.
3. Discussion and explanation of factors affecting Friction.		3. The student gives examples of each case where friction is affecting.	
4. Explain and conduct an activity of friction depends on the nature of the surface.	3. Students collect the spring balance, polythene and brick.	4. Students measure the reading on the spring balance.	3. Spring balance is a device used for measuring the force acting on an object.
5. Explain and conduct an activity of friction depends on the nature of the surface.	4. Conduct activity and describe the procedure of the activity.	5. Students complete the homework	
6. Conduct an activity to prove that sliding friction is smaller than static friction.		6. Comparing sliding friction with static friction.	4. Differentiate between static friction and sliding friction.
7. Discussion and give illustrations on " Friction is a necessary evil"	5. Collect information of friction is both a friend and a foe.	7. Students give a few examples of friction being a necessary evil.	
8. Explain Increasing and Reducing Friction.	6. Students collect the sports shoes and observe the role of sole in decreasing the friction.		5. Explain increasing and reducing friction with examples.
9. Conduct an activity in the rolling friction is smaller than the sliding friction.	7. Arrange the experimental setup activity.	8. Students give reason about why rolling friction produces the least friction.	6. Write a few examples where sliding friction is replaced by rolling friction.
10. Discussion and explanation of ball bearings reduce friction.	8. Imagine that friction suddenly vanishes. How would life be affected? List ten such situations.	9. Students draw a rough diagram of the ball bearing.	
11. Explain fluids friction with examples.	9. Students do an activity with water in a container and observe the drag in fluids.	10. Students complete the homework.	7. On what factors does the fluid friction depends?

Check For Understanding Questions	TLM's (Digital + Print)
1. Factual: 1. Why it is difficult to move on a wet marble surface? 2. Can we eliminate friction completely? 3. Why sliding friction is less than static friction. 4. Why is the friction caused? **2. Open Ended/Critical Thinking:** 1. Why our hands become warmer when we run them? 2. Which is easier to hold in hand an earthen pot or glass tumbler. Why? Discuss 3. If there was no friction, what would happen to a moving object? **3. Student Practice Questions & Activities:** 1. Explain why sliding friction is less than static friction. 2. Give examples to show that friction is both a friend and a foe. 3. Explain why objects moving in fluids must have special shapes. 4. Why is 'friction: a necessary evil'? Explain.	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, DIKSHA app

Assessment:

1. How do lubricants help to reduce friction?
2. Give some examples that friction is necessary for everyday activities.
3. Explain why objects moving in fluids must have special shapes.
4. Suggest some methods to increase friction.

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS