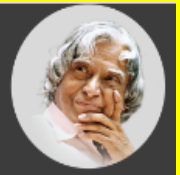
Srini Science Mind

Abdul Kalam Physical Science Group



NEW

9th class

PHYSICAL SCIENCE

MODEL LESSON PLAN

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MODEL LESSON PLAN

CLASS: 09 **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	
Floating Bodies (Chapter – 9)	Have a little fun	1	xx/xx/xxxx	xx/xx/xxxx	
	Comparing density-relative density	2	xx/xx/xxxx	xx/xx/xxxx	
	Relative density of liquids	2	xx/xx/xxxx	xx/xx/xxxx	
	Making of lactometer	2	xx/xx/xxxx	xx/xx/xxxx	
	When do objects float on water?	1	xx/xx/xxxx	xx/xx/xxxx	
	Upward force in liquids	1	xx/xx/xxxx	xx/xx/xxxx	
	Pressure of air	2	xx/xx/xxxx	xx/xx/xxxx	
	Measuring the force of buoyancy	1	xx/xx/xxxx	xx/xx/xxxx	
	Archimede's and Pascal’s principles	2	xx/xx/xxxx	xx/xx/xxxx	

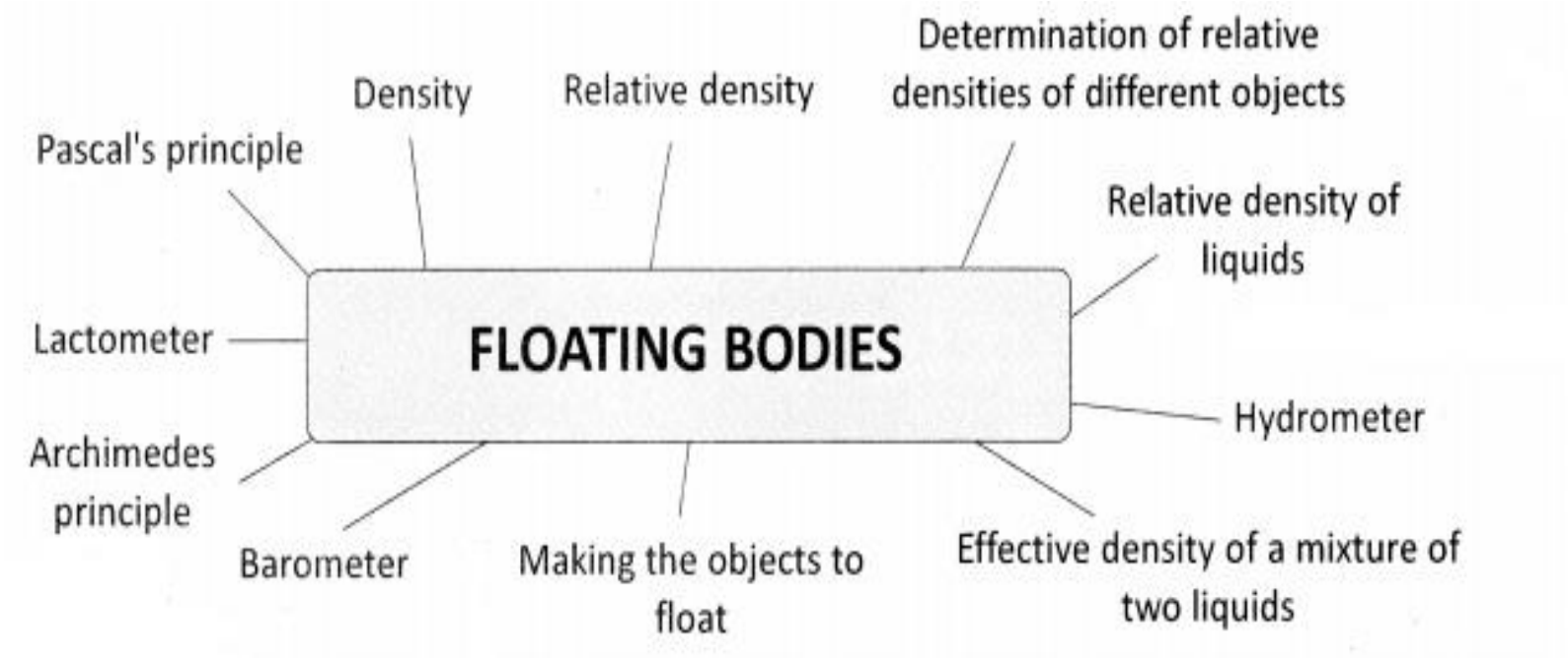
Prior Concept/Skills:

1. Define Pressure.
2. What is the formula for density?
3. Which device is used to measure atmospheric pressure?

Learning Outcomes:	**No. of Periods**
1. Conducts investigations of How do objects float/ sink when placed on the surface of a liquid?	2
2. Measures relative density using appropriate apparatus, instruments, and devices, such as, weight and mass of an object using spring balance.	2
3. Classifies materials as objects float/ sink in the water based on density.	1
4. Explains processes of finding the relative density of different objects.	2
5. Designs models using eco-friendly resources of lactometer.	2
6. Measures of the force of buoyancy using appreciate devices.	
7. Describes scientific discoveries and inventions of Archimedes principle.	1
8. Communicates the findings and conclusions effectively of Archimedes principle.	
9. Applies scientific concepts in daily life and solving problems of Pascal’s principle.	1
10. Relates processes and phenomena with causes and effects of working of hydraulic machine.	1
11. Draws labelled diagrams of bramah press and barometer.	1
12. Applies scientific concepts in daily life and solving problems of hydraulic jack.	1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students make objects that float in water based on relative density.
2. Students experimentally determine atmospheric pressure based on the fluids pressure.
3. Students apply Archimedes' principle and Pascal's principle to various situations in real life.

Explicit Teaching/Teacher Modelling (I Do)	**Group Work (We Do)**	**Independent Work (You Do)**	**Notes for:**
1.Discussion and conduct experiment on sink and float objects in water. 2. Explain and conduct activity on density of the objects with help of a glass tumbler, water, marble piece and wooden piece.	1. Students conduct this activity. 2. Why does the wooden block float on water even though it is heavier than a marble?- Group discussion.	1. students observe which objects sink or float on water. 2. Students compare heavy and light objects.	1. Which objects sink in water? 2. what is the S.I unit of density?

3. Discussion and conduct an activity on comparing density and relative density (Test tubes, water, oil, wood and rubber)	3. Students conduct activities and making questions.	3. Students complete the homework.	3. What is the significance of relative density?
4. Explain and conduct lab activity on finding the relative density of different objects.	4. Students describe the process of finding the relative density of different objects.	4. Students write the definitions of density and relative density.	4. What happens to density when volume increases?
5. Discussion and conduct lab activity on finding the relative density of milk, groundnut oil and kerosene.	5. Students collect information on the relative density of objects.	5. Students measure the weights of the bottle and liquid	5. Which liquid has greater relative density. Why?
6. Explain the making of lactometer and solved the problems.	6. Students making of lactometers in their own way.	6. Students write the use of lactometers.	6. Which principle is used in Lactometer?
7. Discussion and conduct activity on "When do objects float on water?	7. Students identify the objects whether float or sink in water.	7. Students give a reason, Why do some objects float on water while others sink down?	7. Does the shape of an object affect its ability to float?
8. Explain and demonstrate activity on "Is the weight of an object and weight of water displaced by it equal?	8. Students measure the weights of the substance and displaced water.	8. Students complete the homework.	
9. Explain the making Aluminium to float on water.	9. Why does aluminum float on water? - Group discussion.	9. Students conduct activities.	8. Why does the metal bowl displace larger amount of water than a metal piece?
10. Discussion and conduct an activity on the upward force of liquids and air pressure.	10. Students collect information on the pressure of air.	10. Students write the definition of static pressure of the water.	9. What is the relation between gravitational force and upward force?
11. Explain and demonstrate the measuring atmospheric pressure.	11. Students describe the measuring of atmospheric pressure.	11.Students draw the diagram of barometer.	10. What is the SI unit of atmospheric pressure?
12. Explain the pressure at a depth 'h' in a liquid and pressure difference at different levels of depth in fluids.	12. Students derive the formulae.	12. Students complete the homework.	11. one atm = _____
13. Discussion and explain the measuring the force of buoyancy.	13. Students measure the force of buoyancy.	13. Students write the definitions of buoyancy.	12. What is the principal cause of action of buoyant

14. Explain and demonstrate the measuring the weight of the water displaced by the immersed stone. 15. Explain Archimedes' principle and Pascal's principle, its applications.	14. Students describe the activity and record the observations. 15. Students collect information on the applications of Pascal's principle.	14. Students read the biography of Archimedes 15. Students write the principles of Archimedes and Pascal.	force? 13. Why is stone weight less in water? 14. What are the applications of Pascal's law in daily life?

Check For Understanding Questions	**TLM's (Digital + Print)**
1. Factual: 1. Do objects that have a relative density less than 1 sink in water or float on it? 2. Why does the stone lose weight when it is immersed? 3. An iron nail sinks in water, while a large ship floats on the surface of the water. Why? **2. Open-End/Critical Thinking:** 1. Why is it easier for you to float in salt water than in fresh water? 2. What would happen if the Toricelli experiment is done on the moon? 3. What happens if atmospheric pressure is too high? **3. Student Practice Questions & Activities:** 1. Find the relative density of wood. Explain the process. 2. Why do some objects float on the water? And some sink? 3. Explain density and relative density and write their formulae. 4. State and prove Archimedes principle of buoyancy.	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, DIKSHA App 4. YouTube video links
Assessment: 1. How can you find the relative density of a liquid? 2. A solid sphere has a radius of 2 cm and a mass of 0.05 kg. What is the relative density of the sphere? 3. State Pascal's law and explain it with an example. 4. Draw the diagram of a mercury barometer.	

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS