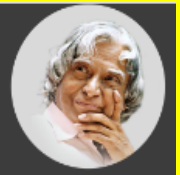
Srini Science Mind

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	
IS MATTER PURE? (CH-3)	Is full cream pure? And What is a mixture?	1	xx/xx/xxxx	xx/xx/xxxx	
	Types of mixtures	1	xx/xx/xxxx	xx/xx/xxxx	
	Solutions	1	xx/xx/xxxx	xx/xx/xxxx	
	Concentration of a solution	2	xx/xx/xxxx	xx/xx/xxxx	
	Suspensions and Colloidal Solutions	2	xx/xx/xxxx	xx/xx/xxxx	
	Separating the components of a mixture	2	xx/xx/xxxx	xx/xx/xxxx	
	Separation of immiscible and miscible liquids	1	xx/xx/xxxx	xx/xx/xxxx	
	Types of pure substances	1	xx/xx/xxxx	xx/xx/xxxx	

Prior Concept/Skills:

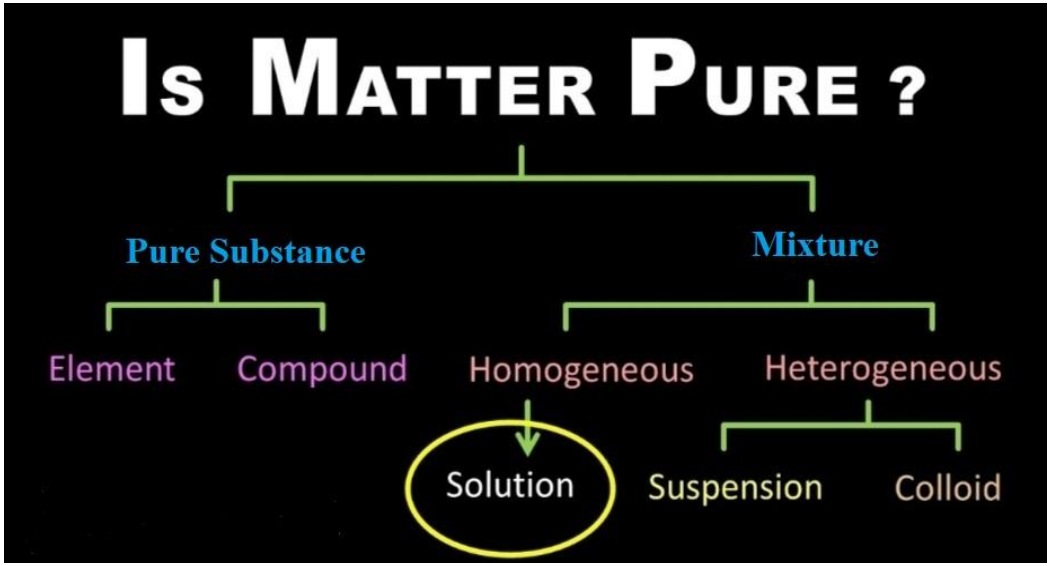
1. Name the method by which you can separate butter from milk.
2. Which method of separation is used for husk from wheat flour?
3. What is air called, if it is a combination of some gases?

Learning Outcomes:	**No. of Periods**
1. Classification of matter based on their states (solid/liquid/gas).	1
2. Draws conclusion of matter is made up of particles.	
3. Seek answers to queries on their own "Is the mixture heterogeneous?"	1
4. Differentiates compound and mixture, solution based on their properties.	1
5. Calculates using the data given of concentration of solution in terms of mass by mass percentage of substances.	1
6. Communicates the findings and conclusions effectively of concentration of mixtures.	1
7. Differentiates suspension and colloid based on their properties.	
8. Relates processes and phenomena with causes and effects of various processes of separation with the physical and chemical properties of the substances.	1
9. Draws labelled diagrams of process of distillation and sublimation.	1
10. Analyses and interprets graphs and figures of properties of components of a mixture to identify the appropriate method of Separation.	1
11. Calculates using the data given boiling points of liquids to predict the order of their separation from the mixture.	
12. Applies scientific concepts in daily life and solving problems of separation of mixtures.	1
13. Explains processes of principle of separation of different gases from air.	1

14. Draws flow chart of the process of obtaining gases from air. 15. Classifies composition (element/compound/ mixture) based on their properties.	1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students use the rules of solution concentration in cold drinks made during the summer.
2. Students will utilize the methods in separation of immiscible and miscible liquids.
3. Students will identify where Tyndall effect is affected.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Conduct and discuss activity on the churning of milk. 2. Discussion and explain the concept of mixture. 3. Explain types of mixtures with Examples.	1. Students conduct an activity 2. Group discussion on the properties of the mixture and pure substance 3. Students collect the information of homogeneous and heterogeneous	1. Write the uses of centrifuge machine? 2. What is a mixture? 3. Students give examples of homogeneous and heterogeneous mixtures.	1. What is principle involved in the working of laundry dryer. 2. Is the mixture heterogeneous? Give

	mixtures		reason.
4. Discussion and explain the concept of solutions and their properties.	4. "All the solutions are mixtures, but not all mixtures are solutions"- Discuss	4. Students complete the homework	3. Define solution, solvent and solute.
5. Conduct an activity on the preparation of saturated and unsaturated solutions.	5. Students prepare the saturated and unsaturated solutions.	5. Identify the main difference between saturated and unsaturated solutions.	4. When do you say that a solution is dilute solution?
6. Explain and conduct an activity on factors affecting the rate of dissolving.	6. Solved the problems on mass percentage of the mixture.	6. Write the factors affecting the rate of dissolving?	5. A solution contains 50g of common salt in 150g of water. Find the mass percentage of the solution?
7. Explain Suspension and Colloidal solutions with examples.	7. Collect information of suspension and colloidal solutions.		
8. Discussion on Tyndall effect and explain the properties of suspension and colloids.	8. Students give examples of Tyndall effect in our daily life.	7. What is Tyndall effect?	6. Does starch show Tyndall effect?
9. Conduct an activity on the separation of mixtures by sublimation.	9. Students describe the procedure.	8. Students try this method with another mixture.	7. What is the main principle of sublimation?
10. Conduct an activity on the separation of mixtures by evaporation.	10. Students arrange the apparatus and conduct activity.	9. Students record the observations in this procedure.	
11. Explain and conduct an experiment of paper chromatography.	11. Students draw the paper Chromatography.	10. Students identify the components of ink.	8. What is the aim of paper chromatography?
12. Explain and conduct an activity of separation of immiscible liquids by separating funnel.		11. Students complete the homework.	9. Which funnel is used to separate two immiscible liquids?
13. Explain the separation of two miscible liquids by distillation and fractional distillation.	12. Students draw the diagram of the distillation method.	12. Students give the reason, when distillation and fractional distillation methods can do.	10. What equipment is used for fractional distillation?
14. Explain the flow chart of the process of obtaining gases from air.		13. Draw the flow chart of the process of obtaining gases from are	

15. Discussion and explain types of pure substances	13. Collect information on elements and compounds		11. What are 5 examples of pure substances?

Check For Understanding Questions	TLM's (Digital + Print)
1. Factual: 1. Is blood a heterogeneous mixture? 2. What does suspension and colloid have in common? 3. Why is it not possible to distinguish particles of a solute from the solvent in solution? **2. Open Ended/Critical Thinking:** 1. Why do colors separate in paper chromatography? 2. Is a substance always homogeneous? 3. Which is the more stable suspension or colloid? why 4. Why do immiscible liquids form different layers when mixed together? **3. Student Practice Questions & Activities:** 1. Classify the following into elements, compounds and mixtures. (a) Sodium (b) Soil (c) Sugar solution (d) Silver (e) Calcium carbonate (f) Tin (g) Silicon (h) Coal (i) Air (j) Soap (k) Methane (l) Carbon dioxide (m) Blood 2. Draw the figures of arrangement of apparatus for distillation and fractional distillation. What do you find the major difference in these apparatus? 3. Frame any two questions to understand "Fractional distillation" 4. Write the steps you would use for making tea. Use the words given below and write the steps for making tea? Solution, solvent, solute, dissolve, soluble, insoluble, filtrate and residue.	1. DIKSHA App 2. Used prepared Quiz paper. 3. Utilized digital classroom. 4. Youtube videos

Assessment:

1. Give some daily life experiences where you can observe the "Tyndall effect".
2. Compare the properties of suspensions and colloids.
3. Classify the following into Solutions, Suspension Colloidal dispersion
   Ink, soda water, brass, fog, blood, aerosol sprays, fruit salad, black coffee, oil and water, boot polish, air, nail polish, starch solution and milk.
4. Collect the information on the separation of immiscible liquids.

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS