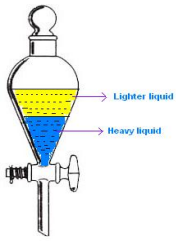
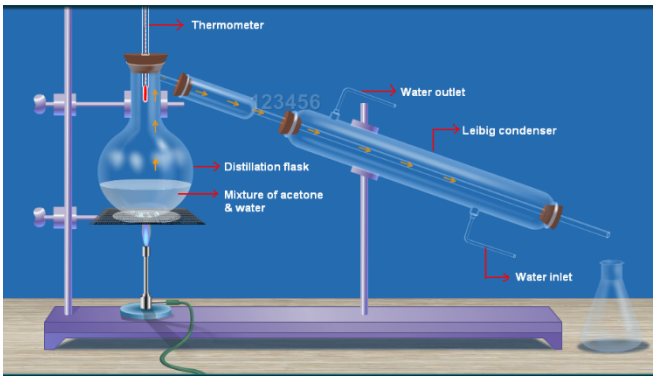
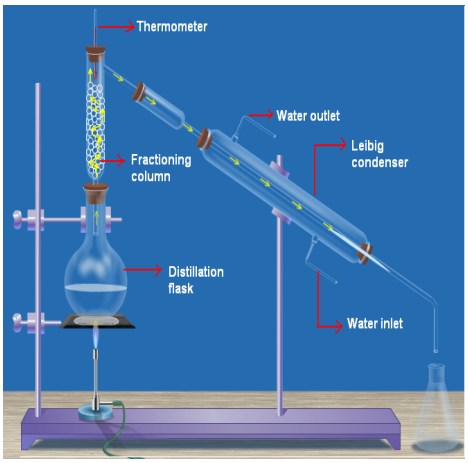
ODM EDUCATIONAL GROUP
Changing your Tomorrow

ODM Teachers' Note

Class	IX	Subject	CHEMISTRY
PD	3	Chapter-2	IS MATTER AROUND US PURE
Recapitulation of the previous taught.	✔ We came across the need for the separation of mixture. ✔ We learnt of the various traditional method of separation o mixtures. ✔ We learnt about the method of Filtration, Evaporation, Magnetic separation, Sieving, winnowing, Threshing and Loading.		
Sub-Concepts	❖ Separating funnel, Sublimation, Distillation, Fractional Distillation as the methods of separation. ❖ Crystallisation		
Teaching Aid To be used	Smart Class, PowerPoint presentation, classroom objects, newspaper clips (advertisements), charts.		
Learning Outcome	• Student will be able to know about the method of separating two immiscible liquid by separating funnel. • Student will be able to know about the method of separating two miscible liquid by distillation and fractional distillation. • They would know about the sublimation as a method of separation. • They would know about crystallisation as a method of separation.		
Sl. No	Step Wise (What to be done)		
1 Introduction	For Achievers Teacher should initiate the discussion on following topics, which will revolve around the core topic of the chapter like, How can we separate oil and water? ➤ Vision to acquire knowledge of the methods of separating immiscible liquids. ➤ They would be given the	For Average ➤ They would made familiar of the concept of separating the components using separating funnel and sublimation. ➤ They would be made to know Distillation, Fractional Distillation as the methods of separation. ➤ They would be given some examples of these processes	

	concept and principle of distillation and fractional distillation. ➤ Vision to acquire knowledge of the methods of crystallisation and its advantages over evaporation. ➤ Vision to acquire knowledge of the methods of sublimation and carry out the practical works ➤	
2. Separating Funnel and Sublimation	**Separating funnel:** When two liquids do not mix, they form two separate layers and are known as immiscible liquids. These two liquids can be separated by using a separating funnel. Examples: Kerosene and water mixture is separated by using separating funnel method. This method is also used to extract iron from its ore.  Separation of immiscible liquids using separating funnel **Sublimation:** Sublimation is the process in which solid directly changes to gaseous state. Example: Salt and a sublimable solid such as ammonium chloride, can be separated by the process of sublimation	

3-Distillation and Fractional Distillation	**Distillation:** This method is used for the separation of a mixture containing two miscible liquids that boil without decomposing and have a large difference between their boiling points. Process of conversion of a liquid into vapour by boiling, and then recondensing the vapour into liquid is called distillation.  **Fractional distillation method:** In case the difference in the boiling points of the liquids is less than 25K temperature, we use the fractional distillation method. The apparatus is almost the same as used in distillation. The only difference is that a fractioning column is fitted in between the distillation flask and the condenser. A simple fractioning column is made up of a tube packed with glass beads. The beads provide the surface for the vapours to cool and condense again and again. The fractioning columns obstruct the smooth upward flow of vapours. Example: A mixture of n-hexane and n-heptane can be separated through the process of fractional distillation 

4.Crystalliasation	**Crystallisation:** Crystallisation is a separation and purification method which involves the precipitating of solid crystals from its saturated solution on cooling. In this process the impure sample is dissolved in minimum amount of suitable solvent. The formed solution is heated to get a saturated solution. On cooling, this saturated solution produces pure crystals of the sample. **Crystallisation is used for:** Purification of salt that we get from sea water and separation of crystals of alum from impure samples.
5.Home Assignment	Exercise-II Q1to Q12 1) Which method is used to separate a mixture of mustard oil and water? 2) What are the advantages of Fractional distillation over simple distillation? 3) Explain how can we separate a mixture of acetone and alcohol.