



Cycle 2B (17<sup>th</sup> May to 24<sup>th</sup> May)

Class IX

Name of the Chapter: Is matter around us Pure

<b>1st period: Pg: 23</b>	
<b>Step 1</b>	Study the following topic from the textbook: <ul style="list-style-type: none"><li>• 2.3.8 How can we obtain pure copper sulphate from an impure sample?</li><li>• Activity 2.9</li></ul>
<b>Step 2</b>	Study the same topic in the Extra mark app:  Chapter 2: Is matter around us pure → Detailed learning → Understanding concepts
<b>Step 3</b>	<i>Clear your doubts (if any) from the subject teacher.</i>
<b>Step 4</b>	Revise using following Bullet points: <ul style="list-style-type: none"><li>• <b><u>Crystallisation</u></b> Crystallization is a process that separates a pure solid in the form of its crystals from a solution. This method is used to purify solid, for example the salt we get from sea water can have many impurities in it. To remove these impurities, the process of crystallization is used.  <b>Process of crystallization</b> Here is an experiment to understand crystallization clearly: Step 1: Take 50 ml water in a beaker  Step 2: Add impure sugar in it and stir it  Step 3: Now heat the solution and add more amount of sugar in it.  Step 5: After some time there will be a point at which no more sugar can be</li></ul>

	<p>dissolved in water. This stage is the saturation point, and the solution is referred to as a saturated solution</p> <p>Step 6: Now filter the sugar with the help of a filter paper</p> <p>Step 7: Collect the filtrate in a glass bowl and cool it without disturbing the filtrate.</p> <p>Step 8: We will observe that some fine crystals are formed in the bowl.</p> <p>Step 9: This process is called crystallisation.</p> <p>Crystallization technique is better than simple evaporation technique as-</p> <ul style="list-style-type: none"> <li>• Some solids decompose or some, like sugar, may get charred during heating to dryness.</li> <li>• Some impurities may remain dissolved in the solution even after filtration. On evaporation these contaminate the solid.</li> </ul> <p><b>Applications</b></p> <ul style="list-style-type: none"> <li>• Purification of seawater</li> <li>• Separation of alum crystals from impure samples</li> <li>• In the pharmaceutical industry, crystallization is used as a separation and purification process for the synthesis and isolation of pure ingredients.</li> </ul>
<p><i>Step 5</i></p>	<p>Solve the questions as below:</p> <p><u>Write the following Questions/ Answers in Chemistry Class Work Copy</u></p> <p>Q1: What type of mixtures are separated by the technique of crystallisation?</p> <p>Ans: By the technique of crystallization, pure solids are separated from impurities. For example, salt obtained from sea is separated from impurities; crystals of alum (Phitkari) are separated from impure samples.</p>
<p><b>End of 1st Period</b></p>	

**Step1**

Study the following topic from textbook:

- 2.3.8 How can we obtain pure copper sulphate from an impure sample?  
Continued

**Step2**

Study the same topic in the Extramark app:

Chapter 2: Is matter around us pure → Detailed learning → Understanding concepts

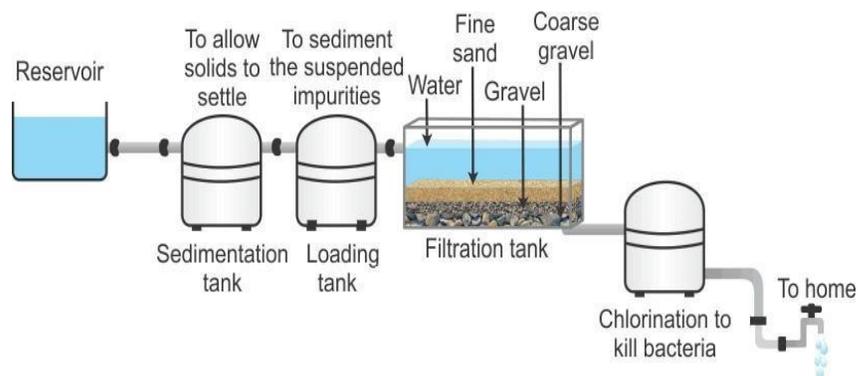
**Step3**

Clear your doubts (if any) from the subject teacher.

**Step4**

Revise using following Bullet points:

- **Water purification system**



**Sedimentation:**

Water pumped from the source (river, lake or dam) is allowed to stand in large tanks, called sedimentation tanks, for a few hours. Heavier particles like stones and sand and other particles settle down.

After the sedimentation of large impurities is done the water is pushed to the loading tank. The addition of a small quantity of potash alum ( $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$ ) helps the fine suspended particles to settle down quickly.

	<p><b>Filtration:</b></p> <p>The water from the sedimentation tank is filtered through layers of sand and gravel. Filtration is also done through activated charcoal, which affords better-quality water.</p> <p><b>Chlorination:</b></p> <p>The filtered water is then treated with chlorine gas, which kills germs.</p>
<i>Step 5</i>	<p><u>Solve the questions as below:</u></p> <p><u>Write the following Questions/ Answers in Chemistry Class Work Copy</u></p> <p>Q1: How will we separate the crystals from the liquid after the crystals appeared in the china dish in the crystallization process?</p> <p>Ans: We can separate the crystals from the liquid in the china dish by filtration. The water will be separated out and crystals will remain on filter paper.</p>
<b>End of 2nd Period</b>	

<b>3rd period: Pg: 24</b>	
<i>Step 1</i>	<p>Study the following topic from textbook:</p> <ul style="list-style-type: none"> <li>• 2.4 Physical and Chemical Changes.</li> </ul>
<i>Step 2</i>	<p>Study the same topic in the Extramark app:</p> <p>Chapter 2: Is matter around us pure → Detailed learning → Understanding concepts</p>
<i>Step 3</i>	<p>Clear your doubts (if any) from the subject teacher.</p>
<i>Step 4</i>	<p>Revise using the following bullet points</p> <ul style="list-style-type: none"> <li>• The properties that can be observed and specified like colour, hardness, rigidity, fluidity, density, melting point, boiling point etc are physical properties.</li> </ul>

	<ul style="list-style-type: none"> <li>• The process that brings about change in physical properties and new substances are formed are Physical Changes. When we convert a substance from one state to another, such as a solid into a liquid or vice-versa, it is also a physical change as only the physical nature has changed but the composition is same. For Example, Change of ice into water.</li> <li>• The process in which new substances are formed and Chemical properties of the substances get changed are Chemical Changes. A chemical change is also called a Chemical reaction. For example burning is a chemical change.</li> </ul>
Step 5	<p>Solve the following questions</p> <p>Q1. Classify the following as chemical or physical changes:</p> <ul style="list-style-type: none"> <li>• cutting of trees,</li> <li>• melting of butter in a pan,</li> <li>• rusting of almirah,</li> <li>• boiling of water to form steam,</li> <li>• passing of electric current, through water and the water breaking down into hydrogen and oxygen gases,</li> <li>• dissolving common salt in water,</li> <li>• making a fruit salad with raw fruits,</li> <li>• burning of paper and wood.</li> </ul> <p>Q2: Write the steps you would use for making tea. Use the words - solution, solvent, solute, dissolve, soluble, insoluble, filtrate and residue.</p> <p>Q3: Which of the following are chemical changes?</p> <ul style="list-style-type: none"> <li>• Growth of a plant</li> <li>• Rusting of iron</li> <li>• Mixing of iron filings and sand</li> <li>• Cooking of food</li> <li>• Digestion of food</li> <li>• Freezing of water</li> <li>• Burning of a candle.</li> </ul> <p>Q4: Give an example each for the mixture having the following characteristics. Suggest a suitable method to separate the components of these mixtures</p>

- |  |   |
|--|---|
|  | <ul style="list-style-type: none"><li>• A volatile and a non-volatile component.</li><li>• Two volatile components with appreciable difference in boiling points.</li><li>• Two immiscible liquids.</li><li>• One of the components changes directly from solid to gaseous state.</li><li>• Two or more coloured constituents soluble in some solvent</li></ul> |
|--|---|

