

CLASS – VI
LESSON PLAN
CHAPTER-5: SEPARATION OF SUBSTANCES

Unit	CHAPTER-5: SEPARATION OF SUBSTANCES
Class Transaction	Total: 6 periods (approx. 40 min each)
Pre-requisite for the course	Students recall the reason for separating materials 1. Separating useful components 2. Separating non useful components 3. Separating impurities from various components
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. Subject enrichment Students would be able to, thereby inculcating competencies like collaboration, critical thinking and creativity
Learning Outcomes	KNOWLEDGE: Students will be able to: • Know about various methods of separation: ❖ Handpicking ❖ Winnowing ❖ Threshing ❖ Sedimentation ❖ Decantation ❖ Sieving ❖ Filtration • Compare evaporation and condensation. • With the help of an activity find out whether water dissolves any amount of a substance. SKILLS and COMPETENCIES 1) Critical thinking and problem solving (working effectively with others), 2) Character building (Taking tasks fearlessly and achieves goals.) 3) Communication (evaluating the information critically and competently. 4) Collaboration (responding open mindedly to different ideas) 5) Creativity (developing ,implementing and communicating new ideas)
Transaction ,Methodology (The teacher can use the mentioned techniques, wherever applicable ,and	Strategies used- Inductive -deductive reasoning, muddiest point discussion, think pair share. Dimensions Of Learning- D4 (E-I Investigation) D3 (Compare)

can use any other too.)	Transaction would proceed in the following manner- Brain Storming-The class would start with a discussion on what the students have already learned in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- ppt and Digital Content would be shared Guided practice followed by Independent Practice- NCERT questions to be discussed in the classroom. Techniques to be used: Quiz Daily Practice Problem MCQ Peer Assessment Lab Activities Any Other												
Resources	Text Book: NCERT text book for Science												
Self Study,Home work Assignments	Independent Practice: Students would do the given questions and diagrams in their notebooks. Notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 marks On time submission.....1 mark Presentation/ Neatness.....1 mark Content.....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.												
Assessments	Through Pen Paper Test students will be assessed creatively and critically <table> <tr> <td>4 UNIT TESTS</td> <td>25 Marks each</td> </tr> <tr> <td>HALF YEARLY EXAMINATION</td> <td>80 Marks</td> </tr> <tr> <td>ANNUAL EXAMINATION</td> <td>80 Marks</td> </tr> <tr> <td>INTERNAL ASSESSMENT</td> <td>10 Marks</td> </tr> <tr> <td>• Note Book Submission</td> <td>5 Marks</td> </tr> <tr> <td>• Lab Practical (Subject Enrichment)</td> <td>5 Marks</td> </tr> </table> Through lab Practical Students are assessed for Collaboration, Critical thinking.	4 UNIT TESTS	25 Marks each	HALF YEARLY EXAMINATION	80 Marks	ANNUAL EXAMINATION	80 Marks	INTERNAL ASSESSMENT	10 Marks	• Note Book Submission	5 Marks	• Lab Practical (Subject Enrichment)	5 Marks
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Addressing Classroom Diversity	Due to various social backgrounds and multiple intelligence, the classroom might be a diverse arena. The following techniques can be used for various groups: <i>For gifted students:</i> • High order thinking skills questions to be done • Encouragement for referring other resources <i>For weak students:</i> • short answers to be completed • Buddy help to be provided • Provide grade-up classes <i>For differently abled students:</i> • Ignore spelling mistakes and formulae, if not written • Call parents at regular intervals • Provide grade-up classes • Encourage and motivate them at every level.
Marks	The weightage would be given by CBSE.

After explaining the concept , the students would be assessed by asking the following questions:	
Q1	Is it possible to separate sugar crystals mixed with wheat flour? Can you separate powdered sugar in the same manner?
Q2	Lemonade is prepared by mixing lemon juice and sugar in water. You wish to add ice to cool it. Should you add ice to the lemonade before or after dissolving sugar? In which case would it be possible to dissolve more sugar and why?
Q3	Salt is added to a beaker containing water. After a point, no more salt gets dissolved in the beaker, and the extra salt added after this point settles down at the bottom of the beaker. If this beaker is heated, then what will be observed?
Q4	When milk, cooled after boiling, is poured onto a piece of cloth the cream (malai) is left behind on it. Name the process of separating cream from milk.
Q5	Name the property used in separating a mixture of two solids by winnowing.

TOPIC	DAY ONE :
Pre- Requisite for the course	Students recall the reason for separating materials 1. Separating useful components 2. Separating non useful components 3. Separating impurities from various components
Assessment of qualifying knowledge	This topic requires knowledge of various methods of separation and the need to separate substances.
Objective	To be able to know about the importance of separation of substances in our daily life.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and understand: ● The need of separating constituents from their mixture. ● Use of different methods based on shape, size and material. <u>SKILLS and COMPETENCIES</u>- Students will be able to: ● Collaboratively discuss about the basic need of separating constituents from their mixture. ● Critically analyse various methods of separation used on the basis of their shape, size and material.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Dimensions Of Learning- D1, D2 Transaction would proceed in the following manner- Anticipatory Set: 10 min The facilitator initiates a conversation with the learner by asking them about the materials of the objects. After the conversation, different kinds of materials will be listed on the board. The facilitator will now discuss about the significance of separation of substances. Strategies used- Think pair share. After student teacher interaction, students will read the concept from the book and then think for a minute and share it with their partner for better understanding. Discussion of topic and Guided Practice 20 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) The students will attempt few questions. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the activities in NCERT text book and attempt the questions. Closure: 5 min

	A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Science
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their notebooks.
Assessments	Oral Test (5 minutes)
TOPIC	DAY TWO
Pre- Requisite for the course	This topic requires the knowledge of various methods of separation and their technique.
Assessment of qualifying knowledge	Knowledge testing by asking students to write the methods used in daily life to separate substances.
Objective	The students will be able to know about the method of handpicking and threshing and their properties.
Learning Outcomes	<u>KNOWLEDGE</u> - The students will be able to know about the procedure and the importance of the methods of separation. <u>SKILLS and COMPETENCIES</u> - Critically analyse the term handpicking and threshing.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Dimensions Of Learning- D1,D2 Transaction would proceed in the following manner- Recapitulation: 5 min Brainstorming on the previously taught concept would be done by asking some Questions like: Q.1 What is the significance of separation of substances? Q.2 Give examples of the materials that we separate in our daily life? Discussion of topic through Collaborative Learning: 15 min (Critical Thinking, Collaboration) The facilitator initiates the conversation with the learner by asking about the most common way of separating substances, i.e by using our hands which is termed as handpicking. The facilitator provides various examples and will discuss about the another method of separation i.e threshing. The facilitator will explain about methods of separation that is based upon the following: (a) Separating solids from other solids. (b) Separating insoluble solids from liquids. Strategies used- Think pair share. After student teacher interaction, students will read the concept from the

	book and then think for a minute and share it with their partner for better understanding. Guided practice: 15 min The students, with the help of the facilitator, will answer the questions in their notebook in the class. The teacher would ensure that each student tries to be independent at the work as well as be under the teacher's guidance. Independent Practice: Students will complete the remaining question and answer given in the notebook. Students who would have difficulty in answering the questions would solve with the help of their buddies. Closure: 5 min The facilitator will use smart board and ask the students to draw the diagrams of the methods of separation that have been discussed.
Resources	Text Book: NCERT text book for science
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral quiz (5 minutes)
TOPIC	DAY THREE
Pre- Requisite for the course	This topic requires knowledge of various methods of separation that they use in their daily life.
Assessment of qualifying knowledge	Questions from the previous class about the related topic would be asked for the whole class group.
Objective	The students will able to know about the methods of separation: Winnowing Sieving
Learning Outcomes	<u>KNOWLEDGE</u>- The students will be able to know about the method of separation i.e winnowing and sieving. <u>SKILLS and COMPETENCIES</u>- Critically analyse the term winnowing and sieving and where are they used.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Dimensions Of Learning- D1,D2 The facilitator initiates the conversation with the learner by asking them about the process of separating husk particles from wheat grains. The facilitator will then explain the method of winnowing and where is it used. The facilitator will ask the students about how is bran separated from wheat flour at home and will further explain the method of sieving. Strategies used- Think pair share. After student teacher interaction, students will read the concept from the book and then think for a minute and share it with their partner for better understanding. Transaction would proceed in the following manner-

	Recapitulation: <u>5 min</u> Oral test on the previous concept would be taken up. Discussion of topic through Collaborative Learning: <u>15 min</u> (Critical thinking) Activities would be discussed and students would solve different questions per group and then the questions would be crosschecked. Digital content would be used. The facilitator would take rounds and help students with their doubts. Guided Practice: <u>15 min</u> The students will answer the questions from the textbook in their notebook in the class with the help of their teacher. The teacher would ensure that each student tries to be independent at the work as well as be under the teacher's guidance. Independent Practice: Students will complete the diagrams and revise the answers done in the notebook. Closure: <u>5 min</u> The facilitator will ask few questions to check the understanding of the students.
Resources	Text Book: NCERT text book for science
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their notebooks.
Assessments	Oral test (5 minutes)
TOPIC	DAY FOUR
Pre- Requisite for the course	This topic requires knowledge of Various methods of separation and their significance.
Assessment of qualifying knowledge	Knowledge testing by asking students to discuss about how do they get water free from impurities to drink.
Objective	Students will be able to learn about the methods sedimentation, decantation and filtration.
Learning Outcomes	<u>KNOWLEDGE</u>- The students will be able to know about the method of sedimentation, decantation and filtration. <u>SKILLS and COMPETENCIES</u>- Critically analyse the term filtration, sedimentation and decantation.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Dimensions Of Learning- D1,D2 Transaction would proceed in the following manner- Recapitulation: <u>5 min</u> Quick revision on the previous concept would be taken up. Discussion of topic through Collaborative Learning: <u>15 min</u> (Creativity, Collaboration) The facilitator initiates a conversation with the learner by asking them about how we can obtain water free from impurities. The facilitator will explain about the process of sedimentation and decantation.

	The facilitator will also discuss about the separation of two liquids. The facilitator will now explain the process of filtration and where is it used. Strategies used- Think pair share. After student teacher interaction, students will read the concept from the book and then think for a minute and share it with their partner for better understanding. Guided Practice: <u>15 min</u> The students will answer the questions from book in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through NCERT textbook. Closure: <u>5 min</u> Discussion of muddiest point.
Resources	Text Book: NCERT text book for science
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their notebooks.
Assessments	Written test (5 minutes)

TOPIC	DAY FIVE
Pre- Requisite for the course	This topic requires knowledge of various methods of separation and their technique.
Assessment of qualifying knowledge	Knowledge testing by asking students to discuss about condensation and evaporation done in previous classes.
Objective	The students will be able to know about: Evaporation Condensation
Learning Outcomes	<u>KNOWLEDGE</u>- The students will be able to know about the method of evaporation and condensation. <u>SKILLS and COMPETENCIES</u>- Critically analyse the term evaporation and condensation and factors affecting the rate of evaporation..
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Dimensions Of Learning- D1,D2 The facilitator initiates a conversation with the learner by asking them about the process of condensation and evaporation. After the conversation the facilitator will explain how these processes can be used in separation. Also by giving various examples, the facilitator will explain about the factors affecting the rate of evaporation. Strategies used- Think pair share. After student teacher interaction, students will read the concept from the book and then think for a minute and share it with their partner for better

	understanding. Transaction would proceed in the following manner- Recapitulation: <u>5 min</u> Quick revision on the previous concept would be taken up. Discussion of topic through Collaborative Learning: <u>15 min</u> (Creativity, Collaboration) The facilitator will conduct One minute quiz to recap the learning of previous day and check the understanding. Guided Practice: <u>15 min</u> The students will answer the questions from book in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will answer the various problems independently. Closure: <u>5 min</u> Discussion of muddiest point.
Resources	Text Book: NCERT text book for science
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their notebooks.
Assessments	Written test (5 minutes)

TOPIC	DAY SIX
Pre- Requisite for the course	This topic requires knowledge of soluble and insoluble substances and factors effecting solubility of a substance.
Assessment of qualifying knowledge	Knowledge testing by asking students to discuss about various factors effecting solubility of a substance.
Objective	The students will able to know about: Saturated solution Factors effecting solubility of a substance
Learning Outcomes	<u>KNOWLEDGE</u>- The students will be able to know about saturated solution and factors effecting the solubility of a substance. <u>SKILLS and COMPETENCIES</u>- Critically analyse the term saturated solution and collaboratively discuss about the factors effecting the solubility.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Dimensions Of Learning- D1,D2 The facilitator will initiate the conversation by asking the students about the amount of salt or sugar that can be dissolved in a liquid. The facilitator will explain about the saturated solution and how can we increase or decrease solubility of a solution. Strategies used- Think pair share. After student teacher interaction, students will read the concept from the book and then think for a minute and share it with their partner for better understanding.

	Transaction would proceed in the following manner- Recapitulation: <u>5 min</u> Quick revision on the previous concept would be taken up. Discussion of topic through Collaborative Learning: <u>15 min</u> (Creativity, Collaboration) The facilitator will conduct One minute quiz to recap the learning of previous day and check the understanding. Guided Practice: <u>15 min</u> The students will answer the questions from book in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will answer the various problems independently. Closure: <u>5 min</u> Discussion of muddiest point. A quick revision would take place by using an active learning strategy: NUMBERED HEADS TOGETHER- In this activity the students work in groups. Each group has a number and each participant in each group has a number. The facilitator draws a group number and a participant number to respond to the question. This ensures that everyone in the group is paying attention and that the group prepares everyone to answer the questions.
Resources	Text Book: NCERT text book for science
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their notebooks.
Assessments	Written test (5 minutes)