

CLASS – VIII
LESSON PLAN
CHAPTER-4 Materials : Metals and Non Metals

Unit	Chapter 4 Materials: Metals and Non Metals
Class Transaction	Total: 8 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires previous knowledge of- • What is matter? • List some examples of matter present in our surroundings. • Classify the matter in as many ways as you can. • What are utensils, window grills and gate made of?
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. Group Discussion 4. HW notebook
Objective	- o Given the content (chapter) the learners will be able to differentiate between physical and chemical properties of metals and non-metals - o Write the chemical/word equation for different chemical reactions. - o Explain the terms malleability & ductility - o List the uses of metals and non-metals.
Learning Outcomes	<u>KNOWLEDGE-</u> <i>Students will know and understand</i> 1. Physical and Chemical properties of metals and non metals 2. Explain the terms malleability and ductility 3. List the uses metals and non metals <u>SKILLS AND COMPETENCIES-</u> <i>Students would be able to</i> 1. Express properties of metals and non metals and develop collaboration in the process. 2. Built character and citizenship amongst themselves by discussing /communicating the ways to identify <i>metals and non metals</i> hence strengthening nation's economy. 3. Develop the ability to analyze and differentiate between various metals and non metals. 4. Provide examples for different types of metals and non metals. Apply concepts learnt in everyday problems. 5. Carry out practical related to properties of metals and non metals in lab and develop critical thinking and collaboration in the process.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can	Transaction would proceed in the following manner- <i>Brain Storming-</i> The class would start with a discussion on what the students have already learnt 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.

use any other too.)	<i>Introduction of the topic-</i> classroom demonstration on different types of fibres Students observe the behaviour of different types of fibres Group activities <i>Guided practice followed by Independent Practice-</i> NCERT questions to be discussed in the classroom. Techniques to be used: Quiz Daily Practice Problem MCQ Peer Assessment Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare-contrast matrix), silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for science Reference Book 1. CBSE Exemplar 2. Sample papers / last years papers
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W notebooks as mentioned in the monthly planner by which we can assess their critical thinking and creativity HW 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(creativity).....1 mark Content(critical thinking and creativity)..... 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	4 UNIT TESTS (25, 25, 25, 25)..... 100 Marks HALF YEARLY EXAMINATION.....80 Marks ANNUAL BOARD EXAMINATION.....80 Marks PERIODIC TEST By administering pen paper test we assess creativity and critical thinking. INTERNAL ASSESSMENT20 Marks Periodical Test 10 Marks By administering pen paper test we assess creativity and critical

	thinking. Subject Enrichment 10 Marks With the help of subject enrichment activities we assess communication ,collaboration, character building and citizenship By writing the answers of three levels of NCERT question we can assess their knowledge (Level 1 questions) critical thinking(Level 2 questions), creativity(Level 3 questions) Note Book Submission 05 Marks
Addressing Classroom Diversity	Due to various social backgrounds and multiple intelligences, the classroom might be a diverse arena. The following techniques can be used for various groups: <i>For gifted students:</i> • Preparing a debate • Making PPT • Designing an exhibit • Writing a report • Preparing a talk • Encouragement for referring other resources <i>For weak students:</i> • Making a Chart/diagram/poster/ flashcards • Buddy system 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
Marks	The weightage would be given by CBSE.

Topic	DAY 1-Introduction to metals and non metals
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires Basic knowledge of elements, compounds and mixtures which students had already learnt in class VI and VII
Assessment of qualifying knowledge	Knowledge testing by asking questions in class
Objective	Students will be able to explain the term element and identify the various metals and non metals used in daily life.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and understand the term metal and non metal.</i> <u>SKILLS AND COMPETENCIES</u>- <i>Students would be able to</i> • Critically analyse the different metals and non metals available around us
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: 10 min *Facilitator will introduce the term metal and non metal with the help of different metals available in classroom and also quote some examples from daily life . * Students observe and identify various metals and non metals around them. * Students also note down the examples in this category. DOL 1,2,3 Discussion of topic through Collaborative Learning: 15 min (Critical Thinking and Problem Solving) Think, pair share Students in group discuss various metals and non metals available in their surroundings. Activity: Teacher will draw GO of metals and non metals. Guided practice: 10 min • Discussion with students and explanation of the term metalloid • NCERT Questions Independent Practice: worksheet Closure: 5 min Involving students in summarizing by asking them to prepare questions based on the topic./A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar 1

Closure	Involving students in summarizing by asking them to prepare questions based on the topic.
Self Study, Home Work, Assignments	Independent Practice: Questions in worksheet
Assessments	Assignment
Topic	DAY 2-Physical properties of metals and non metals
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of the term physical properties read in classes VII and VIII
Assessment of qualifying knowledge	Knowledge testing by asking students various questions on physical properties.
Objective	Students will be able to explain the term physical properties and relate it with metals and non metals. Students can also identify the difference between metals and non metals in terms of physical properties.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to Critically analyse the importance of metals and non metals
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: 5 min *Teacher asks questions based on previous day learning DOL 1,2,3 Discussion of topic through Collaborative Learning: 20 min (Critical Thinking and Problem Solving and collaboration) - Class will be divided into groups of 4 students each. - Each group will discuss this topic from NCERT . - They will be asked to differentiate between the metals and non metalson the basis of their physical properties. - The students will then draw out the conclusion and record it. Guided practice: 10 min. The following questions will be asked to check their understanding: - Where do we use metals and non metals? - Explain the physical properties of metals and non metals? - Which metal is used in making your pencil box ,school belt and window frames or class almirah? Independent Practice: Quiz Closure: 5 min Involving students in summarizing by asking them to prepare questions based on the topic.
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Involving students in summarizing by asking them to prepare questions

	based on the topic.
Self Study, Home Work, Assignments	Independent Practice: worksheet
Assessments	Peer assessment
Topic	Day 3–Exceptions of metals and non metals
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of physical properties of metals and non metals.
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous day learning
Objective	Students will be able to give exceptions of metals and non metals based on physical properties.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to develop the ability to analyze and differentiate between metals and non metals based on physical properties.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: 5 min Recapitulation by asking questions based on previous day's learning DOL 1,2,3 Discussion of topic through Collaborative Learning: 20 min (Critical Thinking and Problem Solving , collaboration and communication) Think, pair share Students in groups of six will discuss-p important exceptions of metals and non metals based on physical properties in their groups. They will be asked to find the difference in the properties and uses. They will also name some exceptions with their uses. Teaching strategy – Demo by teacher, Discussion, think pair share, explanation by teacher Guided practice: 10 min Relevant NCERT Questions Closure: 5 min Summarization by students Independent Practice-Students will complete related questions of NCERT
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Involving students in summarizing the topic
Self Study, Home Work, Assignments	Independent Practice: Worksheet

Assessments	Quiz
Topic	DAY 4 -- Lab work on chemical properties
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of chemical properties
Assessment of qualifying knowledge	Knowledge testing by asking students to tell some examples of chemical changes done in class VII and VIII
Objective	Students will compare the properties of metals and non metals. On the basis of 1 Action with air 2 Action with acid 3 Action with water
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to develop the ability to analyze and differentiate between metals and non metals on the basis of chemical properties.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: 5 min Recapitulation by asking questions based on previous day's learning DOL 1,2,3 Discussion of topic through Collaborative Learning: 20 min (Critical Thinking and Problem Solving , collaboration and communication) Rally Robin Students in pairs will find the difference between metals and non metals. Teaching strategy – Demo by teacher, Lab activity, Discussion, think pair share, explanation by teacher Guided practice: 10 min NCERT Questions Closure: 5 min Summarization by students Independent Practice -Students will complete related questions of NCERT
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.
Self Study, Home Work, Assignments	Independent Practice: Quiz
Assessments	Questioning

Topic	DAY 5-Oxides of metals and non metals
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of chemical properties of metals and non metals
Assessment of qualifying knowledge	Knowledge testing by asking students to write the different compounds formed by heating metals.
Objective	Students will be able to explain the term acidic and basic oxides.
Learning Outcomes	SKILLS AND COMPETENCIES- <i>Students would be able to effectively interpret</i> various uses of plastic and its properties.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: 5min Recapitulation by asking questions based on previous day's learning DOL 1,2,3 Discussion of topic through Collaborative Learning: 25 min (Critical Thinking and Problem Solving, collaboration) Collaborative work, Class will be divided into groups of 6 students each. Groups will be asked to tabulate properties of metals and non metals. Guided practice: 5 min Students will write the chemical equations for the reactions Independent Practice: NCERT level 2 Questions Closure: 5 min Involving students in summarizing by asking them to prepare questions based on the topic
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.
Self Study, Home Work, Assignments	Independent Practice: worksheet
Assessments	Oral Test
Topic	DAY 6-Displacement Reaction
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of reactivity series of metals.
Assessment of qualifying knowledge	Knowledge testing by asking students to write the most reactive metals.
Objective	Students will be able to explain the term displacement reaction
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to Critically analyse the properties of metals

	Answer knowledge, understanding and application based questions on the topic.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: 5 min Recapitulation by asking questions based on previous day's learning DOL 1,2,3 Discussion of topic through Collaborative Learning: 20 min (Critical Thinking and Problem Solving, collaboration, communication and character) Instructional Input : Collaborative work, students will discuss-Page17 and 18 of NCERT in their groups. Teaching strategy – Class will be divided into groups of 8 students each. Groups will be asked to prepare play enacting displacement and double displacement. Each group will be given 5 minutes to give presentation. Presentation by groups followed by discussion Guided practice: 10 min NCERT Questions Independent Practice: Students will complete related questions of NCERT Closure: 5 min Summarization by students with the muddiest point discussed by the teacher.
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Summarization by students with the muddiest point discussed by the teacher.
Self Study, Home Work, Assignments	Independent Practice: worksheet
Assessments	Oral Test
Topic	Day 7-Lab Work
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of displacement reactions.
Assessment of qualifying knowledge	Recording of the observations made in lab
Objective	Students will be able to define displacement reactions . They will also

	relate these terms with daily life.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to develop the ability to analyze and classify them into different displacement reactions
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Anticipatory Set: 5 min Recapitulation by asking questions based on previous day's learning DOL1,2,3 Discussion of topic through Collaborative Learning: 20 min (Critical Thinking and Problem Solving , collaboration and Character building) Teaching strategy – Discussion and tabulation Instructional Input : Teacher will explain the observations to students. Guided practice: 10 min Students will observe and record their observation in tabular form. Closure: 5 min Summarization by students Independent Practice -Students will complete practical in their worksheets and answer related questions.
Resources	Text Book: NCERT text book for Science. Reference Book
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.
Self Study, Home Work, Assignments	Independent Practice: Worksheet
Assessments	Observations recorded in the worksheet
Topic	DAY 8 Uses of metals and non metals
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of metals and non metals
Assessment of qualifying knowledge	Knowledge testing by asking students to tell some uses of metals in daily life.
Objective	Students will be able to identify the various metals and non metals used in daily life.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to • develop the ability to analyze and give various uses of metals
Transaction Methodology (The teacher can use the mentioned	Transaction would proceed in the following manner- Anticipatory Set: 5 min Recapitulation by asking questions based on previous day's learning DOL 1,2,3

techniques, wherever applicable, and can use any other too.)	Discussion of topic through Collaborative Learning: 20 min (Critical Thinking, collaboration and communication) Collaborative work, Presentation by groups followed by discussion Guided practice: 10 min Relevant NCERT Questions Closure: 5 min Summarization by students with the muddiest point discussed by the teacher. Independent Practice-Students will complete related questions of NCERT
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Involving students in summarizing
Self Study, Home Work, Assignments	Independent Practice: worksheet
Assessments	Oral Test