

CLASS – VIII
LESSON PLAN
CHAPTER-6: Combustion and Flame

Unit	Chapter -6: Combustion and flame
Class Transaction	Total: 8 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires previous knowledge of- • Explain the terms fuel, ignition temperature and calorific value. • Differentiate between rapid combustion and spontaneous combustion. • List the conditions essential for combustion to take place. • Explain fire fighting and the working of fire extinguishers. • List harmful products formed by burning of fuels.
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. Group Discussion 4. HW notebook
Objective	Given the content (chapter) the learners will be able to describe and explain and tabulate the preparation, properties, and uses of different synthetic fibres, describe the disadvantages of synthetic fibres, differentiate between thermoplastic and thermosetting plastics. Given the reading of the topic, the learners will be able to list the various uses, advantages and disadvantages of plastic and list them in their notebook with 90% accuracy.
Learning Outcomes	<u>KNOWLEDGE-</u> <i>Students will know and understand</i> 1. Preparation ,properties and uses of synthetic fibres 2. Describe the disadvantages of synthetic fibres. 3. list the various uses, advantages and disadvantages of plastic. <u>SKILLS AND COMPETENCIES-</u> <i>Students would be able to</i> 1. Express properties of synthetic fibres and develop collaboration in the process. 2. Built character and citizenship amongst themselves by discussing /communicating the ways to identify natural and synthetic fibres hence strengthening nation's economy. 3. Develop the ability to analyze and differentiate between various types of synthetic fibres. 4. Provide examples for different types of synthetic fibres. Apply concepts learnt in everyday problems. 5. Carry out practical related to properties of fibres in lab develop critical thinking and collaboration in the process.
Transaction	Transaction would proceed in the following manner-

Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	<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. <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 EXAMINATION80 Marks ANNUAL BOARD EXAMINATION80 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 NCERT question we can assess their knowledge and critical thinking 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 Combustion
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires Basic knowledge of burning 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 combustion • Relate combustion with daily life • Give examples from daily life
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and understand the term combustion</i> <u>SKILLS AND COMPETENCIES</u>- <i>Students would be able to</i> • Critically analyse the different combustible substances 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 combustion with the help of combustible substances. • Name some fuels which are used in rural areas. • Name the fuels which are used in automobiles. • Name some gaseous fuels • How is burning of candle different from burning of coal Wipro Technique (KWL- What you Know, What you will Learn, What you have learned). • DOL 1,2,3 • Teacher will show one video related to this topic • Students will name some materials that can be burnt and those which burn with a flame. Discussion of topic through Collaborative Learning: 15 min (Critical Thinking and Problem Solving) • Think, pair share • Students in group of 5 students each will carry out activity 6.1 Guided practice: 10 min • Discussion with students and explanation of the term combustion. 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
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.
Self Study, Home Work, Assignments	Independent Practice: worksheet
Assessments	Assignment
Topic	DAY 2 -Process of burning
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of burning which students had already learnt in classes VII and VIII
Assessment of qualifying knowledge	Recapitulation by asking questions based on previous day's learning with the help of fish bowl strategy Knowledge testing by asking students various questions on things which burn.
Objective	Students will be able to explain the term combustion and relate it with daily life.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to Critically analyse the importance of the process of combustion in daily life.
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 find the different substances which undergo combustion and act as a fuel. - 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 the process of burning in our day to day lives? - Explain the process of burning ? - What are the conditions required for burning substances ? 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 -Ignition temperature
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of the fact that burning can only take place at a specified temperature.
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous day learning
Objective	Students will be able to explain the term ignition temperature and identify its use in daily life.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to develop the ability to analyze and understand the importance of ignition temperature.
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 shareStudents in groups of six will discuss the importance of ignition temperature for substances to burn in their groups. They will be asked to find out ignition temperature of substances which catch fire easily. • Activity Discussion on ignition temperature and examples from day to day life which can be explained on the basis of ignition temperature. Students will write the answer of reasoning questions in their note books. 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 - Requirements for a substance to reach ignition temperature
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of combustion and combustible substances.
Assessment of qualifying knowledge	Knowledge testing by asking students what is the need to reach ignition temperature?
Objective	Know the necessary requirements for a substance to reach ignition temperature
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to develop the ability to analyze and understand the need to reach ignition temperature.
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 different requirements to reach ignition temperature. Teaching strategy – Demo by teacher, Lab activity, 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 by asking them to prepare questions based on the topic.

Self Study, Home Work, Assignments	Independent Practice: worksheet
Assessments	Questioning

Topic	DAY 5-How do we control fire
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of methods required for fire control.
Assessment of qualifying knowledge	Knowledge testing by asking students to write the different methods used for fire control.
Objective	Students will be able to explain the term fire fighting.
Learning Outcomes	SKILLS AND COMPETENCIES- <i>Students would be able to effectively interpret</i> various fire fighting methods.
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 prepare presentation on allotted topics. Each group will be given 5 minutes to give presentation. • Group 1- Combustion • Group 2 – Combustible substances • Group 3 –Non Combustible substances • Group 4 –Ignition Temperature. • Group 5 - Requirements to reach Ignition Temperature • Group 6- Applications of burning Presentation by group 1 followed by discussion Guided practice: 5 min Students will write the chemical equations for the reactions Independent Practice: Worksheet 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	Independent Practice: Worksheet

Work, Assignments	
Assessments	Oral Test
Topic	DAY 6- Types of combustion
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of substances which undergo combustion.
Assessment of qualifying knowledge	Knowledge testing by asking students to make the list of burning substances.
Objective	Students will be able to explain different types of combustion.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to - Critically analyse the combustion of various substances and categorise them. - 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 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-Flame
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of different types of flame produced by burning substances.
Assessment of qualifying knowledge	Recording of the observations made in lab by observing candle flame.
Objective	Students will be able to define flame. They will also relate this term with flames produced by different combustible substances.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to develop the ability to analyze and classify them into different zones.
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 Character building) Teaching strategy – Discussion and tabulation Instructional Input : Teacher will explain the identification of different zones of candle flame. 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
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: worksheets
Assessments	Observations recorded in the worksheet
Topic	DAY 8 Fuel & Fuel efficiency
Class Transaction	40 min each
Pre-requisite for	This topic requires basic knowledge of different available fuels.

the course	
Assessment of qualifying knowledge	Knowledge testing by asking students to tell some commonly used fuels.
Objective	Students will be able to identify the various commonly used fuels and reason for their usage.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to develop the ability to analyze and give characteristics of good fuel.
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, 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