

DELHI PUBLIC SCHOOL GHAZIABAD
CLASS – X
LESSON PLAN
Periodic Classification of elements

Unit	Chapter 5: Periodic Classification of elements
Class Transaction	Total: 7 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires previous knowledge of- • Elements known till date • Electronic configuration of elements • Reactivity and metallic and nonmetallic character
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 the various attempts made for organization/ classification of elements with 100% accuracy. • explain the layout of the different classification of elements with 90 % accuracy. • Interpret and describe the properties/ gradation of properties across and period and in a group with 90% accuracy. • DOL 1, 2, 3, 4
Learning Outcomes	<u>KNOWLEDGE-</u> <i>Students will be able to understand</i> • Importance of classification and explain earlier attempts of classification of elements ,state Newlands law of Octaves, Mendeleev's periodic law, Modern Periodic law • list merit and demerits of Doberneir's and Newlands lclassification • appreciate achievements of Mendeleev's classification compare arrangement of elements in Mendeleev's periodic table and Modern Periodic Table, , <u>SKILLS AND COMPETENCIES</u> - <i>Students would be able to</i> 1. Critically analyse and identify the position of an element in the periodic table based on their electronic configuration. 2. Predict the variation in attributes of elements based on the movement and position in the periodic table 3. Interact with peers and discuss different topics, develop critical thinking and collaboration in the process 4. Answer knowledge, understanding, application and diagrammatic skill based questions based on the topic.
Transaction Methodology (The teacher can	Transaction would proceed in the following manner- Brain Storming-The class would start with a discussion on what the

use the mentioned techniques, wherever applicable, and can use any other too.)	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. Active learning- (KWL- <i>What you Know, What you will Learn, What you have learned</i>).. (Critical thinking) Students will be asked how much they know about elements Students' responses will be listed on the blackboard by using the KWL chart and handouts throughout the lesson. Group learning-. (Communication, Collaboration) <i>Circle the Sage</i>; Think, pair share; Group work Differentiation- (Character, Citizenship) Interest centers or interest group. Independent study Questioning- <i>Multiple level question</i>- Teacher will prepare a list of questions on different topics and will ask these questions during discussions. (Critical thinking, Communication) <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,
Resources	Text Book: NCERT text book for science Reference Book -CBSE Exemplar 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	3 UNIT TESTS (20, 30, 30).....80 Marks MID TERM EXAMINATION.....80 Marks HALF YEARLY EXAMINATION.....80 Marks PRE BOARD-I EXAMINATION80 Marks PRE BOARD-II EXAMINATION.....80 Marks ANNUAL BOARD EXAMINATION.....80 Marks PERIODIC TEST By administering pen paper test we assess creativity and critical thinking. Average of the best two tests to be taken that will have a weightage of 10 marks. Best 2 Tests out of: Units tests, Midterm examination, Half Yearly examination. INTERNAL ASSESSMENT20 Marks Periodical Test 10 Marks By administering pen paper test we assess creativity and critical thinking. Subject Enrichment 05 Marks With the help of subject enrichment activities we assess communication ,collaboration, character building and citizenship Note Book Submission 05 Marks By writing the answers of three levels of 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> • HOTS • Encouragement for referring other resources <i>For weak students:</i> • NCERT 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
Marks	The weightage would be given by CBSE.
	Following questions will be asked to check students' understanding 1. State Modern Periodic Law. 2. Describe merits and demerits of Mendeleev's classification 3. On the basis of the periodic classification, identify each set belonging to either a group or a period: (a) Na, Mg, Cl (b) Na, K, Rb (c) N, B, C(d) Ne, He, Ar 4. What were the limitations of Newlands' classification? 5. How do the electronegative character and electropositive character vary across the period. Explain with reason.

Topic	DAY 1- Döbereiner's Triads
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of elements (metals and non metals) which students had already learnt in class VIII
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Describe the various attempts made for classification of elements with 100% accuracy.
Learning Outcomes	<i>Students will be able to understand</i> - Döbereiner's classification - Analyse its merits and demerits
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 * Technique (KWL- <i>What you Know, What you will Learn, What you have learned</i>).. (Critical thinking) Students will be asked how much they know about elements. Students' responses will be listed on the blackboard by using the KWL chart and handouts throughout the lesson. DOL 1, 2, 3 Discussion of topic through Collaborative Learning: 15 min (Critical Thinking and Problem Solving) Flash card activity - Students will create one flash card each with the symbols of different elements with one property written on that. The students will be divided in groups and they will make attempts to organize/ classify these elements. - Students in group will read Döbereiner's classification and its merit and demerits - Class discussion / questioning supported by PPT/ Video Guided practice: 10 min Students will write Döbereiner's classification and its merit and demerits Independent Practice: NCERT and exemplar questions Closure: 5 min Involving students in summarizing the topic
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: NCERT and exemplar questions
Assessments	Response during activity
Topic	DAY 2-Newland's law of Octave
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of elements (metals and non metals) which students had already learnt in class VIII
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Describe the various attempts made for classification of elements with 100% accuracy.
Learning Outcomes	<i>Students will able to describe</i> • Newland's law of Octave and its merit and demerits <u>SKILLS AND COMPETENCIES-</u> Skills developed-Listing, compare & contrast, & interpretation , reasoning skills 21st century competencies: Collaboration, character, communication skills •
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 collaboration) Strategies- Student -teacher interaction, group work - collaborative, tabulation, Class will be divided into groups of 6 students each. • Students in group will discuss Newland's law of Octave and its merit and demerits • Group presentation on the topic • Teacher students interaction supported by PPT/ Video • questioning to check their understanding Guided practice: 10 min. Students will answer NCERT questions. Independent Practice: NCERT and exemplar 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

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Closure	Involving students in summarizing by asking them to prepare questions based on the topic.
Self Study, Home Work, Assignments	Independent Practice: NCERT and exemplar questions
Assessments	Observations and responses from activities
Topic	Day 3 –Mendeleev’s classification
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of Newland’s s classification
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Describe the various attempts made for classification of elements with 100% accuracy.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will be able to</i> Describe Mendeleev’s classification, the criteria used for classification <u>SKILLS AND COMPETENCIES</u>- Skills developed-Listing, compare & contrast, & interpretation , reasoning skills 21st century competencies: Critical thinking and problem solving , , Collaboration, character, communication skills
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 Strategies- Wipro Technique Student -teacher interaction, Think- Pair and Share, group work - collaborative, tabulation, DOL 1, 2, 3 Discussion of topic through Collaborative Learning: 20 min (Critical Thinking, collaboration and communication) - Students in group will discuss Mendeleev’s classification, the criteria used for classification - Teacher students interaction supported by PPT/ Video - Teacher will ask questions to to check their understanding Guided practice: 10 min Relevant NCERT Questions Closure: 5 min

	Summarization by students Independent Practice -Students will complete related questions of NCERT and exemplar
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: NCERT and exemplar questions
Assessments	Observations and responses from activities
Topic	DAY 4 – Merits and demerits of Mendeleev’s Classification
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of Mendeleev’s Classification
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Students will be able to appreciate merits of Mendeleev’s Classification
Learning Outcomes	<u>KNOWLEDGE</u> - <i>Students will know and describe</i> Merits and demerits of Mendeleev’s Classification <u>SKILLS AND COMPETENCIES</u> - <i>Students would be able to</i> to appreciate the achievement of Mendeleev’s Classification and analyze its drawbacks Skills developed -Listing, compare & contrast, & interpretation , reasoning skills 21st century competencies : Critical thinking and problem solving , Collaboration, character, communication skills
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) Strategies- Think, pair and share Students in pair will discuss Merits and demerits of Mendeleev’s

	Classification and note down them in copy - Teacher students interaction supported by PPT/ Video - Teacher will ask questions to to check their understanding Guided practice: 10 min Relevant NCERT Questions Closure: 5 min Summarization by students Independent Practice-Students will complete related questions of NCERT and exemplar \
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: NCERT and exemplar questions
Assessments	Questioning

Topic	DAY 5- Modern periodic table
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of elements (metals and non metals) which students had already learnt in class VIII
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Describe the various attempts made for classification of elements with 100% accuracy.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will be able to describe</i> Modern periodic law and layout of Modern periodic table <u>SKILLS AND COMPETENCIES</u>- Students will be Critically analyse and identify the position of an element in the periodic table based on their electronic configuration. Skills developed-Listing, compare & contrast, & interpretation , reasoning skills 21st century competencies: Critical thinking and problem solving , Collaboration, character, communication skills
Transaction Methodology (The teacher can	Transaction would proceed in the following manner- Anticipatory Set: 5 min Recapitulation by asking questions based on previous day's

use the mentioned techniques, wherever applicable, and can use any other too.)	learning Student -teacher interaction, group work - collaborative, tabulation, DOL 1, 2, 3 Discussion of topic through Collaborative Learning: <u>25 min</u> (Critical Thinking and Problem Solving, collaboration) - Students in group will discuss Modern periodic law and layout of Modern periodic table - Group presentation on the topic - Teacher students interaction supported by PPT/ Video - questioning to check their understanding Guided practice: <u>10 min</u> Relevant NCERT Questions Closure: <u>5 min</u> Summarization by students Independent Practice-Students will complete related questions of NCERT and exemplar
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: NCERT and exemplar questions
Assessments	Observations and responses from activities
Topic	DAY 6-Trends in modern periodic table
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of modern periodic table
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Students will be able to explain the variation in properties in a period and a group in modern periodic table
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and describe</i> Atomic size, metallic and non metallic character, reactivity and valency • <u>SKILLS AND COMPETENCIES</u>- <i>Students would be able to reason effectively for variation of Atomic size, metallic and non metallic</i>

	character, reactivity and valency along a period and down in a group
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 Wipro Technique Student -teacher interaction, Think- Pair and Share, group work - collaborative, tabulation, DOL 1, 2, 3,4 Discussion of topic through Collaborative Learning: 20 min • (Critical Thinking, collaboration, communication and character) • Students in pairss will discuss <i>variation of Atomic size, metallic and non metallic character, reactivity and valency along a period and down in a group</i> • presentation on the topic • Teacher students interaction / questioning to check their understanding supported by PPT/ Video Guided practice: 10 min • Students will tabulate <i>variation of Atomic size, metallic and non metallic character, reactivity and valency along a period and down in a group</i> Closure: 5 min Summarization by students Independent Practice-Students will complete related questions of NCERT and exemplar questions
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: NCERT and exemplar questions
Assessments	Oral Test
Topic	Day 7-Closure
	CLOSURE ○ Summarizing the lesson by mind mapping. ○ Class test and worksheet based on the lesson.