

DELHI PUBLIC SCHOOL GHAZIABAD

CLASS – X

LESSON PLAN

Chapter 15: Our Environment

Unit	Chapter 15: Our Environment
Class Transaction	Total: 6 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires previous knowledge of- • Waste and its types • Food habits of different plants and animals
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 biodegradable and non- biodegradable waste with 100% accuracy. • write the definitions of Biosphere, ecosystem, biotic and abiotic components with 90 % accuracy. • Interpret and describe the 10% law giving examples with 90% accuracy. • DOL 1, 2, 3, 4
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will able to describe</i> 1. Biodegradable and non-biodegradable waste 2. Food chain and Food web 3. Trophic levels and 10% law 4. Biological magnification <u>SKILLS AND COMPETENCIES</u> - <i>Students would be able to</i> 1. Critically analyse and compare biodegradable and non-biodegradable waste 2. Predict the effect of removal of organism of a trophic level on previous and next trophic level 3. Draw food chain and food web for given organisms 4. Interact with peers and discuss 10% law of energy and Biological magnification and develop critical thinking and collaboration in the process 5. Built character and citizenship amongst themselves by discussing /communicating the importance of proper management of waste in their daily life.
Transaction Methodology (The teacher can use the mentioned techniques,	Transaction would proceed in the following manner- Brain Storming-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

wherever applicable, and can use any other too.)	that they would be studying. Active learning- Think, pair and share Group learning- (Communication, Collaboration) Jigsaw / Group presentation Differentiation- (Character, Citizenship) Students will prepare a presentation to make people aware about proper management of different types of wastes and to save environment Questioning- Multiple level question- Teacher will prepare a list of questions on different topics and will ask these questions during discussions. (Critical thinking, Communication) 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 Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table, compare-contrast matrix), surveys
Resources	Text Book: NCERT text book for science Reference Book -CBSE Exemplar Sample papers / last years paper PPT/ Video
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: Assessment Parameters: 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 to be done • 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 understanding of students 1. What term do you use for trophic levels comprising of: a) Organisms that make their own food? b) Animals feeding on plant matter only c) Organisms breaking down dead plant and animal bodies 2. Differentiate between a food chain and a food web. Which one of these is more stable and why? 3. What factor has caused the depletion of the ozone layer? What are the harmful effects of the depletion of this layer? 4. Make a food chain operating in an aquatic ecosystem. Explain why it cannot have more than 5 or 6 trophic levels? 5. Study the following food chains: Grass → sheep/Goat → Man Algae → fish → Man a) Who is the ultimate sufferer of using pesticides like DDT on land and in water? Give reason for your answer. b) If 1000J of energy is available at the producer level in each of the above food chain, what amount of energy will be available to man? c) In view of the above, comment whether shifting man's position from trophic level 3 to trophic level 2 will cause any change in the amount of pesticide and energy that he receives in the food chain.
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Topic	DAY 1- Waste –Biodegradable and non bio degradable
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of waste and their types 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	<i>Students will be able to</i> compare biodegradable and non bio degradable wastes
Learning Outcomes	<u>KNOWLEDGE-</u> <i>Students will be to</i> - compare Biodegradable and non bio degradable wastes <u>SKILLS AND COMPETENCIES-</u> <i>Students will be able to</i> - Critically analyse and discuss effect of Biodegradable and non bio degradable waste on environment 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: <u>10 min</u> * Facilitator asks the given set of questions- - What is our Environment? - How do we influence our Environment? - Why is it necessary to protect the Environment? DOL 1, 2, 3 Discussion of topic through Collaborative Learning: <u>15 min</u> (Critical Thinking and Problem Solving, collaboration) Wipro Technique Jigsaw / Group presentation Student -teacher interaction, group work - collaborative, tabulation, Activity- Class will be divided into six groups of 6 students each and following topics will be allotted Group 1: Biodegradable and non bio degradable wastes Group 2:Ecosystem

	Group 3: Trophic levels Group 4: Food chain and food web Group 5: 10 % rule of energy and biological magnification Group 6: Proper management of waste They will be given time to prepare the topic . then whole group will give presentation Smart class usage- PPT on waste generated by us to provoke thinking. - Group 1 will give presentation on Biodegradable and non biodegradable wastes - Class discussion / questioning supported by PPT/ Video - Teacher's role as a facilitator Guided practice: 10 min - Students in group will compare Biodegradable and non biodegradable wastes - Discuss effect of Biodegradable and non biodegradable waste on environment - Make compare contrast matrix on the topic 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 by asking them to prepare questions based on the topic.
Self Study, Home Work, Assignments	Independent Practice: NCERT and exemplar questions
Assessments	Response during activity
Topic	DAY 2-Ecosystem
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of environment and its components
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Students will be able to describe ecosystem and its components
Learning Outcomes	<u>KNOWLEDGE</u>- Students will able to describe ecosystem and its components give examples of natural and artificial ecosystem and justify their answers <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 *Teacher asks questions based on previous day learning DOL 1, 2, 3 Discussion of topic through Collaborative Learning: 20 min (Critical Thinking, communication and collaboration) Wipro Technique Jigsaw / Group presentation Student -teacher interaction, group work - collaborative, tabulation, • Group 2 will give presentation on Ecosystem • Class discussion / questioning supported by PPT/ Video • Teacher's role as a facilitator Guided practice: 10 min. Students in group will describe ecosystem, its biotic and abiotic components and their importance list examples of natural and artificial ecosystem Independent Practice: NCERT and exemplar questions Closure: 5 min Involving students in summarization
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 3 –Trophic levels
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of classification of animals on the basis their food habits
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 term Trophic levels and give them specific names
Learning Outcomes	<u>KNOWLEDGE-</u> <i>Students will be able to</i> • Assign specific names to different trophic levels, their

	interdependence and their importance in an ecosystem <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 DOL 1, 2, 3 Discussion of topic through Collaborative Learning: 20 min (Critical Thinking, collaboration and communication) Wipro Technique Jigsaw / Group presentation Student -teacher interaction, group work - collaborative, tabulation, • Group 3 will give presentation on trophic levels • Class discussion / questioning supported by PPT/ Video • Teacher's role as a facilitator Guided practice: 10 min Students in group will discuss different trophic levels, producers, herbivores etc. and their importance in an ecosystem 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 – Food chains and food webs
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of food habits of animals
Assessment of	Knowledge testing by asking questions based on previous knowledge by

qualifying knowledge	teacher in class
Objective	Students will be able to Draw and compare Food chains and food webs
Learning Outcomes	<u>KNOWLEDGE</u> - Students will be able to define the terms Food chains and food webs <u>SKILLS AND COMPETENCIES</u> - Students will be able to Draw Terrestrial and aquatic Food chains Analyse and compare Food chains and food webs Skills developed -compare & contrast, & interpretation, reasoning skills 21st century competencies : Critical thinking and problem solving, Collaboration, 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) Wipro Technique Jigsaw / Group presentation Student-teacher interaction, group work - collaborative, tabulation, - Students in group will discuss Food chains and food webs - Group 4 presentation on the topic - Teacher students interaction / questioning to check their understanding supported by PPT/ Video - Teacher's role as a facilitator Guided practice: 10 min Students will compare Food chains and food webs 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- 10 % rule of energy and biological magnification
Class Transaction	40 min each)
Pre-requisite for the course	This topic requires basic knowledge of food habits of animals
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Students will be able to explain 10 % rule of energy and biological magnification
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will be able to compare amount of energy and harmful chemicals at different trophic levels</i> <u>SKILLS AND COMPETENCIES</u>- Skills developed- 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: <u>5 min</u> Recapitulation by asking questions based on previous day's learning DOL 1, 2, 3 Discussion of topic through Collaborative Learning: <u>25 min</u> (Critical Thinking and Problem Solving, collaboration) Wipro Technique Jigsaw / Group presentation Student -teacher interaction, , group work - collaborative, tabulation, - Students in group will discuss 10 % rule of energy and biological magnification - Group 5 presentation on the topic - Teacher students interaction / questioning to check their understanding r supported by PPT/ Video - Teacher's role as a facilitator 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-Proper management of waste
Class Transaction	40 min each
Pre-requisite for the course	This topic requires basic knowledge of different types of wastes
Assessment of qualifying knowledge	Knowledge testing by asking questions based on previous knowledge by teacher in class
Objective	Students will be able to suggest proper management of waste
Learning Outcomes	<u>KNOWLEDGE</u>- Students will be able to Suggest creatively ways of disposal of different types of wastes • <u>SKILLS AND COMPETENCIES</u>- Skills developed- compare & contrast, & interpretation , reasoning skills 21st century competencies: Creativity , Collaboration, character, citizenship and 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, 3,4 Discussion of topic through Collaborative Learning: 20 min (Creativity ,collaboration, communication and character) Wipro Technique Group presentation , group work - collaborative, tabulation, Students in group of 8 will discuss ways for disposal of biodegradable and non biodegradable waste. They will prepare a presentation to make people aware about proper management of different types of wastes and to save environment Guided practice: 10 min NCERT Questions Closure: 5 min Summarization by students Independent Practice-Students will complete related questions of exemplar
Resources	Text Book:

	CERT 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	Response during activity
	Closure of chapter by mind mapping and open discussion