

LESSON PLAN
CLASS – VII
CHAPTER 9: SOIL

Unit	Chapter 9: Soil
Class Transaction	Total: 9 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires previous knowledge of- • soil • It's importance • types of soil
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 identify various components with 90% accuracy. • Given the reading of the topic, the learners will be able to understand the concept of soil profile, different soil types & their properties, explain it with 90% accuracy.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will be able to understand</i> 1. Characteristics of different components of soil. 2. define the terms- soil profile, weathering, humus and soil erosion. 3. Different types of soil and their properties. 4. Soil and crop <u>SKILLS AND COMPETENCIES</u> - <i>Students would be able to</i> 1. Discuss the characteristics of different layers in soil profile and its formation in group and develop collaboration in the process. 2. Critically analyze and compare characteristics of different types of soil 3. Develop the ability to apply concepts learnt to suggest the crop which can be grown in a particular type of soil
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- 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 that they would be studying. Active learning- Wipro Technique (KWL- What you Know, What you will Learn, What you have learned).. (Critical thinking) Students will be asked how much they know about importance of soil Students' responses will be listed on the blackboard by using the KWL chart Group learning-. (Communication, Collaboration) Think, pair and share, Group work Questioning- e, pause, pounce and bounce, <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) 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), silent/ loud reading, collaborative learning,
Resources	NCERT Science CBSE Exemplar
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 understanding, writing skill and concept development. 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 2 mark Presentation/ Neatness (creativity) 2 mark Content (critical thinking and creativity) 6 mark 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	Unit tests: 1. Unit Test 1 (25 marks) 2. Unit Test 2 (25 marks) 3. Unit Test 3 (25 marks) 4. Unit Test 4 (25 marks) Half Yearly Exam (80 marks) Annual Exam (80 marks) PERIODIC TEST By administering pen paper test we assess understanding, conceptual knowledge and critical thinking. INTERNAL ASSESSMENT 20 Marks Subject Enrichment 10 Marks With the help of subject enrichment activities, we assess communication, collaboration, character building and citizenship. Note Book Submission 10 Marks By writing the answers for relevant question we can assess their knowledge, critical thinking and understanding.

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> • EXEMPLAR questions to be done. • HOTS questions will be discussed. • 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.
Questions for assessment during closure	1. Why is the significance of soil for us? 2. Why do we observe different layers in soil profile? 3. Why is topsoil rich in nutrients for plants? 4. Clayey soil absorbs water and form hard lumps. Why? 5. Why do we require to check soil quality before growing crop?

Topic	DAY 1- Soil and its Significance
Class Transaction	Approx. 40 mins
Pre-requisite for the course	This topic requires Basic knowledge of soil and its components which had already learnt in previous classes.
Assessment of qualifying knowledge	Knowledge testing by asking them to name the components of soil from the sample taken from school garden.
Objective	Student will discuss and interpret the significance of soil in our lives.
Learning Outcomes	<i>Students would be able to</i> • Collaboratively work to study and enlist the significance of soil thus developing communication • Critically analyse the components of soil collected from different part of school
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>15 min</u> Facilitator asks each student to list importance of soil Students' responses will be listed on the blackboard by using the KWL chart followed by discussion Strategies- Wipro Technique (KWL- What you Know, What you will Learn, What you have learned), Demo by teacher - classroom demonstration on soil. Students observe components by hands on activity, discuss and interpret the role individual components in our life. Students also can recall the variation in composition of soil according to conditions. DOL 1,2,3 Discussion of topic through Collaborative Learning: <u>15 min</u> (Critical Thinking and Problem Solving) Students observe components of soil by hands on activity Class will be divided into groups of 8 students each. Each group will collect sample of soil from allocated area in the school like garden, playground etc. Students in group will observe and write about the living and non living things present in collected sample of soil. Each group will share it in class. Discussion on different samples of soil Guided practice- Students will complete table 9.1 And analyze, what type of soil support life in it Independent Practice: NCERT Questions Closure: <u>5 min</u> Involving students in summarization
Resources	NCERT Science CBSE Exemplar
Closure	Involving students in summarization

Self-Study, Home Work, Assignments	Independent Practice: NCERT Questions
Assessments	Assignment

Topic	DAY 2- Soil and its components
Class Transaction	Approx. 40 mins
Pre-requisite for the course	This topic requires Basic knowledge of soil and its components which had already learnt in previous classes.
Assessment of qualifying knowledge	Group Discussion
Objective	Student will be able to identify and examine the different components soil sample.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and understand and explain the terms soil, humus etc. <u>SKILLS AND COMPETENCIES</u>- <i>Students would be able to</i> • Develop observational skill and Critical thinking while studying the components of soil. • Collaboratively work and discuss in groups thus developing communication.
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> Demo by teacher - classroom demonstration on soil. Students observe and justify why is soil an important part of our daily life. Students also are able to recall the variation in composition of soil according to conditions. DOL 1,2,3 Discussion of topic through Collaborative Learning: <u>15 min</u> (Critical Thinking and Problem Solving) Think, pair share Students in pairs will observe the sample of soil brought by them using magnifying lens and write components of soil Guided practice: <u>10 min</u> Students will write the components present in soil. Independent Practice: Students in group will come prepared with activity 9.2 Closure: <u>5 min</u> Involving students in summarization
Resources	NCERT Science CBSE Exemplar
Closure	Involving students in
Self-Study, Home Work, Assignments	Independent Practice: Students will be asked to bring materials required to perform activity 9.2
Assessments	Assignment

Topic	DAY 3- Soil profile
Class Transaction	Approx. 40 mins
Pre-requisite for	This topic requires basic knowledge of layer of soil.

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Assessment of qualifying knowledge	Group discussion
Objective	Students will be able to understand the term soil profile and compare different layers
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to • Critically analyse the soil profile and distinguish different layers. • Will discuss the formation of soil profile in groups and work collaboratively to explain the variation in texture.
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 8 students each, • Each group will discuss the about different layers of soil profile. (Activity 9.2) • They will be asked to identify the components which dominate in each profile. Teacher will draw diagram to explain soil profile Students teacher interaction. The questions from subject content will be asked to reinforce their understanding Guided practice: 10 min. Teacher will help the students to draw diagram of soil profile in their notebooks Independent Practice: EXEMPLAR Questions Closure: 5 min Involving students in summarization
Resources	NCERT Science CBSE Exemplar
Closure	Involving students in summarization
Self Study, Home Work, Assignments	Independent Practice: EXEMPLAR Questions
Assessments	Peer assessment

Topic	Day 4&5 – Types of soil and their properties.
Class Transaction	Approx. 40 mins each
Pre-requisite for the course	This topic requires basic knowledge of different types of soil.
Assessment of qualifying knowledge	Group discussion
Objective	Students will be able to explain the properties of different soil
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to: develop the ability to analyze and differentiate between different soil types to study their contrasting characters.
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) Students will be divided into groups and will discuss *Soil type on the basis of particle size * Comparison of different type of soil on the basis of particle size, amount of air, water retention capacity etc.. Students in group will present their points on the soil type and second group will add new point. Results to be tabulated in the form of graphic organizers compare contrast matrix. Role of the teacher as facilitator Students will be asked to bring materials required to perform activity 9.4 Teaching strategy – Group work, Discussion, explanation by teacher Guided practice: 10 min Relevant NCERT Questions Closure: 5 min Summarization by students Independent Practice -Students will complete related questions of EXEMPLAR
Resources	NCERT Science CBSE Exemplar
Closure	Involving students in summarizationthe topic
Self-Study, Home Work, Assignments	Independent Practice: EXEMPLAR Questions
Assessments	Quiz

Topic	Day 6 – Properties of soil. percolation rate
Class Transaction	Approx. 40 mins
Pre-requisite for the course	This topic requires basic knowledge of different types of soil.
Assessment of qualifying knowledge	Group discussion
Objective	Students will be able to explain the properties of soil like percolation rate for different soil types.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to: • Understand the concept of percolation rate and calculate percolation rate of different soils • develop the ability to analyze and differentiate between different soil types.
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) Teacher will discuss activity 9.4 to find percolation rate of water in given sample of soil. Students will be divided into groups. Different groups will be finding percolation rate of water in soil found at different places like garden, playground etc under teacher's supervision. They will sit in their groups and find percolation rate using formula Class discussion to compare percolation rate in garden soil and playground soil Teaching strategy – Experimentation Guided practice: 10 min Relevant NCERT Questions. Closure: 5 min Summarization by students Independent Practice-Students will complete related questions of EXEMPLAR.
Resources	NCERT Science CBSE Exemplar
Closure	Involving students in summarization of the the topic
Self Study, Home Work, Assignments	Independent Practice: EXEMPLAR Questions
Assessments	Quiz

Topic	Day 7 – Properties of soil. Soil moisture, water holding capacity
Class Transaction	Approx. 40 mins
Pre-requisite for the course	This topic requires basic knowledge of different types of soil.
Assessment of qualifying knowledge	Group discussion
Objective	Students will be able to explain the properties of soil like Soil moisture, water holding capacity for different soil types.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to: • Understand the concept of Soil moisture, water holding capacity. • develop the ability to analyze and differentiate between different soil types.
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) Anticipatory set- Question based of previous day learning Discussion of topic through Collaborative Learning: 20 min (Critical Thinking and Problem Solving, collaboration and communication) Teaching strategy – Demo by teacher, discussion Teacher give demo to show the presence of moisture in the soil activity 9.5 and absorption of water by soil Activity 9.6 Students in groups will record the observations and conclusions Students in group will present their points on properties of soil and other group will add new points. Results to be tabulated in the form of graphic organizers compare contrast matrix. Role of the teacher as facilitator Guided practice: 10 min Relevant NCERT Questions. Closure: 5 min Summarization by students Independent Practice-Students will complete compare contrast matrix. On properties os different types of soil

Topic	Day 7 – Soil quality and crop.
Class Transaction	Approx. 40 min
Pre-requisite for the course	This topic requires basic knowledge of different types of soil and their components.
Assessment of qualifying knowledge	Group discussion
Objective	Students will be able to understand and explain the relation between properties of different soil types and crops grown in them
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to: • Analyse knowledge about different soil types and then choose suitable crop for soil type. • Understanding the concept of soil quality.
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- one type of soil and the crop which it will support. They will be asked to identify the properties of that soil type. then choose suitable crop for soil type. Group will present their points on the soil type and crop and other groups will add new point. Class discussion followed by questioning. Teaching strategy – Discussion, group work Guided practice- Students will complete related questions of NCERT Independent Practice- Students will complete related questions of EXEMPLAR Closure: 5 min Summarization by students
Resources	NCERT Science CBSE Exemplar
Closure	Involving students in summarization of the topic
Self-Study, Home Work, Assignments	Independent Practice: EXEMPLAR Questions
Assessments	Quiz
Topic	DAY 08: Closure by mind mapping and open discussion

Topic	DAY 09:Class test