

CLASS – VII
LESSON PLAN
CHAPTER-12:REPRODUCTION IN PLANTS

Unit	Biology (Chapter 12:Reproduction In Plants)
Class Transaction	Total: 10 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Basic knowledge of how organism multiply. 2. Basic knowledge of different parts of a plant which students had already learnt in class VI.
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. Group Discussion 4. HW notebook 5. Subject Enrichment Activities
Objective	Students will be able to:- *Define the terms- Asexual reproduction, Sexual reproduction, Pollination and Fertilisation. *Explain the different types of Asexual reproduction * Explain sexual reproduction in plants *Explain different modes of seed dispersal
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and understand</i> 1. The terms : Reproduction, Asexual reproduction, Sexual reproduction, Vegetative propagation, Cutting, Budding, Fragmentation, Spore formation, Sexual reproduction, Pollination, Fertilization, Fruits, Seed formation and Seed dispersal 2. Function of different parts of plants in the process of Reproduction. 3. Why reproduction is an important life process? 4. The difference between asexual reproduction and sexual reproduction. 5. Mode of dispersal of seeds. <u>SKILLS</u>- <i>Students would be able to</i> 1.Collaborate with each other to explain the parts of flower 2. Critically analyse ‘the importance of reproduction’. 3. Use analytical and critical skills to find why seeds are dispersed ? 4. What is the importance of asexual reproduction? 5. Built character amongst themselves by discussing /communicating the importance of reproduction for the continuity of life on earth.

	Attitudes and beliefs- <i>Students will be able to</i> Develop citizenship by visualizing and observing the importance and the need of reproduction in plants, and sensitize others how trees are helping in maintaining the balance of nature.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	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. <i>Introduction of the topic</i>- ppt and Digital Content would be shared <i>Guided practice followed by Independent Practice</i>- NCERT questions to be discussed in the classroom. Techniques to be used: Independent reading Quiz Drawing diagrams MCQ Peer Assessment Lab Activities Graphic Organizers Any Other Group learning- The class will be divided in the group of 5 students. <i>Circle the Sage</i>- The question will be asked by the teacher about how organisms multiply in number and the students who knows the answer will stand in various corners of the room. (Communication, Collaboration) Differentiation- The students in a group of 10 will be presenting a skit on what is the importance of reproduction for the continuity of life on earth. (Character, Citizenship) Questioning- Multiple <i>level question</i>- Teacher will prepare a list of question on the topic “Why reproduction in plant is a complex process”. (Critical thinking, Communication)
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Self Study, Home	Independent Practice: Students would do the questions in their H.W notebooks as mentioned in the monthly planner by which we can assess

Work, Assignments	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 INTERNAL ASSESSMENTS.....40 Marks PERIODIC TEST By administering pen papertest we assess creativity and critical thinking. By administering pen papertest 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 (Skit on what is the importance of reproduction for the continuity of life on earth). Note Book Submission 10 Marks By writing the answers of three levels of spiral question we can assess their knowledge (Level 1 questions) critical thinking(Level 2 questions), creativity(Level 3 questions) Note Book Submission 10 Marks QUESTIONS 1. Describe the different methods of asexual reproduction with examples. 2. Differentiate between asexual and sexual reproduction. 3. Define pollination. Differentiate between self-pollination and cross pollination. 4. Describe the various ways by which seeds are dispersed. 5. Draw a neat and well labeled diagram to show the reproductive parts of a flower.
Addressing	Due to various social backgrounds and multiple intelligences, the classroom

Classroom Diversity	might be a diverse arena. The following techniques can be used for various groups: <i>For gifted students:</i> • High order thinking questions to be done • Encouragement for referring other resources <i>For weak students:</i> • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes <i>For differently abled students:</i> • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
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Topic	DAY 1-Introduction
Class Transaction	(40 min each)
Pre-requisite for the course	This topic requires basic knowledge of how organisms multiply and what is the basic need of multiplication of organisms which they had already studied in class VI
Assessment of qualifying knowledge	Facilitator will ask few questions regarding reproduction. 1. List the various characteristics of a living organism? 2. Why is there a need for multiplication of organisms?
Objective	Student will be able to understand what the need of reproduction is and what the modes of reproduction are.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and understand</i> The importance of reproduction. Appreciate the need of reproduction and the modes of reproduction. <u>SKILLS AND COMPETENCIES</u>- <i>Students would be able to</i> Critically analyse the role of various parts of plants in the process of reproduction.
Transaction Methodology (The teacher can use the mentioned techniques,	Transaction would proceed in the following manner- Group learning- The class will be divided in the group of 5 students. <i>Circle the Sage</i>- The question will be asked by the teacher about how organisms multiply in number and the students who knows the answer will stand in various corners of the room. (Communication, Collaboration <i>Guided practice followed by Independent Practice</i>- NCERT questions to be discussed in the classroom.

wherever applicable, and can use any other too.)	Techniques to be used: 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 CBSE Exemplar
Closure	Involving students in summarizing by asking them to prepare questions based on the topic.
Self Study, Home Work, Assignments	Independent Practice: Concept based worksheetQuestions
Assessments	Oral quiz
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> • High order thinking questions to be done • Encouragement for referring other resources <i>For weak students:</i> • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes <i>For differently abled students:</i> • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Topic	DAY 2 Asexual reproduction- Vegetative propagation
Class Transaction	40 min
Pre-requisite for	This topic requires basic knowledge of different ways by which organisms

the course	reproduces asexually.
Assessment of qualifying knowledge	Facilitator asks the students to write the modes of asexual reproduction they heard about or seen by observation around them in the garden/kitchen garden..
Objective	Given the content (topic) the students will be able to discuss about the vegetative propagation
Learning Outcomes	KNOWLEDGE- Students will know and understand Students will be able to classify the different kinds of vegetative propagation. SKILLS AND COMPETENCIES- Students would be able to Communicate with each other about the different kinds of vegetative propagation.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Techniques to be used: Quiz Wipro- G.O.s(compare- contrast matrix) Daily Practice Problem Student -teacher interaction, silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for Science. Reference Book
Closure	compare- contrast matrix to be drawn on the board with the help of the students
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W notebooks as mentioned in the monthly planner. 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.....1 mark Content.....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	Assessment of the compare and contrast matrix diagram
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: For gifted students: • High order thinking questions to be done • Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students: • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.
Topic	DAY 3 Budding, Fragmentation and Spore formation
Class Transaction	40 min
Pre-requisite for the course	This topic requires Basic knowledge of the organs involved in the asexual reproduction.
Assessment of qualifying knowledge	The class will be divided into different groups and teacher will ask the question as to what happens to the plants which are not vegetatively propagated.
Objective	Given the content (topic) the students will be able to discuss about Budding, Fragmentation and Spore formation.
Learning Outcomes	KNOWLEDGE- Students will know and understand Students will be able to explain Budding, Fragmentation and Spore formation Understand the SKILLS AND COMPETENCIES- Students would be able to Communicate with each other about the Budding, Fragmentation and Spore formation.
Transaction Methodology (The teacher can use the	Transaction would proceed in the following manner- Group learning (BrainStorming)- The class will be divided into group of 4 students and then will be allowed to visit the school garden with the teacher students will be asked to discuss the Budding, Fragmentation and Spore formation with example.

mentioned techniques, wherever applicable, and can use any other too.)	Students will be asked to record their observation regarding budding and draw the conclusion (Communication, Collaboration) Techniques to be used: Visit of school garden Daily Practice Problem Student -teacher interaction, silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Muddiest point by the teacher
Self Study, Home Work, Assignments	Concept based worksheet questions
Assessments	After the demonstration and explanation of the activity an MCQ based work sheet will be given to students to check their understanding for the concept
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: For gifted students: • High order thinking questions to be done • Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students: • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.
Topic	DAY 4 Sexual Reproduction in Plants- Unisexual and bisexual flowers

Class Transaction	40 min
Pre-requisite for the course	This topic requires Basic knowledge of the reproductive part of a flowering plant
Assessment of qualifying knowledge	The class will be divided into different groups and teacher will be provided with different flowers ask the students to separate the flower in to categories as per their observation.
Objective	Given the content (topic) the students will be able to discuss the Unisexual and bisexual flower.
Learning Outcomes	KNOWLEDGE- Students will know and understand Students will be able to Understand the Unisexual and bisexual flowers SKILLS AND COMPETENCIES- Students would be able to Communicate with each other about the Unisexual and bisexual flowers. Answer knowledge, understanding, application and diagrammatic skill based questions based 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- Group learning- The class will be divided in the group of 5 students. <i>Circle the Sage</i>- The class will be divided into different groups and teacher will be provided with different flowers and ask the students to separate the flower in to categories as per their observation .The question will be asked by the teacher about classification of flowers and the students who knows the answer will stand in various corners of the room. (Communication, Collaboration) Techniques to be used: Quiz Daily Practice Problem Student -teacher interaction, silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Summarisation by students with the muddiest point by the teacher
Self Study, Home Work, Assignments	Independent Practice-

Assessments	One minute test
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: For gifted students: • High order thinking questions to be done • Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students: • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.
Topic	DAY 5 - Parts of a Flower
Class Transaction	40 min
Pre-requisite for the course	This topic requires Basic knowledge of the reproductive part of a flowering plant
Assessment of qualifying knowledge	- The class will be divided into different groups and teacher will be provided with a bisexual flowers (Hibiscus) and ask the students to separate the parts of flower.
Objective	Given the content (topic) the students will be able to discuss the parts of flower.
Learning Outcomes	KNOWLEDGE- Students will know and understand Students will be able to Understand the parts of flower SKILLS AND COMPETENCIES- Students would be able to Communicate with each other about the parts of flower. Application and diagrammatic skill based questions on the topic.
Transaction Methodology (The teacher	Transaction would proceed in the following manner- Group learning- The question will be asked by the teacher about the parts of flower (Communication, Collaboration)

can use the mentioned techniques, wherever applicable, and can use any other too.)	Techniques to be used: Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix),
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	Summarisation by students with the muddiest point by the teacher
Self Study, Home Work, Assignments	Independent Practice-Diagram of the parts of flower.
Assessments	Peer Assessment of diagram of the parts of flower
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: For gifted students: • High order thinking questions to be done • Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students: • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
	DAY 6 - Pollination
	40 min
	This topic requires Basic knowledge of how pollination happens in plants.
Marks	The class will be divided into different groups and teacher will ask the group to list the agents of transfer of pollen grains in to stigma of flowers.

Topic	Given the content (topic) the students will be able to discuss about the process of self-pollination and cross pollination and the agents involved in it.
Class Transaction	40 min
Pre-requisite for the course	This topic requires Basic knowledge of how pollination happens in plants.
Assessment of qualifying knowledge	Write down the name of two methods of Pollination.
Objective	Given the content (topic) the students will be able to understand the importance of pollination and the types of pollination.
Learning Outcomes	SKILLS AND COMPETENCIES- Students would be able to Collaborate and communicate with each other about the importance of pollination and the types of pollination.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Brain Storming-Students would be able to collaborate and communicate with each other about the importance of pollination and the types of pollination. Techniques to be used: Student -teacher interaction, collaborative learning, Techniques to be used: Quiz Student -teacher interaction, silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for Science. Reference Book CBSE Exemplar
Closure	One minute paper
Self Study, Home Work, Assignments	Practice of Questions of NCERT
Assessments	Real time feedback to students on the basis of an oral quiz
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:

	For gifted students: • High order thinking questions to be done • Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students: • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.

Topic	DAY 7 Fertilisation and seed formation
Class Transaction	40 min
Pre-requisite for the course	This topic requires Basic knowledge of how does fertilisation takes place in a flower.
Assessment of qualifying knowledge	Facilitator will ask the students to write down the process of fertilization and seed formation by plants.
Objective	Given the content (topic) the students will be able to understand the function performed by the flower- fertilization and seed formation.
Learning Outcomes	KNOWLEDGE- Students will know and understand the fertilization and seed formation.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner Techniques to be used: Quiz Daily Practice Problem Student -teacher interaction, silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for Science.

	Reference Book
Closure	Summarisation by students.
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W notebooks as mentioned in the monthly planner.
Assessments	Real time feedback to students on the basis of an oral quiz
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: For gifted students: • High order thinking questions to be done • Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students: • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.

Topic	DAY 8 Fruits
Class Transaction	40 min
Pre-requisite for the course	This topic requires Basic knowledge of kinds of fruits available around us.
Assessment of qualifying knowledge	Facilitator will ask the students to explain how the fruit is formed.
Objective	Given the content (topic) the students will be able to understand how the fruit is formed.
Learning Outcomes	KNOWLEDGE- Students will know and understand how is the fruit formed

Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner Differentiation- The students in a group of 5 will discuss how is the fruit formed Techniques to be used: Quiz Student -teacher interaction, silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for Science. Reference Book
Closure	Summarisation by students with the muddiest point by the teacher.
Self Study, Home Work, Assignments	Independent Practice: Students would do the questions in their H.W notebooks as mentioned in the monthly planner.
Assessments	Real time feedback to students on the basis of an oral quiz
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: For gifted students: • High order thinking questions to be done • Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students: • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.

Topic	DAY 9 Need for Seed dispersal
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Class Transaction	40 min
Pre-requisite for the course	This topic requires understanding of the need of seed dispersal.
Assessment of qualifying knowledge	Facilitator will ask the students to recall what happens if seeds are not dispersed?
Objective	Given the content (topic) the students will be able to understand the need of seed dispersal.
Learning Outcomes	Student will be able to critically analyse the need of seed dispersal.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner Differentiation- The students in a group of 5 will be discussing the importance and the need of seed dispersal.(Character, Citizenship) - Techniques to be used: Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), Student -teacher interaction, silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for Science. Reference Book
Closure	Summarisation by students with a one minute paper by the teacher
Self Study, Home Work, Assignments	High order thinking questions Question
Assessments	One minute test
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: For gifted students: • High order thinking questions to be done • Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students:

	• Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.

Topic	DAY 10 Methods of seed dispersal
Class Transaction	40 min
Pre-requisite for the course	This topic requires Basic knowledge of seed dispersal.
Assessment of qualifying knowledge	Facilitator will ask the students to explain the methods of seed dispersal.
Objective	Given the content (topic) the students will be able to understand the methods of seed dispersal .
Learning Outcomes	Student will be able to critically analyse the methods of seed dispersal .
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner Differentiation- The students in a group of 5 will be discussing the impact of seed dispersal. (Character, Citizenship) Techniques to be used: Wipro- G.O.s(web chart, flow chart and differentiation table, compare- contrast matrix), Student -teacher interaction, silent/ loud reading, collaborative learning, Research work/surveys
Resources	Text Book: NCERT text book for Science. Reference Book
Closure	Summarisation by students with the muddiest point by the teacher
Self Study, Home Work, Assignments	Question as per the monthly planner
Assessments	Peer assessment of oral quiz
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: For gifted students: • High order thinking questions to be done

	• Encouragement for referring other resources For weak students: • Concept based worksheet to be completed • Buddy help to be provided • Provide grade-up classes For differently abled students: • Ignore spelling mistakes. • Call parents at regular intervals • Provide grade-up classes
Marks	The weightage would be given by CBSE.