

CLASS – X
SCIENCE
LESSON PLAN
CHAPTER-9: Heredity and Evolution

Unit	Biology (Chapter 9: Heredity and Evolution)
Class Transaction	Total: 15periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Significance of reproduction 2. Basic knowledge of nucleus,chromosomes and genes which students had already learnt in class VII and VIII
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. Group Discussion 4. HW notebook 5. Activites like comparison of ear lobes to understand dominant and recessive trait.
Objective	Given the content (chapter) the learners will be able to describe the importance of variation ,how accumulation of variation leads to evolution. They can explain the various rules of inheritance given by Mendel and can work out the monohybrid and dihybrid cross. They can also understand the process of sex determination in human beings . They can appreciate the role of factors like genetic drift, natural selection and reproductive isolation etc in speciation. They can compare homologous and analogous organs , can explain the importance of fossils as the evidence of evolution and can draw the diagrams with 75% accuracy.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and understand 1. Define heredity and variation and recognize them as major factors contributing to the traits of a species. 2. Differentiate between heredity and variation. 3. Explain the monohybrid and dihybrid cross. 4. Understand the process of sex determination in human beings. 5. Differentiate between homologous and analogous organs. 6. Explain the importance of fossils as an evidence of evolution. <u>SKILLS and Competency</u> : Students would be able to

	1. Critically analyse the importance of sexual reproduction as an element of genetic variation. 2. Appreciate the important role played by factors such as natural selection, genetic drift and reproductive isolation in evolution of species. 3. Design Creative methods/ techniques by which some genetic disorder can be resolved. 4. Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place . Attitudes and beliefs- <i>Students will be able to</i> 1. Develop citizenship by visualizing and observing the given scenario(Different genetic disorders) and how to sensitize others regarding those disorders. 2. Use analytical skills(Critical thinking) to visualize the given scenario and use the concepts learnt in everyday problems like artificial selection and relate it to the vegetables available in the market etc
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. Teacher will ask few questions to introduce the topic Why children look similar to their parents? <i>Introduction of the topic</i>- PPT and Digital Content would be shared Active learning- . PMI: Analyzing Skills, Evaluating Skills on artificial selection and human evolution (Critical thinking) Group learning- The class will be divided in the group of 5 students – Brain Storming :The question will be asked by the teacher about the different evidences of evolution. (Communication, Collaboration) Carousel Review-(Provides an opportunity to generate ideas, check understanding, and raise unanswered questions on the topic fossils .Teams rotate from one poster to the next at given intervals, adding ideas.) . (Communication, Collaboration) Differentiation- The students in a group of 10 will be presenting a skit on the process of evolution and how different factors are interdependent on each other so that process of evolution can take place and how does the process of evolution and speciation helps in the process of biodiversity.

	(Character, Citizenship) Questioning- <i>Multiple level question</i>- Teacher will prepare a list of question about the laws of inheritance and sex determination and will ask these questions during discussions. (Critical thinking, Communication) <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: Quiz Daily Practice Problem MCQ Peer Assessment Lab Activities Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare- contrast matrix), silent/ loud reading, collaborative learning, Hands on experiment Experimental work Any Other
Resources	Text Book: NCERT text book for Science. Reference Book- 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 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 Subject Enrichment activity to be marked as per the given plan: Assessment Parameters: The total marks for the activity is 5 marks Hands on Experiment(creativity)----- 3 marks Content presentation(critical thinking and creativity)--- 1 mark Discipline ----- 1 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	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 , critical thinking and creativity 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> • Higher Order Thinking Skills questions • Encouragement for referring other resources <i>For weak students:</i> • 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

Marks	The weightage would be given by CBSE.
Unit	Day 1-Introduction to heredity and variation accumulation during reproduction
Class Transaction	Approx. 40 min each)
Pre-requisite for the course	This topic requires Significance of reproduction Basic knowledge of nucleus,chromosomes and genes which students had already learnt in class VII and VIII
Assessment of qualifying knowledge	Facilitator asks the students to write down an inventory of my traits in their own respective groups where they will observe their own easily observable genetic traits and compare those inventories with other students in groups
Objective	Given the content (chapter) the learners will be able to describe the importance of variation .
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and understand 1. Define heredity and variation and recognize them as major factors contributing to the traits of a species. 2. Differentiate between heredity and variation. <u>SKILLS and Competency</u> : Students would be able to 1.Critically analyse the importance of sexual reproduction as an element of genetic variation.
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. Teacher will ask few questions to introduce the topic • Why children look similar to their parents? <i>Introduction of the topic</i>- PPT and Digital Content would be shared Wipro Technique (KWL- What you Know, What you will Learn, What you have learned) Activity- The teacher will ask the students to find out whether they are having attached or free ear lobes and on the basis of this will try to explain the inheritance.
Resources	Text Book:

	NCERT text book for Science. Reference Book- CBSE Exemplar
Closure	Summarisation by students by recording down their observation of this activity in their note book.
Self Study, Home Work, Assignments	NCERT questions 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 Subject Enrichment activity to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 marks Hands on Experiment(creativity)----- 3 marks Content presentation(critical thinking and creativity)--- 1 mark Discipline ----- 1 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	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 , critical thinking and creativity 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> • Higher Order Thinking Skills questions • Encouragement for referring other resources <i>For weak students:</i> • 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
Marks	The weightage would be given by CBSE.

Topic	Day 2- Laws of inheritance
Class Transaction	approx. 40 min each)
Pre-requisite for the course	This topic basic knowledge of genes, DNA and chromosomes
Assessment of qualifying knowledge	Activities like comparison of ear lobes to understand dominant and recessive trait.
Objective	Given the content (chapter) the learners will be able to describe the importance of variation.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and understand Differentiate between heredity and variation. <u>SKILLS and Competency</u> : Students would be able to .Critically analyse the importance of sexual reproduction as an element of genetic variation.
Transaction Methodology (The teacher can use the mentioned techniques,	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

wherever applicable, and can use any other too.)	Questioning- <i>Multiple level question</i>- Teacher will prepare a list of question about the laws of inheritance and sex determination and will ask these questions during discussions. (Critical thinking, Communication) Techniques to be used: Quiz Daily Practice Problem MCQ Peer Assessment Lab Activities Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare- contrast
Resources	Text Book: NCERT text book for Science. Reference Book- CBSE Exemplar
Closure	Noting down of inheritance laws on the blackboard with the help of students.
Self Study, Home Work, Assignments	Exemplar questions
Assessments	Solving Questions based on law
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> • Higher Order Thinking Skills questions • Encouragement for referring other resources <i>For weak students:</i> • 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
Marks	The weightage would be given by CBSE.
Topic	Day 3- Monohybrid Cross
Class	approx. 40 min each)

Transaction	
Pre-requisite for the course	Facilitator asks the students to write down an inventory of different traits which they observe in different plants around them
Assessment of qualifying knowledge	Written test
Objective	Given the content (chapter) the learners will be able to explain the various rules of inheritance given by Mendel and can work out the monohybrid and dihybrid cross.
Learning Outcomes	KNOWLEDGE- Students will know and understand Explain the monohybrid and dihybrid cross. SKILLS and Competency : Students would be able to .Critically analyse law of segregation and law of dominance in our 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- Introduction of the topic- PPT and Digital Content would be shared Questioning- Multiple level question- Teacher will prepare a list of question about the laws of inheritance and sex determination and will ask these questions during discussions. (Critical thinking, Communication)
Resources	Text Book: NCERT text book for Science. Reference Book-CBSE Exemplar
Closure	Noting down of inheritance laws on the blackboard with the help of students.
Self Study, Home Work, Assignments	Exemplar Question
Assessments	Solving of Problems on Monohybrid Cross
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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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- Dihybrid Cross and law of independent assortment
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This topic requires Basic knowledge of nucleus, chromosomes and genes which students had already learnt in class VII and VIII
Assessment of qualifying knowledge	Written test
Objective	Given the content (chapter) the learners they can explain the various rules of inheritance given by Mendel and can work out the monohybrid and dihybrid cross.
Learning Outcomes	KNOWLEDGE- Students will know and understand Explain the monohybrid and dihybrid cross. SKILLS and Competency : Students would be able to critically analyse the laws of assortment and how it is practically applicable in our daily life.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any	Transaction would proceed in the following manner- Students will sit in their respective groups and they will reason out by how and why traits are inherited independent of each other Questioning- Multiple level question- Teacher will prepare a list of question about the laws of inheritance and sex determination and will ask these questions during discussions. (Critical thinking, Communication)

other too.)	
Resources	Text Book: NCERT text book for Science. Reference Book- CBSE Exemplar
Closure	Noting down of inheritance laws on the blackboard with the help of students.
Self Study, Home Work, Assignments	Exemplar 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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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-Sex Determination
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires Basic knowledge of sex chromosomes which students had already learnt in class VIII
Assessment of qualifying knowledge	Activity: Students will see the module on sex determination and they will be asked to develop a flow chart in their respective groups on the above mentioned topic
Objective	Given the content (chapter) the students can also understand the process of sex determination in human beings .
Learning	KNOWLEDGE- Students will know and understand

Outcomes	4. Understand the process of sex determination in human beings.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Questioning- Multiple level question- Teacher will prepare a list of question about the laws of inheritance and sex determination and will ask these questions during discussions. (Critical thinking, Communication) Techniques to be used: Quiz Daily Practice Problem MCQ Peer Assessment Lab Activities Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare-contrast matrix), silent/ loud reading, collaborative learning, Hands on experiment Experimental work Any Other
Resources	Text Book: NCERT text book for Science. Reference Book - CBSE Exemplar
Closure	Summarisation by students with the help of GO's
Self Study, Home Work, Assignments	NCERT questions
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: • Higher Order Thinking Skills questions • Encouragement for referring other resources

	For weak students: • 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 6- How do genes control trait or characteristics
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This topic requires Basic knowledge of laws of inheritance
Assessment of qualifying knowledge	To deduce a relationship between hormone, gene and enzyme.
Objective	Given the content (chapter) the learners will be able to explain that how does gene control trait .
Learning Outcomes	SKILLS and Competency : Students would be able to 1. Critically analyse the interrelationship between genes, hormones and enzymes 2. They can work in collaboration and communicate with each other that how does gene control characteristics
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Questioning- Multiple level question- Teacher will prepare a list of question about the laws of inheritance and sex determination and will ask these questions during discussions. (Critical thinking, Communication) Introduction of the topic- PPT and Digital Content would be shared Techniques to be used: Quiz Daily Practice Problem MCQ Peer Assessment Lab Activities

	Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare-contrast matrix), silent/ loud reading, collaborative learning, Hands on experiment Experimental work Any Other
Resources	Text Book: NCERT text book for Science. Reference Book -CBSE Exemplar
Closure	Muddiest point by teacher
Self Study, Home Work, Assignments	NCERT 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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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: Evolution
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires basic knowledge of biodiversity
Assessment of	Group Discussion

qualifying knowledge	
Objective	Given the content (chapter) the learners will be able to appreciate the role of factors like genetic drift, natural selection and reproductive isolation etc in speciation.
Learning Outcomes	KNOWLEDGE- Students will know and understand 1. Define heredity and variation and recognize them as major factors contributing to the traits of a species. 2. Differentiate between heredity and variation. 3. Explain the monohybrid and dihybrid cross. 4. Understand the process of sex determination in human beings. 5. Differentiate between homologous and analogous organs. 6. Explain the importance of fossils as an evidence of evolution. SKILLS and Competency : Students would be able to 4. Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place .
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-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. Introduction of the topic- PPT and Digital Content would be shared Differentiation- The students in a group of 10 will be presenting a skit on the process of evolution and how different factors are interdependent on each other so that process of evolution can take place and how does the process of evolution and speciation helps in the process of biodiversity. (Character, Citizenship)
Resources	Text Book: NCERT text book for Science. Reference Book - CBSE Exemplar

Closure	Summarisation by students with the help of unscramble text
Self Study, Home Work, Assignments	Exemplar questions
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 , critical thinking and creativity 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: For gifted students: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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- Natural Selection
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires 3. Significance of reproduction 4. Basic knowledge of nucleus, chromosomes and genes which students had already learnt in class VII and VIII
Assessment of qualifying knowledge	Written test
Objective	Given the content (chapter) the learners will be able to describe the importance of variation ,how accumulation of variation leads to evolution. They can explain the various rules of inheritance given by Mendel and can work out the monohybrid and dihybrid cross. They can also understand the process of sex determination in human beings . They can appreciate the role of factors like genetic drift, natural selection and reproductive isolation etc in speciation. They can compare homologous and analogous organs , can explain the importance of fossils as the evidence of evolution and can draw the diagrams with 75% accuracy.
Learning Outcomes	KNOWLEDGE- Students will know and understand 1. Define heredity and variation and recognize them as major factors contributing to the traits of a species. 2. Differentiate between heredity and variation. 3. Explain the monohybrid and dihybrid cross. 4. Understand the process of sex determination in human beings. 5. Differentiate between homologous and analogous organs. 6. Explain the importance of fossils as an evidence of evolution. SKILLS and Competency : Students would be able to 1. Critically analyse the importance of sexual reproduction as an element of genetic variation. 2. Appreciate the important role played by factors such as natural selection, genetic drift and reproductive isolation in evolution of species. 3. Design Creative methods/ techniques by which some genetic disorder can be resolved. 4. Appreciate the importance of different elements present and how

	effectively they collaborate with each other so that process of evolution can take place . Attitudes and beliefs- Students will be able to 1.Develop citizenship by visualizing and observing the given scenario(Different genetic disorders) and how to sensitize others regarding those disorders. 2.Use analytical skills(Critical thinking) to visualize the given scenario and use the concepts learnt in everyday problems like artificial selection and relate it to the vegetables available in the market etc
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 10 will be presenting a skit on the process of evolution and how different factors are interdependent on each other so that process of evolution can take place and how does the process of evolution and speciation helps in the process of biodiversity. (Character, Citizenship) Daily Practice Problem MCQ Peer Assessment Lab Activities Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare-contrast matrix), silent/ loud reading, collaborative learning, Hands on experiment Experimental work Any Other
Resources	Text Book: NCERT text book for Science. Reference Book- CBSE Exemplar
Closure	Muddiest point
Self Study, Home Work, Assignments	Exemplar Questions

Assessments	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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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- Artificial Selection
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This lesson requires Basic knowledge of natural selection
Assessment of qualifying knowledge	Group Discussion HW notebook
Objective	Given the content (chapter) the learners will be able to describe and They can appreciate the role of factors like genetic drift, natural selection and reproductive isolation etc in speciation.
Learning Outcomes	SKILLS and Competency : Students would be able to 2.Appreciate the important role played by factors such as natural selection, genetic drift and reproductive isolation in evolution of species. 3. Design Creative methods/ techniques by which some genetic disorder can be resolved. 4.Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place . Attitudes and beliefs- Students will be able to

	1.Develop citizenship by visualizing and observing the given scenario(Different genetic disorders) and how to sensitize others regarding those disorders. 2.Use analytical skills(Critical thinking) to visualize the given scenario and use the concepts learnt in everyday problems like artificial selection and relate it to the vegetables available in the market etc
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Introduction of the topic- PPT and Digital Content would be shared Active learning- . PMI: Analyzing Skills, Evaluating Skills on artificial selection and human evolution (Critical thinking) Group learning- The class will be divided in the group of 5 students – Brain Stroming :The question will be asked by the teacher about the different evidences of evolution. (Communication, Collaboration) .
Resources	Text Book: NCERT text book for Science. Reference Book - CBSE Exemplar
Closure	Webchart on different varities of cauliflower
Self Study, Home Work, Assignments	NCERT questions
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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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- Evidences of evolution
Class Transaction	approx. 40 min each
Pre-requisite for the course	This topic requires basic idea that how does the process of evolution have taken place.
Assessment of qualifying knowledge	Lab activity
Objective	Given the content (chapter) the learners will be able to compare homologous and analogous organs.
Learning Outcomes	KNOWLEDGE- Students will know and understand Differentiate between homologous and analogous organs. SKILLS and Competency : Students would be able to 1. Critically analyse the importance of homologous and analogous organs in the process of evolution. 2. Appreciate the important role played by factors such as natural selection, genetic drift and reproductive isolation in evolution of species. 3. Design Creative methods/ techniques by which some genetic disorder can be resolved. 4. Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place .
Transaction Methodology (The teacher can use the mentioned techniques, wherever	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. Introduction of the topic- PPT and Digital Content would be shared

applicable, and can use any other too.)	Group learning- The class will be divided in the group of 5 students – Brain Stroming :The question will be asked by the teacher about the different evidences of evolution. (Communication, Collaboration) Differentiation- The students in a group of 10 will be presenting a skit on the process of evolution and how different factors are interdependent on each other so that process of evolution can take place and how does the process of evolution and speciation helps in the process of biodiversity. (Character, Citizenship) . Techniques to be used: Quiz Daily Practice Problem MCQ Peer Assessment Lab Activities Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare-contrast matrix), silent/ loud reading, collaborative learning, Hands on experiment Experimental work Any Other
Resources	Text Book: NCERT text book for Science. Reference Book -CBSE Exemplar
Closure	Summarisation by students
Self Study, Home Work, Assignments	Compare contrast matrix on homologous and analogous organs
Assessments	Oral Response
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: • Higher Order Thinking Skills questions • Encouragement for referring other resources

	For weak students: • 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 11- Evidences of evolution
Class Transaction	approx. 40 min each
Pre-requisite for the course	This topic requires basic idea that how does the process of evolution have taken place.
Assessment of qualifying knowledge	Lab activity
Objective	Given the content (chapter) the learners will be able to compare homologous and analogous organs.
Learning Outcomes	KNOWLEDGE- Students will know and understand Differentiate between homologous and analogous organs. SKILLS and Competency : Students would be able to 1. Critically analyse the importance of homologous and analogous organs in the process of evolution. 2. Appreciate the important role played by factors such as natural selection, genetic drift and reproductive isolation in evolution of species. 3. Design Creative methods/ techniques by which some genetic disorder can be resolved. 4. Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place .
Transaction Methodology (The teacher can use the mentioned	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.

techniques, wherever applicable, and can use any other too.)	Introduction of the topic- PPT and Digital Content would be shared Group learning- The class will be divided in the group of 5 students – Brain Stroming :The question will be asked by the teacher about the different evidences of evolution. (Communication, Collaboration) Differentiation- The students in a group of 10 will be presenting a skit on the process of evolution and how different factors are interdependent on each other so that process of evolution can take place and how does the process of evolution and speciation helps in the process of biodiversity. (Character, Citizenship) . Techniques to be used: Quiz Daily Practice Problem MCQ Peer Assessment Lab Activities Student -teacher interaction, Wipro- G.O.s(web chart, flow chart and differentiation table,compare-contrast matrix), silent/ loud reading, collaborative learning, Hands on experiment Experimental work Any Other
Resources	Text Book: NCERT text book for Science. Reference Book -CBSE Exemplar
Closure	Summarisation by students
Self Study, Home Work, Assignments	Compare contrast matrix on homologous and analogous organs
Assessments	Oral Response
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:

	• Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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 12- Fossils
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This topic requires basic knowledge of fossils and how they are formed
Assessment of qualifying knowledge	Group Discussion HW notebook
Objective	Given the content (chapter) the learners will be able to describe the importance of fossils as the evidence of evolution .
Learning Outcomes	KNOWLEDGE- Students will know and understand Explain the importance of fossils as an evidence of evolution. SKILLS and Competency : Students would be able to 4.Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place . Attitudes and beliefs- Students will be able to 1.Develop citizenship by visualizing and observing the given scenario(Different genetic disorders) and how to sensitize others regarding those disorders. 2.Use analytical skills(Critical thinking) to visualize the given scenario and use the concepts learnt in everyday problems like artificial selection and relate it to the vegetables available in the market etc

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-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. Teacher will ask few questions to introduce the topic • Why children look similar to their parents? Introduction of the topic- PPT and Digital Content would be shared Group learning- The class will be divided in the group of 5 students – Brain Stroming :The question will be asked by the teacher about the different evidences of evolution. (Communication, Collaboration) Carousel Review-(Provides an opportunity to generate ideas, check understanding, and raise unanswered questions on the topic fossils .Teams rotate from one poster to the next at given intervals, adding ideas.) . (Communication, Collaboration)
Resources	Text Book: NCERT text book for Science. Reference Book -CBSE Exemplar
Closure	Webchart on fossils
Self Study, Home Work, Assignments	Exemplar Questions
Assessments	Written 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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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 13- Speciation
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This topic requires basic knowledge of different factors responsible for the process of speciation
Assessment of qualifying knowledge	Group Discussion HW notebook
Objective	Given the content (chapter) the learners will be able to describe . and can appreciate the role of factors like genetic drift, natural selection and reproductive isolation etc in speciation.
Learning Outcomes	KNOWLEDGE- Students will know and understand that how does the process of speciation has taken place. SKILLS and Competency : Students would be able to 2.Appreciate the important role played by factors such as natural selection, genetic drift and reproductive isolation in evolution of species. 3. Design Creative methods/ techniques by which some genetic disorder can be resolved. 4.Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place . Attitudes and beliefs- Students will be able to 1.Develop citizenship by visualizing and observing the given scenario(Different genetic disorders) and how to sensitize others regarding those disorders. 2.Use analytical skills(Critical thinking) to visualize the given scenario and use the concepts learnt in everyday problems like artificial selection and relate it to the vegetables available in the market etc
Transaction Methodology (The teacher can use the	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

mentioned techniques, wherever applicable, and can use any other too.)	they would learn now. They would also be told the significance of the topic that they would be studying. Teacher will ask few questions to introduce the topic • Why children look similar to their parents? Introduction of the topic- PPT and Digital Content would be shared Differentiation- The students in a group of 10 will be presenting a skit on the process of evolution and how different factors are interdependent on each other so that process of evolution can take place and how does the process of evolution and speciation helps in the process of biodiversity. (Character, Citizenship)
Resources	Text Book: NCERT text book for Science. Reference Book -CBSE Exemplar
Closure	Muddiest Point
Self Study, Home Work, Assignments	NCERT QUESTIONS ON the topic
Assessments	Collaborative work(pair and share)-Student will sit in groups and teacher will conduct “Fill in missing words” activity after explaining the concept of speciation
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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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.
DAY 14	Topic- Speciation

Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This topic requires basic knowledge of different factors responsible for the process of speciation
Assessment of qualifying knowledge	Group Discussion HW notebook
Objective	Given the content (chapter) the learners will be able to describe . and can appreciate the role of factors like genetic drift, natural selection and reproductive isolation etc in speciation.
Learning Outcomes	KNOWLEDGE- Students will know and understand that how does the process of speciation has taken place. SKILLS and Competency : Students would be able to 2.Appreciate the important role played by factors such as natural selection, genetic drift and reproductive isolation in evolution of species. 3. Design Creative methods/ techniques by which some genetic disorder can be resolved. 4.Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place . Attitudes and beliefs- Students will be able to 1.Develop citizenship by visualizing and observing the given scenario(Different genetic disorders) and how to sensitize others regarding those disorders. 2.Use analytical skills(Critical thinking) to visualize the given scenario and use the concepts learnt in everyday problems like artificial selection and relate it to the vegetables available in the market etc
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and	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. Teacher will ask few questions to introduce the topic • Why children look similar to their parents?

can use any other too.)	Introduction of the topic- PPT and Digital Content would be shared Differentiation- The students in a group of 10 will be presenting a skit on the process of evolution and how different factors are interdependent on each other so that process of evolution can take place and how does the process of evolution and speciation helps in the process of biodiversity. (Character, Citizenship)
Resources	Text Book: NCERT text book for Science. Reference Book - CBSE Exemplar
Closure	Muddiest Point
Self Study, Home Work, Assignments	NCERT QUESTIONS ON the topic
Assessments	Collaborative work(pair and share)-Student will sit in groups and teacher will conduct “Fill in missing words” activity after explaining the concept of speciation
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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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
TOPIC	The weightage would be given by CBSE.
TOPIC	DAY 15- Human Evolution
Class Transaction	(approx. 40 min each)
Pre-requisite for the course	This topic requires basic idea about human species.
Assessment of	Group Discussion

qualifying knowledge	HW notebook
Objective	Given the content (chapter) the learners will be able to describe that how does the process of human evolution have taken place.
Learning Outcomes	SKILLS and Competency : Students would be able to 1.Critically analyse the importance of sexual reproduction as an element of genetic variation. 2.Appreciate the important role played by factors such as natural selection, genetic drift and reproductive isolation in evolution of species. 3. Design Creative methods/ techniques by which some genetic disorder can be resolved. 4.Appreciate the importance of different elements present and how effectively they collaborate with each other so that process of evolution can take place . Attitudes and beliefs- Students will be able to 1.Develop citizenship by visualizing and observing the given scenario(Different genetic disorders) and how to sensitize others regarding those disorders. 2.Use analytical skills(Critical thinking) to visualize the given scenario and use the concepts learnt in everyday problems like artificial selection and relate it to the vegetables available in the market etc
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-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. Introduction of the topic- PPT and Digital Content would be shared Discussion, think pair share, graphic organiser, explanation by teacher Active learning- . PMI: Analyzing Skills, Evaluating Skills on artificial selection and human evolution (Critical thinking)
Resources	Text Book: NCERT text book for Science. Reference Book -CBSE Exemplar

Closure	Summarisation by Students
Self Study, Home Work, Assignments	Exemplar Questions
Assessments	Note Book
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: • Higher Order Thinking Skills questions • Encouragement for referring other resources For weak students: • 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.