

Academic planner-2025-2026
Class -XII Biology

Date & number of days	Topics/ Content	Learning outcome	Mode of assessment	Assignment / H.W	Teaching pedagogy	Interdisciplinary aspect / SDG	21st century skills	Lab activity/Practical
1/4/25-15/4/25, No.of days-10	Chapter-1 Sexual reproduction in flowering plants, Structure of flower, Pre fertilization grains, pistil, megasporangium & embryo sac, devices, artificial hybridization, double fertilization post fertilization events apomixes seed, fruit and polyembryony,	1. Draws labelled diagrams, flow charts, concept maps 2. Understands process of plant reproduction in angiosperms 3. Is able to prepare slide of pollen fermination	Class test group assignments and projects/ Information gathering	Assignment containing NCERT and extra questions	Collaborative peer to peer learning	SDG 15	Creativity Collaboration Communication	1. Pollen germination on stigma through a permanent slide. 2. Study of flowers adapted to pollination by different agencies.
16/4/2025 - 30/4/2025 No.of days-12	Chapter 2 Human reproductionFemale reproductive system,	1. Draws labelled diagrams, flow charts, concept maps of male and female reproductive systems and gametogenesis 2. Understands process of menstruation and hygiene; pregnancy and embryonic development, etc.	Interactive Quizzes/Science Concept map	Assignment containing NCERT and extra questions	Concept Mapping – Visually organizing information to enhance understanding.	SDG 4		To study pollen germination on a slide in nutrient medium

1/5/25-15/5/25 No.of days-11	gametogenesis & menstrual cycle Fertilization & implantation, Pregnancy & embryonic devpt. Parturition & lactation (elementary idea).	1. is able to make practical observation of gametogenesis from permanent slides and relate the process 2. Understands pregnancy & embryonic devpt. Parturition & lactation (elementary idea).	Online quiz	Assignment containing extra questions and from NCERT	Direct instruction	interpretation of graphs	Problem solving Adaptibility Analytic reasoning	Excercise on controlled pollination emasculati on,baggin g and tagging
16/5/25-25/5/25 No.of days-8	Chapter-3 Reproductive health, problems & strategies, population explosion & Birth control, medical termination of pregnancy (MTP), STDs infertility. infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary	1. understands the of contribution of scientists/researchers to solve reproductive health related problems 2. Understands population explosion & Birth control, medical termination of pregnancy (MTP), STDs infertility. infertility and assisted reproductive technologies - IVF, ZIFT, GIFT	Think-Pair-Share/Student Presentations	Assignment containing extra questios and from NCERT	Experiential Learning: allowing students to connect scientific concepts to their daily lives.	Effects of psychological disorders and stress on reproductive health	Initiative and self direction	1. Identificati on of stages of gamete developme nt T.S of testis and T.S of ovary through permanent slide. 2. Study of T.S of Blastula through permanent

1/7/25-15/7/25 No.of days-12	Chapter-4 Principles of inheritance & variation Mendel's laws ,Incomplete dominance Mendel's laws ,Incomplete dominance Codominance, blood groups, inheritance thalassaemia, pleiotropy, polygenic inheritance (elementary idea)v	1. understands the of contribution of scientists and principles of inheritance & variation	Oral assessments viva voce student presentations of concepts	Assignment containing problems in genetics and NCERT questions	Critical thinking Creativity Collaboration Communication	Chemical structure of DNA	self direction problem solving collaboration	1.Study Mendelian inheritance using seeds of different colours size of any plant. 2. Study prepared pedigree charts of
16/7/2025 - 31/7/2025 No.of days-14	Chapter-5 Molecular basis of inheritance Introduction, DNA, search for genetic material, RNA world, replication, transcription, the genetic code, mutation translation, regulation of gene expression, human and rice genome project, DNA fingerprinting.	1. Draws labelled diagrams, flow charts, concept maps 2. Understands process of replication, transcription, translation and DNA finger printing human genome etc. 3. Prepares acetocarmine stained slides of onion root tips to study mitosis.	Oral assessments viva voce student presentations of concepts	Assignment containing extra questions and from NCERT	Concept Mapping – Visually organizing information to enhance understanding.	Chemical reactions involved in protein synthesis and how mutations can affect protein structure and function	Critical thinking Creativity Collaboration Communication Information literacy	Isolate DNA from available plant material

1/8/2025 - 15/8/2025 No.of days-11	Chapter 6 Evolution Evolution of life forms, evidences for evolution, (paleontology), comparative anatomy, embryology and mechanism of evolution - variation(mutation and recombination) and natural selection with examples and types of natural selection, gene flow and genetic drift, Hardy Weinberg equilibrium molecular evidences; Darwin's contribution human evolution.	1. understands the of contribution of scientists and mechanisms of evolution. 2. Understands evolution of life forms, evidences for evolution, (paleontology), comparative anatomy, embryology - variation(mutation and recombination) and natural selection with examples and types of natural selection, gene flow and genetic drift, Hardy Weinberg equilibrium molecular evidences; Darwin's contribution human evolution.	Class test Self- Assessment and Reflection,Peer Review	Assignment s based on mechanism & evidences of evolution	Animated videos on evolution would be shown	Anthrop ological evidence s of evolution .	Flexibility problem solving collaborati on Adaptibilit y	Flash cards models showing examples of homologo us and analogous organs
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1/10/25-15/10/25 No.of days-8	Chapter 8 Microbes in Human Welfare Microbes & Household products, Industria Products, Antibiotics, Microbes & Sewage Treatment & Production of Bio-Gas. Microbes as biocontrol agents & as biofertilisers.	1. Understands the of applications of microbes in industry, agriculture and medicine and contribution of scientists 2. Understands the working of sewage treatment plants & biogas plants 3. Is able to prepare temporary stained mount of onion root tips & study mitosis in them.	Group assignments and projects	Assignment containing NCERT and extra questions	Padlet and sway making(Microsoft tools)	SDG 9 &	self direction problem solving collaboration	Prepare temporary stained mount of onion root tips & study mitosis in them
16/10/25 - 31/10/25 No.of days-10	Chapter 9 Biotechnology:Principles & processes Introduction & Revision tools of rDNA technology	1. Understands the tools and steps of rDNA technology and contribution of scientists.	Class test Presentations on science concepts/ experiments ,Investigations for stated problems	Assignment containing NCERT and extra questions	Thinking and Problem-Solving: The pedagogy aims to develop students' ability to think critically,	SDG 9 &	Critical thinking Creativity Collaboration Communication Brainstroming	To study meiosis in onion bud cell or grasshopper testis through permanent slides

	Chapter-10 Biotechnology & its applications Biotechnological applications in agriculture health Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms - Bt crops; transgenic animals; biosafety issues, bio piracy and patents.	1. understands role of rDNA technology & its applications in industry, agriculture and medicine. 2. Is able to isolate DNA in lab	Interactive Quizzes/Science Concept map/ student presentation	Assignment containing NCERT and extra questions	Peer to peer teaching	SDG 9 &	self direction problem solving collaboration initiative	Study of plant population density by quadrat method
1/11/25 - 15/11/25 No.of days-11	Chapter-11: Organisms and Populations Organisms and environment: Habitat and niche, population and ecological adaptations; population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate population growth curves	1. Understands populations, organisms and their interactions 2. Learns to perform field experiments and record analyse and interpret data 3. Understands population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate population growth curves	Oral assessments/ Presentations on science concepts/ field experiments	Assignment containing NCERT and extra questions	Reciprocal teaching	SDG 13, 1	Critical thinking Information literacy Media literacy	

16/11/25 - 30/11/25 No.of days-12	Chapter -12 Ecosystem Ecosystem structure & function, productivity, decomposition, energy flow and ecological pyramids decomposition, Energy flow ecological pyramids of energy, Biomass and number	1. Understands ecosystem structure & function, productivity, decomposition, energy flow and ecological pyramids decomposition	Investigations for stated problems/ Field experiments / Viva	Assignment containing NCERT and extra questions	Cooperative learning	SDG 13, 15 & 17 Mathematical interpretation of graphs	Environmental awareness and social responsibility	Models specimen showing symbiotic association in root nodules of leguminous plants, cuscuto on host and lichens
	Chap. 13 Biodiversity & conservation Biodiversity types, Patterns, Loss of biodiversity endangered organisms, extinction, Red Data Book, biosphere & its conservation supplementary text Discussion of CBSE sample papers & other sample papers reserves, national parks sanctuaries and Ramsar sites	1. Understands biodiversity & its conservation 2. Understands red data Book, biosphere reserves, national parks sanctuaries and Ramsar sites	Written assessment as SAQs	Assignment containing NCERT and extra questions	Cooperative and Collaborative Learning: Encouraging students to learn together and from each other, fostering	SDG 13, 1	Problem solving Adaptability Analytic reasoning	Study of plant population frequency and density by quadrat method
1/12/25- 15/12/25 days - 12	Preboard Examination		Preboard Examination					

16/12/25-31/12/25 days - 13	Revisions		Discussions of sample papers
1/1/25 - 15/1/25 No .of days- NIL	Winter Break		
16/1/25 - 31/1/25 days-13	Revisions	Discussions of sample papers	
1/2/26 - 15/2/26 days-11	Revisions	Discussions of sample papers	