KIDS WORLD SCHOOL, NAGPUR
SESSION – 2026-27
CLASS - X
SUBJECT – BIOLOGY

UNIT		Topic	Sub-Topic	Month		Suggested Ice-Breaking Activity	Teaching Pedagogy	Curricular Goals	Competency	Expected Learning Outcome	Assessment
No.	Name			Starting	Closing						
5	Life Processes (20 Periods)	1) NUTRITION 2) RESPIRATION 3)TRANSPORTATION 4) EXCRETION	What are life processes? 5.2.1 Autotrophic Nutrition 5.2.2 Heterotrophic Nutrition 5.2.3 How do Organisms obtain their Nutrition? 5.2.4 Nutrition in Human Beings 5.4.1 Transportation in Human Beings 5.4.2 Transportation in Plants 5.5.1 Excretion in Human Beings 5.5.2 Excretion in Plants	April	July	1) **Activity:** "Make Your Own Food" (Role Play + Material) Materials: Yellow paper (sunlight) Blue paper (water) Green leaf/paper 1 student = Sun 1 = Water 1 = Plant Sun + Water "give" to plant Plant shows "food making" action Real feel of photosynthesis 2) **Activity:** "Food Chain Role Play" Materials: Flashcards (Plant, Goat, Human) Plant → Goat → Human (students pass food action) Shows dependency on others 3) **Activity:** "Different Eating Styles" Materials: Straw (sucking) Spoon (ingesting) Sponge (absorbing) Students try: Drink with straw Eat with spoon Absorb water with sponge Real-life modes of nutrition	1) Explanation with the help of Entab videos and teaching panel for better visual understanding. 2) Explanation with the help of hands-on activities conducted in the classroom for practical learning. 3) Explanation with the help of Biology lab visits to observe experiments and specimens.	1) To understand the basic functions that all living beings need to survive, such as nutrition, respiration, transportation, and excretion. 2) It aims to explain how plants and animals carry out these processes differently but for the same purpose—maintaining life. 3) To learn how energy is obtained from food, how it is transported through the body, and how waste is removed to keep the body healthy. 4) The chapter encourages curiosity about how our bodies work and helps students connect scientific knowledge with real-life situations, promoting awareness about healthy living and the importance of body functions.	1) Identify that different food items consumed by them take different duration of time for digestion. 2) Interpret that problem of acidity is due to the presence Different gastric enzymes. 3) Identify the process of fermentation is due to anaerobic respiration which is used in production of alcohol, vinegar and bakery industries as well as in making of dosa etc. and also heavy exercise leads to anaerobic respiration which is responsible for cramps in muscle in human.	1) Learner will able to differentiate life processes and identify their interdependence in a living organism. 2) Learner will able to differentiate the two modes of nutrition-autotrophic and heterotrophic. 3) Learner will able to examine the features of heterotrophs and categories them under holozoic, saprotrophic and parasitic nutrition. 4) Learner will able to illustrate the structure of leaves and relate the different types of cells involved with their functions in the leaves. 5) Learner will able to identify the raw materials required for photosynthesis and write a balanced equation of photosynthesis. 6) Learner will able to compare nutrition in Amoeba with Paramecium on the basis of the method of ingestion and elimination of undigested food. 7) Learner will able to illustrate the parts of the digestive system. 8) Learner will able to observe the action of salivary amylase on starch solution. 9) Learner will able to distinguish between	Assessment as Learning

						4) **Activity:** "Pass the Food" One student = food Pass from mouth → stomach → intestine Fun chain game 5) **Activity:** "Heartbeat Clap" Students clap in rhythm Increase speed slowly Represents blood flow & heartbeat 6) **Activity:** "Up or Down?" Say: "Water" → students say "UP" "Food" → students say "DOWN" Introduces transport direction 7) **Activity:** "Keep or Throw" Students: Show "keep" (hug gesture) for useful Show "throw away" (push gesture) for waste Feel removal of waste 8) **Activity:** "True or False" "Plants don't excrete" "Plants remove waste through leaves" Students say: True / False Breaks misconception				cellular respiration and breathing. 10) Learner will able to explain the various pathways of glucose metabolism and identify their significance. 11) Learner will able to identify the various structures involved in gaseous exchange in plants. 12) Learner will able to identify the components of blood and relate them with its functions. 13) Learner will able to differentiate between different types of blood vessels. 14) Learner will able to recognize the significance of valves in veins. 15) Learner will able to illustrate the structure of human heart. 16) Learner will able to compare the transportation system in plants with that of animals. 17) Learner will able to review the definition and significance of excretion. 18) Learner will able to list the waste products of plants and the mechanism of their removal.	

6	Control and Coordinati-on (15 Periods)	6.1 ANIMALS – NERVOUS SYSTEM 6.2 COORDINATION IN PLANTS 6.3 HORMONES IN ANIMALS	6.1.1 What happens in Reflex Actions? 6.1.2 Human Brain 6.1.3 How are these Tissues protected? 6.1.4 How does the Nervous Tissue cause Action? 6.2.1 Immediate Response to Stimulus 6.2.2 Movement Due to Growth	July	August	Reflex Action **Activity:** "Catch the Scale" Drop a scale suddenly → students catch Measure reaction time Human Brain **Activity:** "Brain Command Center" Assign roles: Cerebrum (thinking) Cerebellum (balance) Medulla (heartbeat) Give situations → students respond Protection of Tissues **Activity:** "Bodyguard Game" Students act as: Skull, ribs, vertebral column Protect a "brain/heart" student Nervous Tissue Action **Activity:** "Neuron Chain" Students pass a signal (clap/tap) Show speed & direction Immediate Response vs Growth Movement **Activity:** "Mimosa Simulation" One student touch → another folds (like touch-me-not) Compare with plant growth movement (slow motion acting)	1) Explanation with the help of Entab videos and teaching panel for better visual understanding. 2) Explanation with the help of demonstration method to show concepts step-by-step.	1) To understand how living organisms, especially humans, sense things around them and respond in a proper and timely manner. 2) It explains how the brain, spinal cord, nerves, and hormones work together to control body activities and maintain balance. 3) To learn how animals react to stimuli, how messages travel in the body through nerves, and how hormones help in growth and other important functions. 4) The chapter aims to make students aware of the importance of the nervous system and endocrine system in day-to-day life and how they help in coordination between different parts of the body. 5) It also encourages curiosity about how humans and other living beings make decisions and adjust to their surroundings.	1) To learn leadership quality of brain to control hunger, anxiety, anger, memory, thirst, riding, writing, balancing of the body, body postures etc. 2) Sensitize the body response during adverse situation like touching hot water or any utensils, when suddenly any foreign object comes in contact with our eyes, etc through reflex action. 3) Infer the effect of hormones for the changes in human after puberty. 4) Appreciate the role of hormone to cope stress. 5) Realize the role of plant hormones in regulating the process of phototropism, geotropism, hydrotropism, chemotropism etc. 6) Illustrate examples from daily life to relate the effect of hormones on living system.	1) Learner will able to identify the receptors present in the different sense organs. 2) Learner will able to explain the functioning of a neuron and how electrical signals travel in the human body. 3) Learner will able to illustrate the path of reflex action in the body. 4) Learner will able to idensify the functions of the different parts of the brain. 5) Learner will able to differentiate between endocrine and exocrine glands. 6) Learner will able to enlist various plant hormones and state their roles in the control and coordination of a plant's body. 7) Learner will able to recognize and differentiate the various tropics and nastic movements that occur in a plant.	Assessment as Learning

7	How do Organisms Reproduce? (20 Periods)	7.1 DO ORGANISMS CREATE EXACT COPIES OF THEMSELVES? 7.2 MODES OF REPRODUCTION USED BY SINGLE ORGANISMS 7.3 SEXUAL REPRODUCTION	7.1.1 The Importance of Variation 7.2.1 Fission 7.2.2 Fragmentation 7.2.3 Regeneration 7.2.4 Budding 7.2.5 Vegetative Propagation 7.2.6 Spore Formation 7.3.1 Why the Sexual Mode of Reproduction? 7.3.2 Sexual Reproduction in Flowering Plants 7.3.3 Reproduction in Human Beings 7.3.3 (a) Male Reproductive System 7.3.3 (b) Female Reproductive System 7.3.3 (c) What happens when the Egg is not Fertilised? 7.3.3 (d) Reproductive Health	September	October	**Activity:** Shuffle the Traits Write traits on slips (eye color, height, etc.) Students pick random slips to create a "new individual" No two combinations are same Purpose: Understand role of meiosis in genetic variation Connect concept with real-life examples (siblings' differences) **Activity:** "Reproduction Stations" Divide class into stations: Fission → splitting clay Budding → balloons Fragmentation → breaking chalk Regeneration → starfish drawing Spore → blowing powder Vegetative → potato eyes Rotational learning **Activity:** Flower as a Model How to do it: Show a real flower (hibiscus/lily) Students identify: Stamen (male part) Pistil (female part) Concept: Structure	1) Explanation with the help of hands-on activities conducted in the classroom for practical learning. 2) Explanation with the help of ICT tools like PPTs and smart boards. 3) Explanation with the help of Biology lab visits to observe experiments and specimens.	1) To understand how living things create new life to continue their species. 2) To explain the different ways in which plants, animals, and humans reproduce—whether by simple methods like budding or through complex processes like sexual reproduction. 3) To learn about the basic parts and functions of the reproductive system in humans and also understand the role of male and female reproductive cells. 4) To encourages respect for life processes, awareness about personal health and hygiene during adolescence, and helps students appreciate the importance of reproduction in maintaining life on Earth.	1) To emphasized on development of skills like observational, experimental and inculcating values like awareness, responsibility, accuracy. 2) Students will be able to identify the significance of bright colour of flower for pollination. 3) They will be able to interpret that night blooming flowers are white whereas the day blooming flowers are brightly coloured. 4) The noticeable changes that occur during puberty such as increase in height, body shape, change in voice of males, appearance of pimples Mental and emotional maturity bodily changes during adolescence. 5) Myths and taboos regarding bodily changes during adolescence. 6)To get aware regarding prevention of sexually transmitted disease. 7) To relate the importance of government raising awareness campaign regarding birth control measures.	1) Learner will able to list down the reasons for errors in DNA copying and their effect on living organisms. 2) Learner will able to examine the process of binary fission in Amoeba and budding in yeast. 3) Learner will able to identify the process of regeneration in simple multicellular organisms. 4) Learner will able to identify the process of budding in simple organisms like Hydra and yeast. 5) Learner will able to identify the process of fragmentation and regeneration in simple multicellular organisms. 6) Learner will able to review the different methods of vegetative propagation found in plants. 7) Learner will able to identify the process of spore formation in fungi. 8) Learner will able to examine and illustrate the parts of a bisexual flower. 9) Learner will able to identify the steps of fertilization in flowering plants. 10) Learner will able to review the types of pollination and identify the agents responsible for pollination. 11) Learner will able to illustrate the structure of the male reproductive system in humans. 12) Learner will able to illustrate the structure	Assessment for Learning

						involved in reproduction. Emoji Feelings **Activity** How to do: Show emojis (happy, confused, angry, excited) Ask: Do emotions also change as we grow? Purpose: Connects physical + emotional changes Makes topic relatable **Activity** Word Association How to do: Start with a simple word: "Life" Ask students to say the first word that comes to their mind Continue chain: Life → Growth → Baby → Family → Care → etc. No right or wrong answers Benefit: Gradually brings the class toward the idea of growth and reproduction naturally. **Purpose:** Make students open up and participate freely **Activity** 28-Day Human Calendar Select 28 students Give them numbers (Day 1–28) Mark:				of the female reproductive system in humans. 13) Learner will able to review the importance and need for population control and family planning.	

						Day 1–5 → Period Day 14 → Ovulation **Activity** Ask: Which day is most important? What happens before and after? Builds visual understanding of timeline. Myths vs Facts How to do it: Teacher reads simple statements Students show: Fact Myth Examples: **Activity** “Reproductive health is important for everyone” “Only adults need to know about this” Purpose: Clears misconceptions					

8	Heredity (12 Periods)	8.1 ACCUMULATION OF VARIATION DURING REPRODUCTION 8.2 HEREDITY	8.2.1 Inherited Traits 8.2.2 Rules for the Inheritance of Traits – Mendel's Contributions 8.2.3 How do these Traits get Expressed? 8.2.4 Sex Determination	November	November	**Activity:** "Nature vs Nurture Sorting" Give cards: Height, language, skin colour, scars, habits Students sort into: Inherited / Acquired Purpose: Distinguish between genetic traits vs environmental influence Prevent common misconceptions **Activity:** "Pea Plant Simulation" Use colored beads: Yellow (Y), Green (y) Students randomly pick 2 → create offspring genotype Purpose: Understand law of segregation Connect theory to random genetic combination Expression of Traits **Activity:** "Trait Expression Voting" Give genotype cards: TT, Tt, tt Students vote what phenotype will appear Purpose: Reinforce dominant vs recessive expression	1) Explanation with the help of real-life examples to make concepts easy. 2) Explanation with the help of Entab videos and teaching panel for better visual understanding.	1) To understand how traits are passed from one generation to the next through genes. 2)To learn that characters like eye colour, height, or blood group are inherited from parents through small units called genes, which are present on chromosomes in the cell nucleus. 3) They explore the experiments of Gregor Mendel, which form the foundation of the principles of inheritance, such as dominant and recessive traits. 4) To make students aware of how sex is determined in humans based on the combination of X and Y chromosomes.	1)To emphasized on development of skills like observational, experimental, knowledge, understanding, analysis, interpretation and inculcating values like awareness, responsibility, coordination and empathy. 2)They will be able to interpret inheritance of blood groups in human being.	1) Learner will able to define variations, heredity and genetics. 2) Learner will able to distinguish between characteristics and traits; genotype and phenotype. 3) Learner will able to identify the reasons why Mendel selected pea plants for his experiments. 4) Learner will able to list down the seven characteristics with contrasting traits studied by Mendel. 5) Learner will able to calculate the phenotypic and genotypic ratio for a monohybrid cross. 6) Learner will able to calculate the phenotypic ratio for a dihybrid cross. 7) Learner will able to identify the factors affecting sex determination in animals and explain sex determination in human beings.	Assessment as Learning

						Develop prediction skills **Activity:** "Probability Graph Activity" After coin toss (XX/XY), record class results on board Compare expected vs actual ratio Purpose: Connect genetics with mathematics & probability Understand randomness in inheritance					

14	Our Environment (15 Periods)	13.1 ECO-SYSTEM — WHAT ARE ITS COMPONENTS? 13.2 HOW DO OUR ACTIVITIES AFFECT THE ENVIRONMENT?	13.1.1 Food Chains and Webs 13.2.1 Ozone Layer and How it is Getting Depleted 13.2.2 Managing the Garbage we Produce	December	December	**Activity:** "Food Web Thread Game" Give different organisms to students Use thread to connect "who eats whom" Remove one organism suddenly Purpose: Understand interdependence in ecosystem Show impact of removing one species (ecosystem imbalance) Link to Food Web **Activity:** "Save the Earth Campaign" Students create slogans/posters Purpose: Promote environmental awareness Encourage responsible behavior **Activity:** "Waste Sorting Race" Bring items (paper, plastic, food waste) Students sort into: Biodegradable Non-biodegradable Recyclable Purpose: Identify types of waste Develop real-life waste management habits	1) Explanation with the help of hands-on activities conducted in the classroom for practical learning. 2) Explanation with the help of Entab videos and teaching panel for better visual understanding.	1) To understand how all living and non-living things in nature are connected and how human activities affect this balance. 2) It teaches about ecosystems, food chains, and how waste—especially plastics and chemicals—can harm the environment. 3) The chapter aims to make students aware of the importance of reducing pollution, managing waste properly, and protecting nature. 4) It encourages responsible behavior like using fewer plastics, recycling, and saving energy. 5) Overall, it helps students become more environmentally conscious and take small steps in daily life to keep the Earth clean and healthy. 6) To interpret the importance of bacteria and decomposers and consequences if decomposers are removed from environment.	1) To analysis, interpretation and inculcating values like awareness, responsibility coordination and empathy towards environment. 2) To identify that tertiary consumer required more energy according to 10% law and therefore depends on multiple food options. 3) To interpret layer of atmosphere in which ozone is present and its importance. 4) To evaluate that increased increase in size of ozone hole is due to human activities.	1) Learner will able to review the concept of the term environment and ecosystem. 2) Learner will able to review the concept of food chain and food web. 3) Learner will able to identify the flow of energy in a food chain with the help of the 10% rule. 4) Learner will able to acknowledge the concept of the pyramid of numbers and the pyramid of energy for a food chain. 5) Learner will able to cognise the phenomenon of biomagnification. 6) Learner will able to identify the major environmental concerns due to human intervention in nature. 7) Learner will able to explain the significance, formation, cause of depletion of the ozone layer and the steps taken to limit the damage caused to it. 8) Learner will able to identify the types of waste produced and different ways of their disposal.	Assessment of Learning