



# The Camford International School

## ANNUAL LESSON PLAN 2023-2024

**GRADE: 11B**

**SUBJECT: Biology (044)**

<b>MONTH</b>	<b>CHAPTER NO. AND NAME</b>	<b>DETAIL CONCEPTS TO BE COVERED</b>	<b>PRACTICALS</b>
<b>APRIL</b>	<b>CHAPTER 1 CHAPTER 2</b>	<p>Biodiversity; Need for classification; three domains of life; taxonomy and systematic; concept of species and taxonomical hierarchy; binomial nomenclature.</p> <p>Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids</p>	<p><b>Specimens/slides/models and identification.</b></p> <p><b>Parts of a compound microscope.</b></p>
<b>MAY</b>	<b>CHAPTER 3</b>	<p>Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations.)</p>	<p><b>Virtual specimens/slides/models and identifying features of common plants.</b></p>

<p style="text-align: center;"><b>JUNE (23)</b></p>	<p><b>CHAPTER 4</b> <b>CHAPTER 5</b> <b>CHAPTER 6</b> <b>CHAPTER 8</b></p>	<p>Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level</p> <p>Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed.</p> <p>Description of family Solanaceae.</p> <p>Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.</p> <p>The tissue and the tissue systems.</p>	<p style="text-align: center;"><b>Virtual specimens/slides/models</b></p> <p style="text-align: center;"><b>Study of osmosis by Potato osmometer.</b></p> <p style="text-align: center;"><b>Study of plasmolysis in epidermal peels</b></p> <p style="text-align: center;"><b>Study and describe a locally available common flowering plant, from any one family</b></p> <p style="text-align: center;"><b>Study of distribution of stomata on the upper and lower surfaces of leaves.</b></p>	
<p style="text-align: center;"><b>JULY</b></p>	<p><b>CHAPTER 6</b> <b>CHAPTER 9</b> <b>CHAPTER 10</b> <b>CHAPTER 11</b></p>	<p>Anatomy and functions of tissue systems in dicots and monocots.</p> <p>Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzyme - types, properties, enzyme action. (Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents – Concept of Metabolism, Metabolic Basis of Living, The Living State).</p> <p>Cell cycle, mitosis, meiosis and their significance.</p>	<p style="text-align: center;"><b>T.S of dicot and monocot stem and root.</b></p> <p style="text-align: center;"><b>Study of distribution of stomata in the upper and lower surfaces of leaves.</b></p> <p style="text-align: center;"><b>Separation of plant pigments through paper chromatography.</b></p>	

<p style="text-align: center;"><b>AUGUST</b></p>	<p><b>CHAPTER 13</b> <b>CHAPTER 14</b> <b>CHAPTER 17</b> <b>CHAPTER 18</b></p>	<p>Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation, Chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.</p> <p>Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.</p> <p>Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders.</p> <p>Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure</p>	<p><b>Tissues and diversity in shape and size of animal cells (squamous epithelium, smooth, skeletal and cardiac muscle fibers and mammalian blood smear) through temporary/permanent slides.</b></p>	<p><b>Compare the RBC count and oxygen affinity of hemoglobin in different regions. (Graphical representation/ PowerPoint presentation)</b></p>
<p style="text-align: center;"><b>SEPTEMBER (20)</b></p>	<p><b>CHAPTER 7</b> <b>CHAPTER 15</b> <b>CHAPTER 19</b> <b>CHAPTER 20</b></p>	<p>Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.</p> <p>Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile protein.</p> <p>Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system – structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.</p> <p>Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous &amp; reproductive) of frog.</p>	<p><b>Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.</b></p> <p><b>Test for the presence of substances in urine.</b></p>	<p style="text-align: center;">-</p>

<p><b>OCTOBER (17)</b></p>	<p><b>CHAPTER 20</b> <b>CHAPTER 21</b> <b>CHAPTER 22</b></p>	<p>Muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.</p> <p>Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse</p> <p>Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease. Note: Diseases related to all the human physiological systems to be taught in brief.</p>	<p><b>Human skeleton and different types of joints</b></p>	
		<p><b>Revision</b></p>		
		<p><b>Term- II Annual Examination</b></p>		