



The Camford International School

ANNUAL LESSON PLAN 2025-2026

GRADE: 12

SUBJECT: Biology (044)

MONTH	NAME OF THE CHAPTER	DETAIL CONCEPTS TO BE COVERED	PRACTICALS/ ACTIVITIES
MARCH	Reproduction in Flowering Plants Human Reproduction	Flower structure; parts of flower and their functions. Development of male and female gametophytes; Pollination - types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; Special modes- Apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation. Male/female reproductive system, testis and ovary, Spermatogenesis,	Activity to observe pollen germination on slide using nutrient solution.
APRIL	Human Reproduction Principles of Inheritance	Oogenesis, menstrual cycle, fertilization. Embryo development, implantation, pregnancy, parturition. Sexually transmitted diseases (STD), Birth control – Need and Methods, Contraception and Medical Termination of Pregnancy (MTP); Amniocentesis; Infertility and assisted reproductive technologies. Mendelian Inheritance; Incomplete dominance. Co-dominance, Multiple alleles	Class room discussions on reproductive health and STDs. Identification of slides of TS of Ovary and Testes. Debate on the topic- Should sex education start at middle school?

<p>MAY</p>	<p>Principles of Inheritance</p>	<p>Inheritance of blood groups, Pleiotropy. Genetic Disorders- Mendelian and chromosomal disorders.</p>	<p>Classroom discussions on MTP. Study of common Mendelian traits using Pedigree charts.</p>
<p>JUNE</p>	<p>Molecular Basis of Inheritance Evolution</p>	<p>Pedigree charts and their analysis. Genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; Transcription, genetic code, translation; Gene expression and regulation - Lac Operon; human genome project; DNA fingerprinting. Evolution- Inherited and acquired traits, theories of origin of life, evidences of evolution, Hardy-Weinberg's principle, Human evolution.</p>	<p>Isolation of DNA from plant specimen. Homologous and analogous organs.</p>
<p>JULY</p>	<p>Biotechnology- Principles and Processes Applications of Biotechnology</p>	<p>Genetic engineering (Recombinant DNA technology). Application of Biotechnology in health and agriculture: Human insulin and vaccine production. Gene therapy; Genetically modified organisms-Bt crops; Transgenic Animals; Bio piracy and patents. Pathogens; parasites causing human diseases (Malaria, Filariasis, Ascariasis, Typhoid, Pneumonia, common cold, amoebiasis, ring worm); Basic concepts of immunology – vaccines. Cancer, HIV and AIDS; Adolescence, drug and alcohol abuse.</p>	<p>Detailed class room discussions on AIDS and its effect on society. Sharing ideas/ discussions on alcohol/ drug abuse and its effects.</p>

<p style="text-align: center;">AUGUST</p>	<p style="text-align: center;">Microbes in Human Welfare</p> <p style="text-align: center;">Organisms and Population</p>	<p>Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use.</p> <p>Population and ecological adaptations; population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution.</p>	<p>Studying population density and frequency of plants.</p> <p>Seminar on some topics.</p> <p>Symbiotic association in root nodules of leguminous plants, <i>Cuscuta</i> on host, lichens.</p>
<p style="text-align: center;">SEPTEMBER</p>	<p style="text-align: center;">Ecosystem</p> <p style="text-align: center;">Biodiversity and its Conservation</p>	<p>Productivity, decomposition, energy flow, ecological pyramids.</p> <p>Biodiversity - Concept, patterns, importance; loss of biodiversity; biodiversity conservation</p> <p>Hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.</p>	<p>Seminar by students on topics from the Biodiversity.</p> <p>Study of soil samples for its texture, pH, water holding capacity and moisture content.</p>