Bishop Milner CATHOLIC COLLEGE

Year 12 CURRICULUM PLAN for BIOLOGY

The curriculum for this stage of students' education has been designed to build upon their prior knowledge from GCSE Biology. A-level Biology will give you the skills to make connections and associations with all living things around you. Biology literally means the study of life and if that's not important, what is? Being such a broad topic, you're bound to find a specific area of interest, plus it opens the door to a fantastic range of interesting careers. Studying A-level Biology at university gives you all sorts of exciting career options, including: Doctor, Clinical molecular geneticist, Nature conservation officer, Pharmacologist, Research scientist, Vet, Secondary school teacher, Marine biologist & Dentist.

HALF TERM 1: Biological Molecules

STUDENTS MUST KNOW:

- The structure & function of carbohydrates, amino acids, proteins & lipids.
- The structure & function of enzymes.
- Factors that affect the rate of enzymes.
- The structure & function of nucleic acids & DNA.
- The properties of water.

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 2: Cells

STUDENTS MUST KNOW:

- Methods of studying cells and how light & electron microscopes work.
- Eukaryotic cell structure.
- How cells become specialised.
- Prokaryotic cell structure and viruses.
- How cells reproduce using mitosis & the cell cycle.
- The structure & function of cell membranes.
- How molecules enter & leave cells.
- How cell recognition and immunity work.
- The function of antibodies and vaccines.

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 3: Organisms & exchanging substances with their environment - 2

STUDENTS MUST KNOW:

- How gas exchange occurs in insects, fish, mammals & plants.
- The structure & function of human lungs.
- How breathing occurs & is regulated.
- How enzymes bring about digestion.
- How molecules are absorbed into the blood.

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 4: Organisms & exchanging substances with their environment -1

STUDENTS MUST KNOW:

- How mass transport mechanisms occur.
- The function of blood & haemoglobin.
- The structure of the heart.
- Blood vessel structure and function.
- The human circulatory system.
- How transport occurs in plant.
- The structure & function of xylem and phloem.

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 5: Genetic information, variation & relationships between organisms

STUDENTS MUST KNOW:

- How DNA stores information using a triplet code.
- The structure of chromosomes & DNA.
- The structure of RNA.
- How protein synthesis occurs.
- Genetic diversity & mutations.
- Meiosis & variation.
- How genetic diversity & adaptions drive evolution.
- Types of evolutionary selection.

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 6: Genetic information, variation & relationships between organisms

STUDENTS MUST KNOW:

- Species and taxonomy.
- How organisms are classified.
- How diversity occurs & affects communities.
- Species diversity & human activity.
- Investigating diversity.

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

Embedding this knowledge can be supported at home by using the AQA website, text books and suitable revision guides.