

Growth and Differentiation

- In this unit, students will develop their understanding of cell structure and specialisation.
- Students will learn to classify cells as eukaryotic or prokaryotic according to some basic features and revisit the function of the main sub-cellular structures.
- Students will have another opportunity to use microscopes to investigate cells and learn how scientists now use electron microscopes to study cells in more detail.
- Students will also have the opportunity to investigate bacterial growth using agar and develop their skills in using aseptic techniques.

Genetics

- In this unit, pupils will revisit the concept of reproduction and build on this to learn how characteristics are inherited.
- They will study the benefits of different types of reproduction to different organisms. They will be introduced to the process of meiosis and how this gives rise to the gametes of different organisms.
- Pupils will be formally introduced to heredity and learn how the scientific community developed an understanding of inheritance over time.

YEAR 11 –CURRICULUM

Feedback and Control

- Students learn about the nervous system, its structure and function and how this enables the body to coordinate response
- Students learn about the different systems involved in maintaining homeostasis, the chemicals they produce and the changes they cause

Ecology

- Students learn how an ecosystem is organised and factors that affect both the ecosystem and organisms living in it
- The relationship of predator and prey is explored and how this changes over time
- Students explore the impact of environmental change and how farming, biotechnology and food security are affected

Plants and Material Cycling

- Students further their knowledge of plant biology to include understanding of the structure and function of the xylem and phloem
- Students explore how the plant is adapted for the transport of substances needed for and produced by photosynthesis
- Students investigate the rate of photosynthesis
- Students learn about how materials are cycled in the atmosphere/ environment

Controlling Reproduction

- Students learn to distinguish between sexual and asexual reproduction
- Students explore the role of hormones in bringing about change in the body such as during the menstrual cycle

Controlling Nature

- Students learn how technology allows for the manipulation of DNA and genomes to bring about desired changes and a range of beneficial outcomes.

Evolution

- Students learn the process of evolution by natural selection as an example of how scientific ideas change over time in light of new evidence.
- Students explore how organisms are classified based upon their features

Revision of Biology – PPE's used to identify priority areas.