

Curriculum Intent

Biology is the science of life and a subject that all students can relate to in many ways. The key stage 3 Biology course aims to build on this. It encourages students to develop an interest and understanding of Biology from the cell to whole organisms.

The course aims for all students to:

- know how to use specialist Biology vocabulary
- bridge the gap between key stage 2 and 4 by increasing their biological knowledge and developing their ability to apply their knowledge to unfamiliar situations, also, to further develop their enquiry skills
- develop practical skills to prepare them for the required practical activities of GCSE.
- develop an improved understanding of cells, whole organisms and interactions between organisms
- embed core concepts so that they can access and apply the key skills needed to enjoy and succeed in Biology

Autumn Term | Cells

Students will learn:-

- The levels of organisation within multicellular organisms
- The structure of the skeleton and how it works
- The structure of plant and animal cells
- How substances move in and out of cells by diffusion
- Unicellular organisms and how they survive with just one cell

What does excellence look like?

- Interpret information to explain the functions of several organ systems.
- Explain the link between structure and functions in the muscular skeletal system and why some organs contain muscle tissue.
- Explain the functions of the components of a cell by linking them to life processes.
- Explain the process of diffusion
- Describe the structure and function of amoeba and euglena

Knowledge, understanding & Skills

- Describe the hierarchy of organisation in a multi-cellular organism.
- Know the main parts of the skeleton and describe how muscles work to bring about movement.
- Use a light microscope to draw and observe cells. ✓ Identify plant and animal cells and compare and contrast these two types of cells.
- Name some substances that move in and out of cells and describe the process of diffusion
- Describe what a unicellular organism is and name an example and demonstrates understanding of visual language



How will we assess impact?

- Peer and self-assessment
- Previous lesson recap quiz
- Land mark tasks
- End of topic test

How is homework used to enhance learning?

Kerboodle

BBC bitesize

AES student science website

Suggested homework tasks

- Learn spelling and definitions of key words.
- Researching hip replacements.
- Research the development of the microscope.
- Write a short article for a school newspaper telling students how similar they are to an amoeba



Spring Term | Reproduction and Variation in Mammals

Students will learn:-

How Variation occurs between organisms
How mammals reproduce

How is homework used to enhance learning?

- Kerboodle
- BBC bitesize
- AES student science website

Suggested homework tasks

Learn spelling and definitions of key words.

Make a leaflet for primary school students about how the egg and sperm meet and produce an embryo

How will we assess impact? (3D)

Peer and self-assessment
Previous lesson recap quiz
Land mark tasks
End of topic test

Knowledge, understanding & Skills

The meaning of variation and the different types

Be able to distinguish between different types of variation

Be able to record results in an appropriate format and represent these results graphically

Explain the link between variation and adaptation

Know the changes that take place in humans during puberty

Be able to label diagrams of the main parts of the male and female reproductive systems and be able to describe the function of the labelled parts.

Know the stages in the process of fertilization, implantation, development and birth

Know the menstrual cycle prepares the female for pregnancy and stops if the egg is fertilised by a sperm.

What does excellence look like?

Predict implications of a change in the environment on a population.

Use the ideas of variation to explain why one species may adapt better than another to environmental change.

Critique a claim that a particular characteristic is inherited or environmental.

Summer Term | Ecosystems and Plant Reproduction

Students will learn:-

- How organisms interact within an ecosystem
- What happens to organisms if ecosystems change
- How flowering plants reproduce.

How is homework used to enhance learning?

- Kerboodle
- BBC bitesize
- AES student science website

Suggested homework tasks

- Learn spelling and definitions of key words.
- Plan an investigation to see how far different types of seeds can be dispersed

Knowledge, understanding & Skills

- Describe what is meant by a food chain and a food web
- Combine food chains to form a food web.
- Know that organisms in a food web (decomposers, producers and consumers) depend on each other for nutrients. So, a change in one population leads to changes in others.
- Explain that the population of a species is affected by various factors e.g. the number of its predators and prey, disease, pollution and competition
- Identify parts of the flower and link their structure to their function.
- Describe the main steps that take place when a plant reproduces.
- Suggest how a plant carried out seed dispersal based on the features of its fruit or seed.

How will we assess impact? (3D)

Peer and self-assessment
Previous lesson recap quiz
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What does excellence look like?

- Suggest what might happen when an unfamiliar species is introduced into a food web
- Develop an argument about how toxic substances can accumulate in human food.
- Make a deduction based on data about what caused a change in the population of a species.
- Compare and contrast of wind pollinated and insect pollinated plants.
- Suggest how plant breeders use knowledge of pollination to carry out selective breeding.
- Develop an argument why a particular plant structure increases the likelihood of successful production of offspring.



International Opportunities

Visits Programmes

Nausicaa - marine centre

Audomarois Marshes – ecology/ecosystems

Within the curriculum

The KS3 Biology curriculum is designed to introduce students to the key scientific concepts, supported through the study of international examples and theories.

Students are encouraged to engage with scientific concepts and theories beyond the syllabus by exploring key examples of international collaboration, or scientific discovery where the common language of scientific discovery is utilised.

Reference is additionally made to key scientists with connections to countries and cities visited as part of the school's international exchange programme.