



Biology Curriculum Intent

Our aim is to encourage students to understand and show genuine interest, enthusiasms and curiosity for the biological world around them. We strive for our students to explore, question and challenge biological theory and practical concepts. Our students will develop the skills of independence as well as collaboration through both theoretical and scientific practical skills. Students will develop their scientific literacy through a scholarly approach to planning, predicting, observing, designing, analysing and evaluating. This specialist vocabulary along with application of mathematical skills will enable them to have a full grounding in scientific enquiry.



Y7 Biology Curriculum Map

Big Idea: Organisms

- Plant and animal cells
- Using microscopes
- Specialised cells
- Levels of organisation
- The skeleton
- Joints and muscles

To be able to answer questions such as:

- *What are organisms made from?*
- *Are all cells the same?*
- *How can we see cells?*
- *How does our body move?*

Big Idea: Ecosystems

- Food chains and webs
- Interdependence between organisms
- Competition between organisms
- Flowers and pollination
- Seeds and germination

To be able to answer questions such as:

- *How do organisms rely on each other?*
- *How do plants reproduce?*
- *What happens if food chains are disrupted?*
- *Why do plants and animals compete?*

Big Idea: Genes

- Adolescence and puberty
- Reproductive systems
- The menstrual cycle and fertilisation
- Foetal development
- Causes and types of variation
- Adaptations

To be able to answer questions such as:

- *Why do changes occur during adolescence?*
- *Where do babies come from?*
- *Why does everyone look different?*



Y8 Biology Curriculum Map

Autumn Term – Organisms

Half Term 1 – Digestion

- Nutrients in food
- Testing for food molecules
- Unhealthy diets
- The digestive system
- Bacteria and enzymes in digestion

To be able to answer questions such as:

- *What makes a 'healthy diet'?*
- *How does the food we eat affect our bodies?*
- *How do microorganisms help digest food?*

Half Term 2 – Breathing

- The respiratory system
- Exchange of gases in the lungs
- The effect of smoking
- The effect of alcohol
- The effect of drugs

To be able to answer questions such as:

- *How does oxygen get into our bodies?*
- *Why is oxygen important?*
- *Why is smoking bad for you?*

Summer Term - Genes

Half Term 1 – Evolution

- Artificial Selection
- Natural Selection
- Charles Darwin
- Extinction and fossils
- Preserving biodiversity

To be able to answer questions such as:

- *How do organisms change over time?*
- *Why were Charles Darwin's ideas so important?*
- *How can we prevent organisms from extinction?*

Half Term 2 – Inheritance

- Inheritance of characteristics
- The importance of DNA
- Genetics
- Genetic engineering
- Genetic disorders

To be able to answer questions such as:

- *Why do we look similar to our parents?*
- *Why are some characteristics more common than others?*
- *Can your genes be changed?*

Spring Term - Ecosystems

Half Term 1 – Respiration

- Aerobic Respiration
- The importance of exercise
- Anaerobic Respiration
- Using bacteria
- Using yeast

To be able to answer questions such as:

- *How is energy released from the food we eat?*
- *What are the short and long term effects of exercise?*
- *How have humans utilised biotechnology?*

Half Term 2 – Photosynthesis

- How photosynthesis works
- The structure and function of leaves
- Investigating photosynthesis
- Plant adaptations
- Plant minerals

To be able to answer questions such as:

- *How do plants make their own food?*
- *Why are plants important in ecosystems?*
- *Can plants get sick?*



Y9 Biology Curriculum Map

KS4- Y9 GCSE Biology (AQA course begins)

TERM 1

B1- Cell structure and transport

- Animal, plant, bacterial cells and cell specialisation
- Microscopy required practical and maths skills in Biology
- Diffusion, osmosis and active transport
- Osmosis required practical and maths skills in Biology
- Surface area to volume ratio and exchange of substances
 - B2- Cell division
 - Mitosis and stem cells

KS4- Y9 GCSE Biology

TERM 2

B3- Organisation and the Digestive system

- Tissues, organs, and organ systems
- Digestive system and enzymes
- Food tests required practical
- Enzyme required practical and maths skills in Biology

B4- Organising animals and plants

- Components of blood and blood vessels
- Structure and function of the heart
- Heart dissection required practical
 - Breathing and gas exchange
- Exchange and transport systems in plants
 - Transpiration

KS4- Y9 GCSE Biology

TERM 3

B5- Communicable diseases

- Health and disease and analysing data
- Pathogens that cause disease, bacterial, viral and fungal diseases
- Growing bacteria in the lab and microbiology required practical with maths skills in Biology
 - Preventing infection
- Human defences to disease
- Plant defences to diseases



KS3 Science Support and Interventions

1. Targeted question booklets used and available of exam style questions prior to assessments.
2. Revision activities developed throughout scheme of work to recall knowledge and commit to long term memory
3. Production of Knowledge organisers where applicable. Promotion of quality by sharing best gcse and A level examples.
4. Y12 enrichment opportunities via Peer mentoring in KS3 lessons where timetable allows.
5. Specific homework set as per homework timetable integrated with S.O.W with opportunities for immediate feedback and improvement.
6. DIRT PowerPoints completed after each assessment with specific target work consistent across the whole year group and specific for individual areas requiring improvement.
7. HOD initially identifies low achievers from class data from SIMS and interim data and discusses any concerns with student.
8. Opportunity to buy reduced price KS3 Science revision guide or borrow one from school if necessary.
9. Low achievers in EOY exams given summer work to complete in order to address gaps in knowledge.
10. HOY and Parental involvement.

Use AQA Kerboodle in order to access online textbook, chapter summary and bump up your grade consolidation activities:

www.kerboodle.com

Institution Code: do7