



# THOMAS ALLEYNE'S HIGH SCHOOL

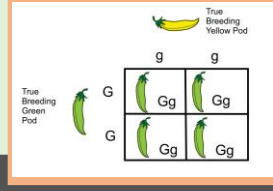
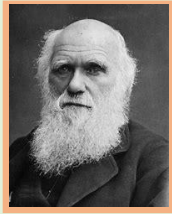
## GCSE BIOLOGY: LEARNING JOURNEY

The exams take place in May/June of Year 11. The questions will all fall into one of three styles assessing key skills:

- AO1: Demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures
- AO2: Apply knowledge and understanding of scientific ideas, processes, techniques and procedures:
  - in a theoretical context
  - in a practical context
  - when handling qualitative data
  - when handling quantitative data
- AO3: Analyse, interpret and evaluate scientific information, ideas and evidence, including in relation to issues, to:
  - make judgements and reach conclusions
  - develop and refine practical design and procedures.

6TH FORM

MAY Y11



JAN Y11

CEIAG 6th Form interviews take place Jan of Y11

POST-16 PATHWAYS

Final Exam

Natural Selection

Genetic Technologies

Mendelian Inheritance

Types of Reproduction

INHERITANCE, VARIATION and EVOLUTION

College/Apprenticeships



Students study the impact that human activities are having on the environment (eg global warming and deforestation) and how we influence natural cycles such as the carbon and decay cycles.

Students evaluate conservation efforts and learn how technologies and practices, such as the use of fermenters, could help to provide sustainable sources of food in the future.

End of Year 10 Synoptic Assessment

Students turn their focus to infectious diseases and how we defend against them.

Monoclonal Antibodies

Triple students learn about the uses of monoclonal antibodies

Testing new medicines



Students learn about the rigorous process of developing new medicines, including the use of placebos and double-blind trials

Students will look at ways of studying ecosystems and carry out a practical to estimate the abundance and distribution of organisms on the school fields

Studying Ecosystems and Sampling Techniques Required Practical

Impact of Humans on the Environment

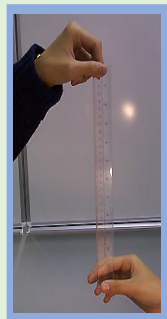
Conservation and Sustainability

Year 11

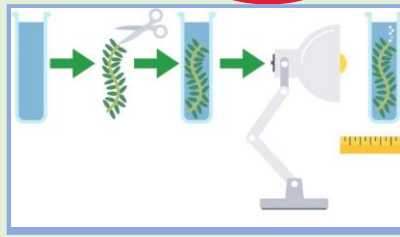
INFECTION and RESPONSE

Communicable diseases

Ecology



Students learn about nervous and hormonal control of conditions within organisms



Students carry out a required practical to investigate how a change in an environmental factor affects the rate of photosynthesis.

The first module in Year 10 is Bioenergetics, where students learn about the importance of photosynthesis and respiration

Triple students explore the role of hormones in the kidneys and in plants.

Hormonal Responses

Nervous Responses and Reaction Time Required Practical

Homeostasis and Response

Photosynthesis Required Practical

BIOENERGETICS

Students learn about glucose regulation and the hormones in the menstrual cycle

Year 10

Students will look at diffusion and the relationship to surface area and volume ratio, as well as active transport and osmosis. The required practical helps to build confidence in carrying out investigations methodically and recording their data with precision.

Y9 common science assessments. In the Autumn term students will complete assessments to ensure they are on the appropriate Science pathway

Students in triple science sets will learn how to safely culture microorganisms.



Y9 CEIAG interviews. Students select option subjects

Non-communicable diseases

Students continue to study the foundations of Biology by looking at how substances are transported across cell membranes.

Osmosis Required Practical

Aseptic Techniques and Culturing Microorganisms Required Practical

ORGANISATION

Organ Systems

Food Tests and Enzyme Activity Required Practical's

The course introduces students to various types of diseases and their risk factors

Transport of substances

Students look at the cell cycle, including mitosis, as well as the role of stem cells. The ethical implications of stem cell use is debated.



In the Spring term students study the second module, organisation, which looks at organ systems and how they work together to ensure correct functioning of the whole organism

Students learn about the digestive system and the importance of enzymes in reactions within organisms. Later in the module, students learn about the respiratory and cardiovascular systems

Two more required practical's further develop practical and analysis techniques

Stem cells and their use

The cell cycle and mitosis

Microscopy Required Practical

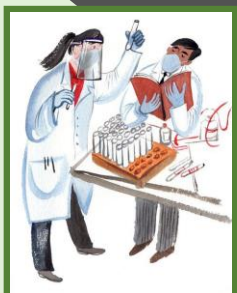
Types of cells and cell structure

CELL BIOLOGY

All year 9 students begin with GCSE content from September

Year 9

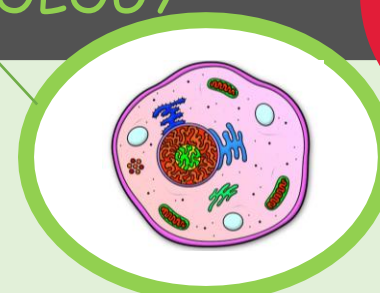
Y8 Taster Sessions / Transition days



Students will learn and reinforce practical scientific techniques and safety procedures through the course

Students will carry out and analyse a series of required practical activities throughout the course. These practical's will be assessed in the final exams in the Summer of year 11.

Students begin their Biology journey at Thomas Alleyne's High School by studying the foundational concepts of all life: cells and all of the sub-cellular structures which make them function in a coherent way.



In Biology we study the AQA syllabus from Year 9 to Year 13