Taverham Sixth Form
One vision. Our passion. Your future.

Biology

Good Choice!

Some of the most innovative and exciting work in science occurs at the boundaries where biological knowledge is combined with techniques from chemistry, physics, geography, engineering, psychology and maths. There are increasing job opportunities, not only in fields commonly associated with biology such as health care, environmental studies and sports science but also in new areas such as biotechnology, bioengineering, biophysics and bioengineering. So you have made a very sensible decision choosing biology as one of your A-level subjects.

We hope that you will find the information in this pack useful.

Course outline

AQA Biology (A level 7402)

Topics Covered

A-level biology lasts two years, with exams at the end of the second year. The table below shows the topics you will study in each year.

First year	Second year
1. Biological molecules 2. Cells 3. Organisms exchange substances with their environment 4. Genetic information, variation and relationships between organisms	5. Energy transfers in and between organisms 6. Organisms respond to changes in their internal and external environments 7. Genetics, populations, evolution and ecosystems 8. The control of gene expression

Practicals

Biology, like all sciences, is a practical subject. Throughout the course you will carry out practical activities including:

- using microscopes to see cell division
- dissection of animal or plant systems
- aseptic technique to study microbial growth
- investigating activity within cells
- investigating animal behaviours
- investigating distributions of species in the environment

Entry Requirements

Six GCSEs at Grade 4 or above including at least Grade 4 for English Language and Maths and Grade 5 biology (higher tier) *or* Grade 5/5 combined science (higher tier).

A-level Biology

Biology A-level 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.

Possible degree options

Popular degree courses taken by students who have an A-level in biology are:

- anatomy
- biology
- medicine
- pharmacy chemistry
- physiology and pathology pharmacology
- psychology
- sport and exercise science
- toxicology

Find out more

aqa.org.uk/science

Possible career options

Studying A-level biology at university gives you all sorts of exciting career options, including:

- clinical molecular geneticist
- dentist
- doctor
- marine biologist
- nature conservation officer
- pharmacologist
- research scientist
- secondary school teacher
- vet

One giant step....

The step up from GCSEs to GCE A-levels is a big one – much bigger than from KS3 to GCSE! In addition, the **way** you study changes. You will be expected to be more responsible for your own learning. This is in preparation for studying at college or university where there are no teachers to "nag" you to do your work. You either do it yourself, or you fail, having run up a debt of perhaps tens of thousands of pounds!

Some successful strategies….

- Know the course you are studying! Download the biology specification and familiarise yourself with it.
- Your GCSE biology knowledge will be considered to be assumed knowledge i.e. you already **know** and **understand** it completely. The aim is not to re-teach GCSE so that you finally understand it; the aim is to use this knowledge as the starting point for a higher level. Whatever grade you are targeted to achieve at GCSE, then use the summer to bring yourself up to an even higher standard.
- Attending lessons is not enough. You will be expected to spend **at least** the same amount of time studying biology outside of timetabled lessons, approximately nine hours a fortnight!
- Notes that you take during lessons will not be sufficient. These notes will only provide a framework. You will be expected to add to them and enhance them from your independent study.
- You should do as much background reading as possible. Use the science magazines and biology journals available in the library. You will be expected to provide evidence of your background reading.
- If you are finding GCE A-level biology easy, then you are probably not working hard enough!

In September you will be expected to hit the ground running

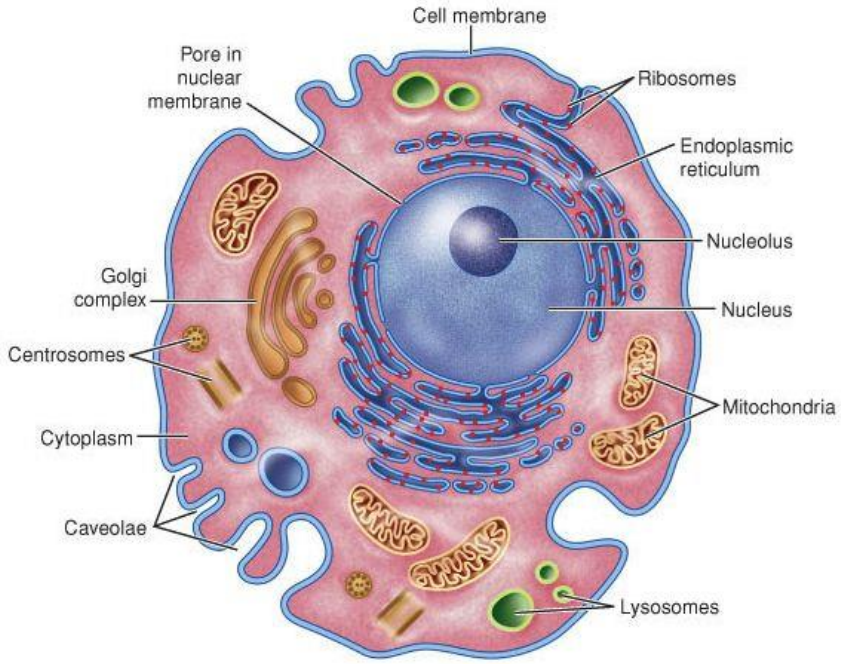
- Your attendance should be 100%. If absent you must ensure that you catch up as soon as possible.
- When carrying out practical work you need to carry out a risk assessment and follow appropriate safety instructions.
- Lessons will mainly take the form of tutoring by the teacher, seminar-style group work, some practical work, discussions, model making and games.
- In your own time you will be expected to undertake independent learning tasks – via Teams, research tasks and class presentations.
- You need to produce a set of notes based on class notes, information from your textbook and additional reading e.g. bio fact sheets, articles from the Biological Sciences Review, internet sourced material, podcasts, YouTube videos.
- Throughout the course you should expect to be:
  - tested on a regular basis on material covered in class
  - required to complete homework tasks to a high standard, meeting agreed deadlines. Non completion of homework tasks may result in missing lesson time and may result in contact being made with parents.
  - required to submit your notes for regular inspection
  - required to provide proof of independent study
  - an active participant in class and to be questioned at random

Please be aware that if you are eligible for post 16 bursary funding the cost of relevant books and resources may be covered depending on family circumstances – please ask in the sixth form office for further details.

Preparation for September

Please bring the completed task to your first lesson in September

Please make notes on the following specification points. Your notes should contain labelled diagrams (drawings, light and electron microscope photos) and information about what each organelle does. Use biology text books appropriate to the level and internet resources.



The structure of eukaryotic cells, restricted to the structure and function of:

- cell-surface membrane
- nucleus (containing chromosomes, consisting of protein-bound, linear DNA, and one or more nucleoli)
- mitochondria
- chloroplasts (in plants and algae)
- Golgi apparatus and Golgi vesicles
- lysosomes (a type of Golgi vesicle that releases lysozymes)
- ribosomes
- rough endoplasmic reticulum and smooth endoplasmic reticulum
- cell wall (in plants, algae and fungi)
- cell vacuole (in plants)

If you require further information please contact Mrs Kinsley
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