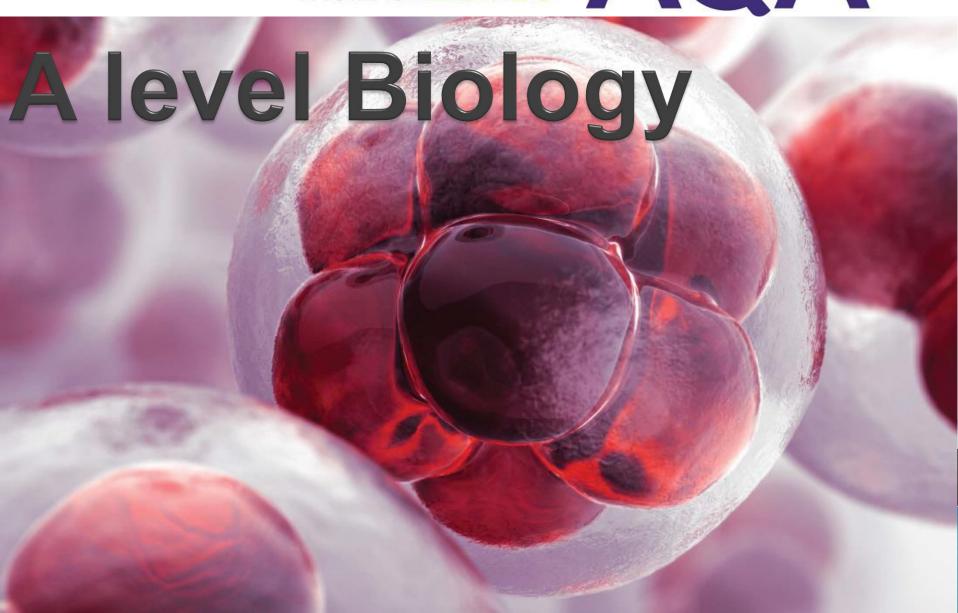
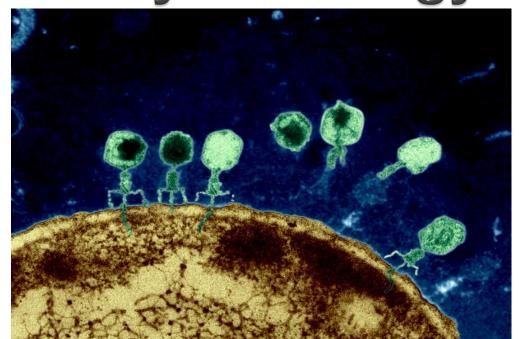
# sixthf6rm AQA



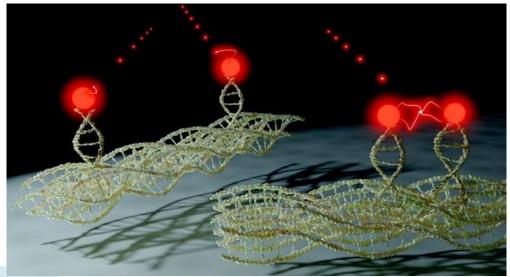


## Why is Biology important?







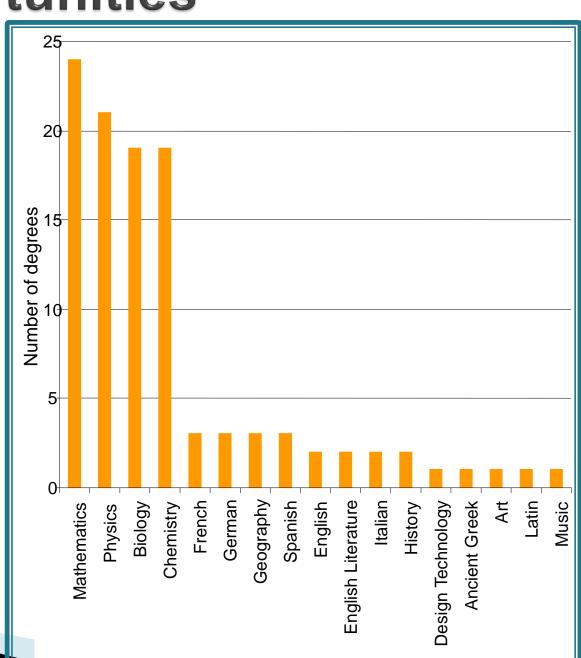


## Why study A-Level Biology?

Broad understanding of key Biological concepts Application of understanding Practical and organisational skills Interpret and critically analyse data Evaluative skills Research skills Problem solving Excellent foundation for further study

Post-18 opportunities

- Highly valued as a facilitating subject for many courses
- Russell group
   Universities value
   Biology as one of their
   preferred subjects
- Ever increasing number of apprenticeships offered in the field of Biology
- Encompasses a vast number of disciplines and skills that are valuable to employers



Paramedical Audiology Biotechnology **Forensics** Dentistry **Psychiatry Ophthalmics** Marine Food Medicine biology science Physiotherapy **Prosthetics** Pharmacology **Dietetics** Laboratory Radiography **Engineering** 



Opportunity Progress Individuality



Post-18 Recent Biologist
Destinations sixthform

# About the course... AQA

- Biological molecules (page 11)
- Cells (page 19)
- Organisms exchange substances with their environment (page 25)
- Genetic information, variation and relationships between organisms (page 30)
- Energy transfers in and between organisms (A-level only) (page 36)
- Organisms respond to changes in their internal and external environments (A-level only) (page 41)
- Genetics, populations, evolution and ecosystems (A-level only) (page 47)
- The control of gene expression (A-level only) (page 51)





#### Paper 1

#### What's assessed

 Any content from topics
 1-4, including relevant practical skills

#### Assessed

- written exam: 2 hours
- 91 marks
- 35% of A-level

#### Questions

- 76 marks: a mixture of short and long answer questions
- 15 marks: extended response questions

#### Paper 2

#### What's assessed

 Any content from topics 5-8, including relevant practical skills

#### Assessed

- written exam: 2 hours
- 91 marks
- 35% of A-level

#### Questions

- 76 marks: a mixture of short and long answer questions
- 15 marks: comprehension question

#### Paper 3

#### What's assessed

 Any content from topics 1–8, including relevant practical skills

#### Assessed

- written exam: 2 hours
- 78 marks
- 30% of A-level

#### Questions

- 38 marks: structured questions, including practical techniques
- 15 marks: critical analysis of given experimental data
- 25 marks: one essay from a choice of two titles

## Practical work

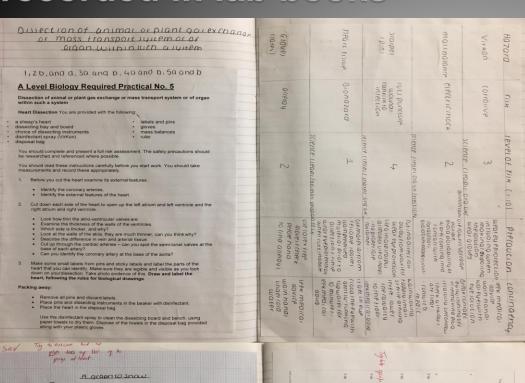
- Some of the practical content is required by AQA and you will be assessed on these both during the activity and in the exams.
- You will keep a lab book of the practicals as evidence.
- You will do 12 of these over 2 years.
- One practical will be on the fieldtrip in the summer of year 12.
- Successful completion leads to a practical endorsement certificate.





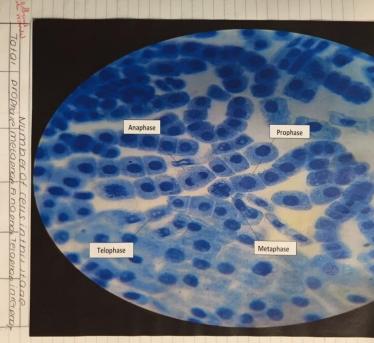


# Required practical work is recorded in lab books



Remove all pins and diseard labels. Place pins and diseasting instruments in the beaker with disinfectant. Place the heart in the disposal bag. Use the disinfectant spray to clean the dissecting board and bench, using paper towests for them. Dispose of the towels in the disposal bag provided along with your plastic gloves.	with information and the control of
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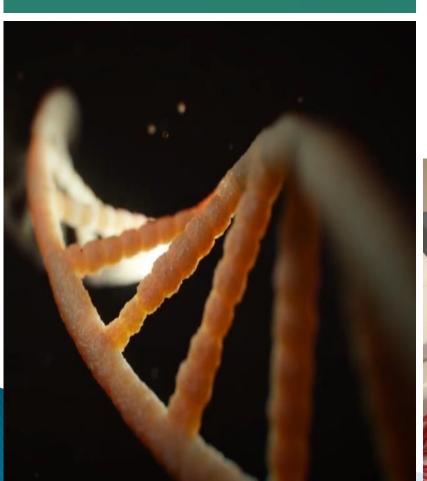


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Background research & skills development: students develop the knowledge and skills required to successfully complete research. This includes gaining secure level of knowledge and understanding of caDNAno software.

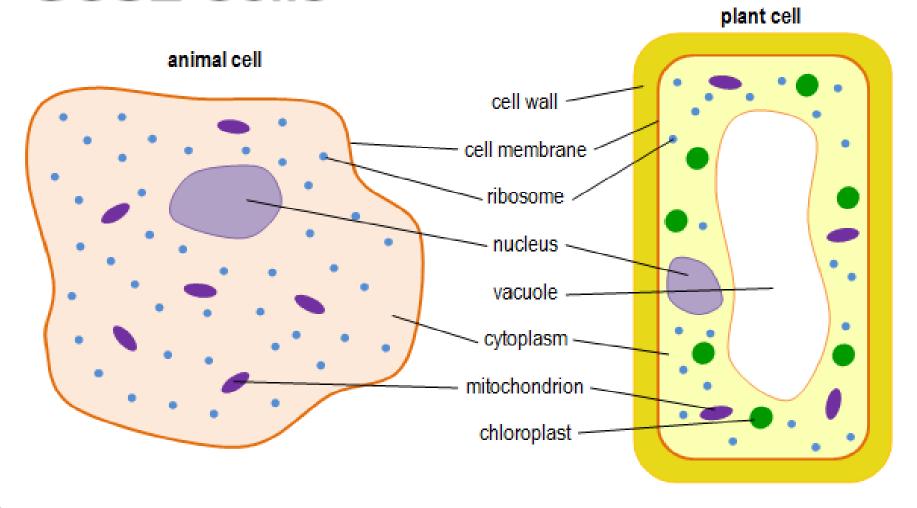
Design stage: Students design their own DNA nanostructure and get a chance to synthesise a predesigned DNA origami structure.

Artefact development and conference: Students produce an article, academic poster presentation or academic paper, based on their research process and/or findings with the aim of exhibiting at IRIS' conference.

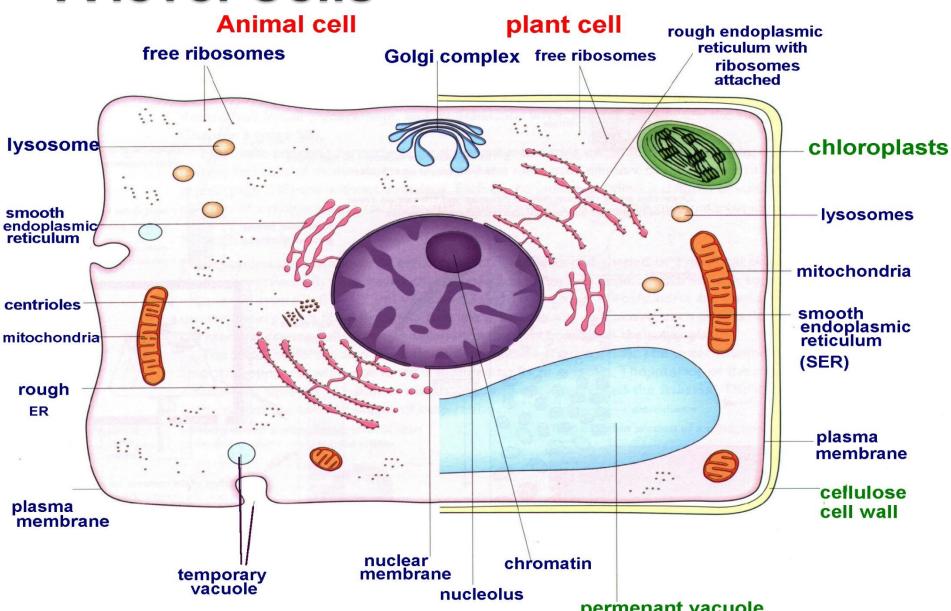


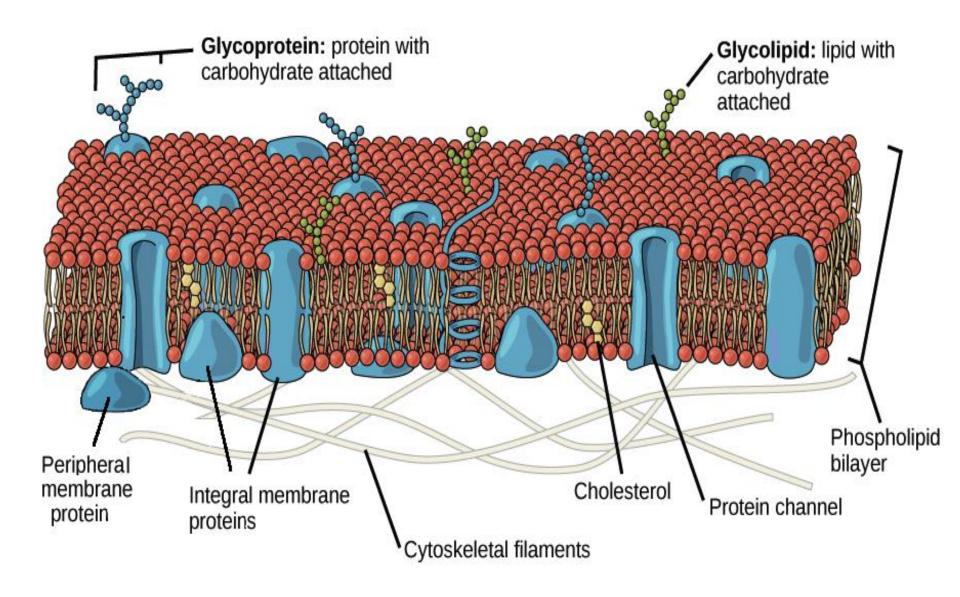
## A big step up...

## **GCSE Cells**



### A level Cells





glucose + oxygen — → carbon dioxide + water

$$C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O$$

### Much more detail!

Mitochondrial Matrix

· occurs in the cytopiasm GLYCOLYSIS KREBS (Y(LE · occurs in the matrix -6 carbon giucose Acetyl coenzyme A 2 ATP COENZYMEA 2ADP ACREATE hexose bisphosphate densarogenated OXAIDALETATE 2ADP+P. Resulted ZADP+P; 2 ATP 6 carbon ZATP NAD NAD citrate NAD 4 ( Compound reduced reduced 1 accarboxylation Pavced 2 x pyruvate ~ 3 carbon Carbon FAD NAD 46 Compound Products (net): 2ATP SUBSTRATE-level Phosphorylanion reduced 5 ( compound LINK REACTION · occurs in the matrix den yarogenated 4 ( (ompound ADP Pyruvate ~ 3 carbon decarboxylation NAD reduced reduced NAD Paecarboxylation denyarogenaiea acetyl (denzyme A Intermembrane Space H+ H+ H+ H+ H+ Cytochrome Cytochrome

