



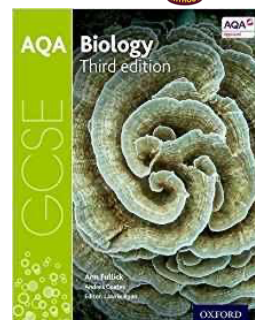
# Biology Overview

Term: Autumn

Year: 9

Teacher: Mr Alamgir Islam & Ms Fatima Mamache

Textbook title: AQA GCSE Biology Oxford



## What will we be covering this term?

### 1<sup>st</sup> Half Term:

#### Cell Biology:

**Cell structure** – This term, we will only cover the significant overlapping contents between Key Stage 3 and Key Stage 4. Students will revise and develop their understanding about microscopy and cells. They will be able to explain how the development of microscopy techniques, particularly electron microscopy, has enabled scientists to investigate the sub-cellular structures. Students will be able to differentiate between animal and plant cells, differentiate between eukaryotic and prokaryotic cells, and identify adaptations of specialised animal and plant cells. They should be able to define a tissue, an organ, and an organ system. Students will also learn about the transport of material into and out of cells by diffusion.

**Organisation and digestive system** - In this chapter, students will revise the principles of organisation. Building on their knowledge of differentiation and specialisation of cells, they should be able to define a tissue, an organ, and an organ system. They will study the human digestive system as an organ system in which several organs work together to digest and absorb food, breaking down large insoluble molecules so they can be absorbed into the bloodstream.

Students should understand the hierarchical organisation of the digestive system – for instance, the stomach is one organ, made up of muscular tissue, glandular tissue, and epithelial tissue, which digests food (especially protein).

By the end of the chapter, students should be familiar with enzyme action and understand that enzymes are proteins with a specific shape including the active site.

### 2<sup>nd</sup> Half Term:

**Organising animals and plants:** Students will study breathing and gas exchange, and should recognise the main structures of the gas exchange system along with their functions. They should know that gas exchange happens in the alveoli and describe adaptations of alveoli. They should be able to describe the processes of ventilation and gas exchange and the differences in composition of inhaled and exhaled air.

**Respiration:** This is a key concept that students should be confident with. This term, we will only cover the overlapping contents between key stage 3 and key stage 4. Students should be able to recall that this is one of the most important processes in living cells.



### **Teacher's Marking Key:**

Mark code	Means .....
SP	Spelling error
//	New paragraph needed
Work underlined	Indicate a word or phrase does not make sense
?	Not clear. Rewrite this section again to improve the expression.
FS	Write in full sentences
EX	Develop your explanation further using scientific keywords.
D	You need to add more detail.
EBI	Even better if
www	What went well
GR	Grammar error
P	Punctuation error

### **How will my child be assessed this term?**

There will be at least 2 assessed pieces this term.

In more detail;

**1<sup>st</sup> Assessment:** Cell structure

**2<sup>nd</sup> Assessment:** Organisation and digestive system & Organising animals and plant

At the end of the term there will summative exam that will test their knowledge for what they've covered during the course of the entire term.

### **How can I help my child in this subject?**

- Ensure homework is complete; you can track students' homework assignments at <https://www.showmyhomework.co.uk>
- Encouragement, praise, ensuring that they do their homework; and checking their student planner.
- Encouraging them to read around the subject.
- Their notes must be in order; discipline is essential.

### **Resources**

For independent study the following websites are recommended:

- Maths skills in GCSE Biology: <https://www.my-gcse-science.com/maths-skills-gcse-biology/>
- AQA specification: <https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF>
- BBC Bitesize: [http://www.bbc.co.uk/schools/gcsebitesize/science/add\\_aqa/](http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa/)
- Revision GCSE Biology: <http://www.gcse-science.com/pe.htm>
- Assessment resources: <https://www.aqa.org.uk/subjects/science/gcse/biology-8461/assessment-resources>



- GCSE exam questions organised by Topics & difficulty:

<https://www.savemyexams.co.uk/gcse-biology-aqa/>

### Communications

Please feel free to contact us at the school from 9.00-15:00 if you have any questions or concerns or contact me by email

[fatima.mamache@alkhairschool.org.uk](mailto:fatima.mamache@alkhairschool.org.uk) & [Alamgir.islam@alkhairschool.org.uk](mailto:Alamgir.islam@alkhairschool.org.uk)

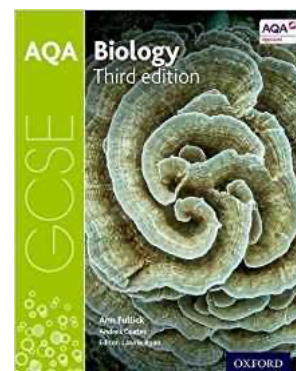
## Biology Overview

Term: Spring

Year: 9

Teacher: Ms Fatima Mamache & Mr Islam Alimger

Textbook title: AQA GCSE Chemistry Oxford



What will we be covering this term?

### **1<sup>st</sup> Half Term:**

***Respiration (Cont.):*** Students will study the response of humans to exercise, including changes in heart rate, breathing rate, and breakdown of glycogen, all to increase the rate of respiration in muscle cells. Students will look at mitochondria as the site of respiration, linking this with B1.2 Animal and plant cells and cell specialisation in B1.4 and B1.5. Students should be able to list examples of living processes that need the energy released from respiration.

In studying anaerobic respiration, students should be aware of this process in mammalian muscles, and be able to write the word equation. Students should be aware that anaerobic respiration occurs in yeast cells and some plant cells.

***Non-communicable disease:*** In this chapter, students will study non-communicable diseases and should understand what is meant by risk factors for a disease. Students should be aware of the risks of diseases from smoking. Students will study alcohol and health and will understand the effect of alcohol on the brain and liver, and of drinking alcohol during pregnancy. Finally, students will learn about the carcinogenic effects of ionising radiation.

### **2<sup>nd</sup> Half Term:**

***Genetics, variation, and evolution:*** This chapter students will learn about the causes of variation in terms of genetic, environmental, or a combination of both.

In studying evolution by natural selection, students will study the role of mutation in variation, understand the theory of evolution by survival of the fittest and natural selection, and be able to give examples.



***Adaptations, interdependent, and competition:*** In this chapter students have studied communities, environments, adaptations, and competition. There are a number of ecological terms including community, population, habitat, ecosystem, abiotic factor, and biotic factor, and students should recall the precise meaning of each.

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### **How will my child be assessed this term?**

There will be at least 2 assessed pieces this term.

In more detail;

**1<sup>st</sup> Assessment:** Respiration

**2<sup>nd</sup> Assessment:** Non-communicable disease & Genetics, variation, and evolution

At the end of the term there will summative exam that will test their knowledge for what they've covered during the course of the entire term.

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### ***Useful Websites***

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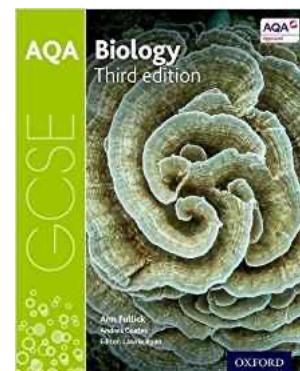
## Biology Overview

Term: Summer

Year: 9

Teacher: Mr Islam Alimger & Ms Fatima Mamache

Textbook title: AQA GCSE Chemistry Oxford:



### What will we be covering this term?

#### 1<sup>st</sup> Half Term:

***Adaptations, interdependent, and competition (Cont.):*** In this term students will continue studying about communities, environments, adaptations, and competition. They will understand how organisms are adapted to survive in many different conditions.

***Organising an ecosystem:*** In this chapter students will study how feeding relationships are represented in food chains. They should recall the main feeding relationships within a community and understand how the numbers of predators and prey are inter-related, including interpreting predator-prey population graphs.

Students have looked at mineral cycling and the microbes involved. They should understand how materials are recycled through the abiotic and biotic components of an ecosystem, and the importance of decay.

#### 2<sup>nd</sup> Half Term:

***Photosynthesis:*** In this chapter, students will study photosynthesis in both plants and algae. Students will study the adaptations of leaves to achieve maximum efficiency in photosynthesis. Students will study factors that affect the rate of photosynthesis. They should understand the concept of limiting factors.

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In more detail;

**1<sup>st</sup> Assessment:** Adaptations, interdependent, and competition

**2<sup>nd</sup> Assessment:** Organising an ecosystem & Photosynthesis

At the end of the term there will summative exam that will test their knowledge for what they've covered during the course of the entire term.

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