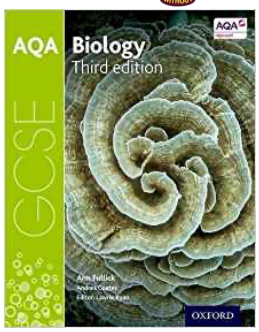
Separate Science - Biology Overview



Term: Autumn
Year: 11
Teacher: Mr Alamgir Islam
Textbook title: AQA GCSE Biology Oxford

What will we be covering this term?

1st Half Term:

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. 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.

Organising animals and plants II: In studying plant tissues and organs, students should be familiar with the different plant tissues and their functions. They should be able to state the functions of xylem and phloem tissue. In studying transpiration, they should understand the function of stomata and recognise factors that affect transpiration rate.

Preventing and treating disease: In this chapter, students will study the prevention of disease by vaccination. They should know how the immune system works and what is meant by an antigen. They should appreciate that the shapes of antigens and antibodies are complementary. They should understand what a vaccine contains and how it works, giving examples, and the concept of herd immunity.

Non-communicable disease: In this chapter, students will study non-communicable diseases and should understand what is meant by risk factors for a disease. They will analyse the impact of disease at several different levels. Finally, students will learn about the carcinogenic effects of ionising radiation.

2nd Half Term:

Communicable disease: Students should be able describe the different pathogens, the symptoms and treatments of a range of different plant diseases, and the different defense mechanisms of the plants.

Respiration: In this chapter students will study respiration, and should be able to recall that this is one of the most important processes in living cells. 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. They should link this with work on the heart and blood vessels in B4 *Organising animals and plants*.

Human nervous system: By the end of this chapter, students will be able to describe an electrical impulse accurately. They will study the brain, linking each area with its function. They will also study the structure and function of the human eye and the process of accommodation.

Hormonal coordination: Students will study the role of hormones in plants, and the tropism responses they cause. Higher-tier students should understand the use of plant hormones in agriculture and horticulture.

Teacher's Marking Key:

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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.
1st Assessment: Cells and organisation

2nd Assessment: Diseases and bioenergetics

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

Useful Websites

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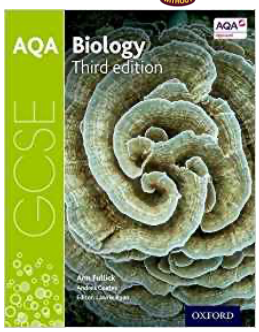

Term: Autumn
Year: 11
Teacher: Mr Alamgir Islam
Textbook title: AQA GCSE Biology Oxford

What will we be covering this term?

1st Half Term:

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. 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.

Organising animals and plants II: In studying plant tissues and organs, students should be familiar with the different plant tissues and their functions. They should recognise plant organs such as a leaf. They should be able to state the functions of xylem and phloem tissue. In studying transpiration, they should understand the function of stomata and recognise factors that affect transpiration rate.

Preventing and treating disease: In this chapter, students will study the prevention of disease by vaccination. They should know how the immune system works and what is meant by an antigen. They should appreciate that the shapes of antigens and antibodies are complementary. They should understand what a vaccine contains and how it works, giving examples, and the concept of herd immunity. Students will study the treatment of disease by drugs including painkillers and antibiotics.

Non-communicable disease: In this chapter, students will study non-communicable diseases and should understand what is meant by risk factors for a disease. They will analyse the impact of disease at several different levels.

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.

2nd Half Term:

Respiration: In this chapter students will study respiration and should be able to recall that this is one of the most important processes in living cells. 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.

In studying anaerobic respiration, students should be aware of this process in mammalian muscles and be able to write the word equation.

Human nervous system: By the end of this chapter, students will be able to describe an electrical impulse accurately. They will study the brain, linking each area with its function. They will also study the structure and function of the human eye and the process of accommodation.

Hormonal coordination: Students will study the role of hormones in plants, and the tropism responses they cause. Higher-tier students should understand the use of plant hormones in agriculture and horticulture.

Reproduction: All students should be able to outline asexual and sexual reproduction, and should be aware of the importance of meiosis, fertilisation, and variation in sexual reproduction. They should link this with work on chromosomes and mitosis and the cell cycle in B2 Cell division.

Teacher's Marking Key:

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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.
1st Assessment: Cells and organisation

2nd Assessment: Diseases and bioenergetics & Biological responses

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

Useful Websites

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- Revision GCSE Biology: http://www.gcsescience.com/pe.htm
- Assessment resources: https://www.aqa.org.uk/subjects/science/gcse/biology-8461/assessment-resources

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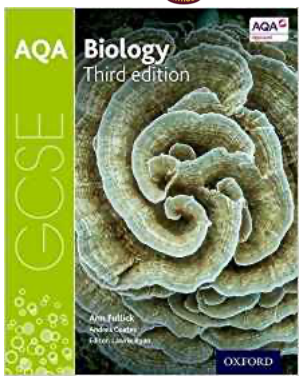

Term: Spring
Year: 11
Teacher: Mrs Alamgir Islam
Textbook title: AQA GCSE Chemistry Oxford

What will we be covering this term?

1st Half Term:
Reproduction: At the end of this chapter, students should be able to outline asexual and sexual reproduction, and should be aware of the importance of meiosis, fertilisation, and variation in sexual reproduction. They should link this with work on chromosomes and mitosis and the cell cycle in B2 Cell division.

Variation and Evolution: In studying evolution by natural selection, students should understand 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. Finally, students should recall different ways of creating clones, and be able to describe why they are useful.

In studying evolution by natural selection, students should understand 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.

2nd Half Term:
Genetic and evolution: This chapter students will learn about the causes of variation in terms of genetic, environmental, or a combination of both. They should link environmental variation with the effect of alcohol on a fetus in B7.5 Alcohol and other carcinogens.

Organising an ecosystem: In this chapter students will study how feeding relationships are represented in food chains. They should understand the importance of photosynthesis in feeding relationships, linking with work in B8 *Photosynthesis*. They should also understand how materials are recycled through the abiotic and biotic components of an ecosystem, and the importance of decay.

Biodiversity and ecosystems: In this chapter students will study biodiversity and ecosystems, starting with the reasons for and the effects of the human population explosion. Students should understand the effect of different types of pollution including land, water, and air pollution. Students should be able to outline the processes of deforestation and peat destruction. On the topic of maintaining biodiversity, all students should understand how waste, deforestation, and global warming affect biodiversity, and be able to give examples of some of the actions being taken to stop the reduction in biodiversity.

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How will my child be assessed this term?

There will be mock exams, these will include;

Biology Paper 1 – 1 hour 45 minutes
Biology Paper 2 – 1 hour 45 minutes

How can I help my child in this subject?

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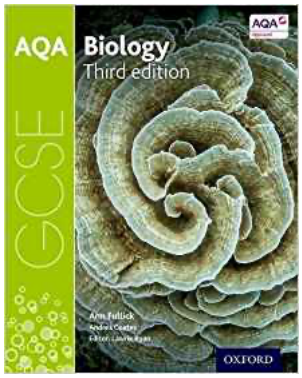
Comb. Science - Biology Overview



Term: Spring
Year: 11
Teacher: Mrs Alamgir Islam
Textbook title: AQA GCSE Chemistry Oxford

What will we be covering this term?

1st Half Term:
Reproduction: All students should be able to outline asexual and sexual reproduction, and should be aware of the importance of meiosis, fertilisation, and variation in sexual reproduction. They should link this with work on chromosomes and mitosis and the cell cycle in B2 Cell division.

Variation and Evolution: In studying evolution by natural selection, students should understand 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.

In studying evolution by natural selection, students should understand 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.

2nd Half Term:
Genetic and evolution: This chapter students will learn about the causes of variation in terms of genetic, environmental, or a combination of both. They should link environmental variation with the effect of alcohol on a fetus in B7.5 Alcohol and other carcinogens. 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.

Organising an ecosystem: In this chapter students will study how feeding relationships are represented in food chains. They should understand the importance of photosynthesis in feeding relationships, linking with work in B8 *Photosynthesis*. 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.

Biodiversity and ecosystems: In this chapter students will study biodiversity and ecosystems, starting with the reasons for and the effects of the human population explosion. Students should understand the effect of different types of pollution including land, water, and air pollution. Students should be able to outline the processes of deforestation and peat destruction. On the topic of maintaining biodiversity, all students should understand how waste, deforestation, and global warming affect biodiversity, and be able to give examples of some of the actions being taken to stop the reduction in biodiversity.

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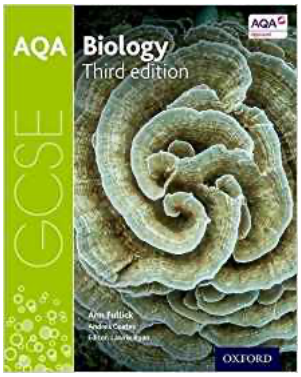
Biology Overview



Term: Summer
Year: 11
Teacher: Mr Alamgir Islam
Textbook title: AQA GCSE Biology Oxford:

What will we be covering this term?

During this term, pupils would be revising for their GCSE exams and practising past paper questions.

Teacher's Marking Key:

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