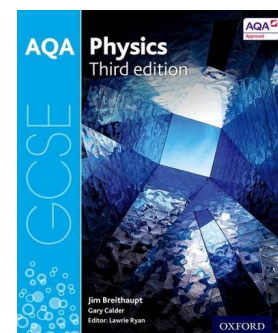




Physics Overview

Term: Autumn
Year: 9
Teacher: Mrs Aziza Helaly
Textbook title: AQA GCSE Physics Oxford



What will we be covering this term?

1st Half Term:

Energy - Conservation and dissipation of energy: Energy is a fundamental concept that students should be confident with. This term, students will study the significant overlapping contents between Key Stage 3 and Key Stage 4. This includes development of an energy stores model and the processes, such as forces and electrical currents, through which energy can be transferred. They will revise how to measure the work done by a force acting over a distance. Finally, students will learn about the rate of energy transfer in different systems through the concept of power and how this power rating can be used to determine total energy change over time.

Energy transfer by heating: In this chapter, students will revise and develop their understanding of the heating and cooling processes, which transfer energy within a material or from one object to another. They will investigate thermal conductivity and the differences in the processes of thermal conduction in metals and non-metals.

2nd Half Term:

Energy resources: In this chapter, students will examine the different sources of energy that are used to generate electricity or provide heating for homes. They will consider the effect of the production and use of biofuels on the environment along with the concept of carbon-neutrality before outlining the use of nuclear power in comparison to fossil fuels. Student will describe and evaluate renewable resources such as wave power, wind power, hydroelectricity and tidal technology and how these can be used to generate electricity in specific locations.

Molecules and matter: Students will revise and increase their understanding of the concept of density as a property of a material or object by measuring and calculating the density of solids and liquids. This leads to a discussion of the states of matter, solid liquid and gas, the properties of matter which is in these states and the changes which occur as a material change from one state to another.



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;

1st Assessment: Energy & Energy transfer by heating

2nd Assessment: Energy resources & Molecules and matter

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

Useful Websites

For independent study the following websites are recommended:

- Mathematical relationships in GCSE Physics: <https://www.my-gcsescience.com/mathematical-relationships-gcse-physics/>
- AQA specification: <http://www.aqa.org.uk/subjects/science/gcse/physics-8463>
- BBC Bitesize: http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa/
- S-cool the revision website: <http://www.s-cool.co.uk/gcse/physics>
- Revision GCSE Physics: <http://www.gcsescience.com/pe.htm>



- Assessment resources:
<http://www.aqa.org.uk/subjects/science/gcse/physics-8463/assessment-resources>
- GCSE exam questions organised by Topics & difficulty:
<https://www.savemyexams.co.uk/gcse-physics-aqa.html>

Communications

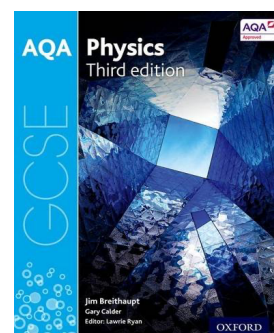
Who do I contact if I have concerns about my child's progress in this subject?

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 aziza.helaly@alkhairschool.org.uk.



Physics Overview

Term: Spring
Year: 9
Teacher: Mrs Aziza Helaly
Textbook title: AQA GCSE Physics Oxford



What will we be covering this term?

1st Half Term:

Forces- Forces in balance: This is a key concept that students should be confident with. In this term, students will study the significant overlapping contents of forces between Key Stage 3 and Key Stage 4. Students will compare vectors and scalars using the examples of distance and displacement along with the nature of forces. The concept of balanced and unbalanced forces will use to determine the behaviour of objects and the application of Newton's first law of motion.

Motion: In this chapter, students will analyse the motion of objects in depth starting from a recap of the concept of speed and this relationship to distance travelled and time taken. The representation of motion using distance-time graphs representing single and multiple objects will be analysed to give detailed descriptions of the movement of the objects.

2nd Half Term:

Electricity - Electric circuits: This topic has a significant overlapping content between Key Stage 3 and Key Stage 4 which will be covered this term. Students will describe electric circuits and the components used to construct them using the concept of current as the rate of charge flow through components due to a potential difference between points in the circuit.

Finally, students investigate and analyse a range of series and parallel circuits describing the path of current at junctions, the potential difference across branches and components, and the effect on resistance of series and parallel branches

Teacher's Marking Key:

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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;

1st Assessment: Forces- Forces in balance & Motion

2nd Assessment: Electric circuits

At the end of the term there will be a 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?

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Resources

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- Revision GCSE Physics: <http://www.gcse-science.com/pe.htm>
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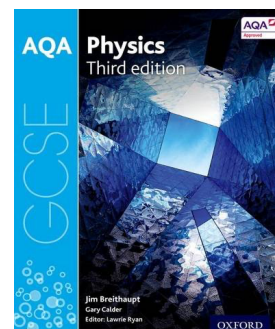


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Physics Overview

Term: Summer
Year: 9
Teacher: Mrs Aziza Helaly
Textbook title: AQA GCSE Physics Oxford



What will we be covering this term?

1st Half Term:

Electromagnetism: Students began this chapter by reinforcing their knowledge of magnetism by looking at the magnetic fields around permanent magnets and the concept of induced magnetism in some materials.

Wave properties: In this chapter, students will observe and describe the properties of mechanical and electromagnetic waves in terms of energy transfer with or without the need for a transfer medium. The students will analyse wave properties such as wavelength, amplitude, and period leading to the relationships between period, frequency and wave speed, frequency, and wavelength.

2nd Half Term:

Conservation and dissipation of energy II: Students will continue to develop their understanding of energy and energy transfer begun in Key Stage 3. Students will learn how to measure the work done by a force acting over a distance and how this concept can be used to analyse energy changes in gravitational stores, through lifting and falling, and elastic potential stores during stretching using the relevant mathematical relationships.

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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;

1st Assessment: Electromagnetism

2nd Assessment: Wave properties & Conservation and dissipation of energy

At the end of the term there will be a 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?

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