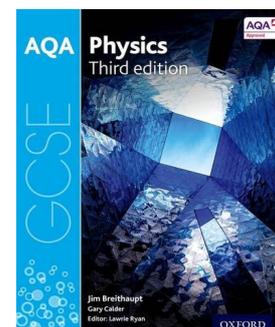




Physics Overview

Term: Autumn
Year: 10
Teacher: Mrs Aziza Helaly
Textbook title: AQA GCSE Physics Oxford



What will we be covering this term?

1st Half Term:

Electric circuits: In this chapter, 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. Resistance was introduced and the cause of a heating effect and corresponding energy transfer. 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.

2nd Half Term:

Electricity in the home: In this chapter, students will compare direct and alternating currents in terms of current direction. They will describe the UK mains supply and the wires used within it, outlining the National Grid and the high voltages associated with it. Finally, students will consider the importance of efficiency within mains powered electrical devices linking this concept back to energy transfer by a current and to the simplified system of energy efficiency ratings used when considering the purchase of an appliance.

Molecules and matter: In this chapter, students will 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 changes from one state to another. Students move on to discuss the concept of internal energy in more detail; analysing the behaviour of particles in a solid, liquid or gas as the temperature changed.

There will be an end of term exam based on what students have covered this half-term.

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: Electric circuits

2nd Assessment: Electricity in the home

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>
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Communications

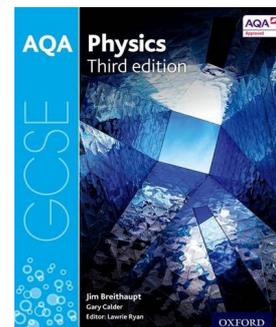
Who do I contact if I have concerns about my child's progress in this subject?

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: 10
Teacher: Mrs Aziza Helaly
Textbook title: AQA GCSE Physics Oxford



What will we be covering this term?

1st Half Term:

Molecules and matter (cont.): Students will move on to discuss the concept of internal energy in more detail; analysing the behaviour of particles in a solid, liquid or gas as the temperature changed. Students will describe latent heat of fusion and vaporisation mathematically, calculating energy changes during the appropriate phase changes and attempted to measure the latent heat of fusion for ice using electrical heating.

2nd Half Term:

Radioactivity: In this chapter, students will describe how the structure of the nucleus was discovered by the radiation emitted during nuclear decay and how experimentation and developments in our understanding of subatomic particles have driven to changes in the model used to describe the atom from the plum pudding model, through to the Rutherford model and then Bohr model.

Students will describe the changes in the nucleus which occur during alpha, beta, and gamma decay along with neutron emission in terms of atomic (proton) number and mass number using the appropriate nuclear notation for isotopes.

There will be an end of term exam based on what students have covered this half-term.

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: Molecules and matter

2nd Assessment: Radioactivity

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?

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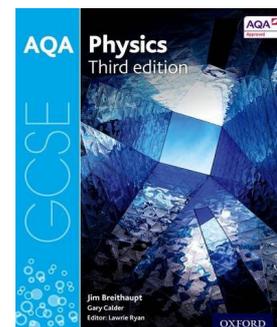
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Physics Overview

Term: Summer
Year: 10
Teacher: Mrs Aziza Helaly
Textbook title: AQA GCSE Physics Oxford



What will we be covering this term?

1st Half Term:

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. They will compare transverse waves and longitudinal waves by examining the relationship between the direction of propagation and the direction of the oscillations. In addition, they will investigate and describe both the reflection and refraction of waves describing these effects in terms of wave fronts.

2nd Half Term:

Light: Students began this chapter by looking at the reflection of light by plane mirrors using both a wave front and ray model. This led to descriptions of real and virtual images and their properties and why images are not formed by 'rough' surfaces. Then they will move on to investigate and describe refraction of light in more detail.

The electromagnetic spectrum: In this chapter, students will describe the electromagnetic spectrum in terms of different regions related to wavelength. The speed of electromagnetic waves in a vacuum will be described as constant allowing the use of the wave equation to link wavelength and frequency which as then been tied to the energy carried by the wave. The use of radio waves in communications for television and mobile phones will be described along with outlining transmissions of signals through optical fibres.

There will be an end of term exam based on what students have covered this half-term.

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: Waves properties

2nd Assessment: Light

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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