

Year 12 Physics Curriculum

2018-2019



Curriculum Content	Assessment	What homework will they have?	I'm not an expert, so how can I help?
<p>What will my child be studying this term?</p> <p>The curriculum within Physics is intended consolidate and build upon learning gained in Year 11, and continue to engage, enthuse and inspire students about Physics and its wider applications. The curriculum covers the AQA AS and A-level programme of study.</p> <p>The key principles students are expected to know in the Autumn term are those from the new AQA Physics specification detailed below. More detailed learning objectives for the Year 12 Physics course can be found as detailed in the specification.</p>	<p>Progress tests will occur at the end of each half term, which students will be expected to prepare thoroughly for. This will enable students and staff to assess progress and allow for any necessary intervention. Students will be offered additional support and a second opportunity to be tested on the subject matter until the student is confident with the topic. Short homework tasks set by staff members on a lesson by lesson basis are due the next lesson with that staff member.</p>	<p>Homework tasks will be set every lesson by each Physics teacher.</p> <p>Homework in Physics can take many forms; from written questions, to researching a particular topic, preparing a presentation, or revision for a progress test.</p> <p>Areas for improvement (Even Better Ifs (EBI)) on homework should always be acted upon – either corrections made or a discussion with that staff member.</p> <p>Wider reading around the topic areas (from the textbook or scientific websites such as the Physics.org and New Scientist) is highly recommended.</p> <p>An excellent magazine subscription is the Physics Review</p>	<p>A great activity for students who wish to take their understanding of science further is to follow news stories about current advances in science and technology. Links can be found at: www.sciencedaily.com/ and www.bbc.co.uk/news/science_and_environment/</p>

Content covered:

Teaching is split between two Physics teachers.

In the Autumn term, students will complete the following topics;

Measurements and their errors

- The use of SI units and their prefixes
- Limitation of physical measurements
- Estimation of physical quantities

Mechanics and materials

- Scalars and vectors
- Moments
- Motion along a straight line

- Projectile motion
- Newton's laws of motion
- Momentum
- Work, energy and power
- Conservation of energy
- Bulk properties of solids
- The Young modulus

Electricity

- Basics of electricity
- Current-voltage characteristics
- Resistivity
- Circuits
- Potential divider
- Electromotive force and internal resistance

Literacy and numeracy:

During the Year 12 course, there are many opportunities to develop numeracy and literacy skills. Students will develop their algebra, trigonometry and graph analysis skills. There is also a unit of work focused on taking measurements and appreciating the limitations of these.

The use of scientific terminology is at the forefront of written work with students encouraged to use appropriate terms from the outset. We also further develop the use of written skills to describe, explain and justify ideas.

What can I do to help my child?

Firstly, ask your child what they have been learning about in Physics lessons. Encourage them to read around the subject, using the links provided above, to stimulate and maintain a genuine interest in the subject. Encourage them to seek support from their teachers if they are unsure about any part of their homework or in class learning – this is the best way for them to develop proactive, independent study skills which will set them up for academic success.

Keep an eye out for Physics-related television programmes as these can demonstrate real-life applications of concepts studied in class, as well as providing career inspiration.

Additional resources and details of core texts used:

The LRC in school and local libraries stock many books on science and technology which students may wish to read as part of their wider learning. For support with topics linked to lessons, the S-cool website has excellent sections on each of the Physics topics studied (<http://www.s-cool.co.uk/a-level/physics>), including a useful selection of online test questions. The website <http://www.cyberphysics.co.uk/index.html> also offers useful information and diagrams on key topics.

For specific support with the A-level courses, the AQA website has links to the specification and also specimen examination papers and their mark schemes which students may find useful <http://www.aqa.org.uk/subjects/science/as-and-a-level/physics-7407-7408>.

Students will also find a text book and revision guide helpful to support their studies – the CGP A-Level Physics AQA Guide is particularly good, but shop around to help your child select which book is accessible to them (Waterstones is a good outlet to look at the range of available revision guides). Just ensure the books are designed for the new AQA A-level Physics course.

Teaching group arrangements:

Where can I get more advice?

Dr V Larner (Curriculum Leader) – vlarner@stratfordschool.co.uk. Please include the name of your child's teacher so the message can be forwarded appropriately.