

Subject: Physics**Teachers:** Mrs Reeves and Dr Catalan**Exam Board:** AQA**NEWPORT GIRLS' HIGH SCHOOL****KS4 Curriculum Overview****Curriculum Intent & Organisation**

The requirements and curriculum for physics at GCSE are set mostly by the DfE. The exam board AQA course was specifically chosen as it provides the best preparation for A-level in terms of subject content in both breadth and depth. There are 10 required practicals for this course which are carried out when the topic content related to the practical is delivered. The school does not set its pupils in science. Pupils are prepared so that they can all access the top marks (grades 7-9).

Examination Information**EBACC?****P8 Bucket**

Compulsory subject examined end of Year 11 with no controlled assessment

Yes

EBACC/Other

Impact of Prior Learning from KS3

Year 7 Science and Year 8 Physics lays the foundations for this 9-1 GCSE course that starts at Year 9.

Equipment Required for this course

- Standard classroom stationery
- Scientific calculator
- 30-cm ruler
- protractor

Curriculum Implementation – Areas of Focus Year 9**Autumn Term**

- Balanced and Unbalanced Forces
- Types of Forces
- The Gravitational Force

Spring Term

- Frictional Forces (air resistance and friction)
- The spring force and Hooke's Law
- Dynamics (speed and acceleration)
- $F = ma$

Summer Term

- Types of Energy and Energy transformations
- Work done
- Gravitational Potential Energy and Kinetic Energy

Curriculum Implementation – Areas of Focus Year 10**Autumn Term**

- Units and Conversions, Measurement and Density
- Physical quantities: Scalars and Vectors
- Graphical Analysis
- Dynamics and Car Safety

Spring Term

- Forces and Momentum
- Work done, Energy and Power
- Energy Resources
- Centre of Mass and Moments
- Hooke's Law and Springs

Summer Term

- Pressure, Pressure in Fluids and Hydraulics
- Thermal Physics
- Gas Laws
- Specific and Latent Heat
- Convection, Conduction and Radiation
- Space Physics

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Curriculum Implementation – Areas of Focus Year 11

Autumn Term	Spring Term	Summer Term
<ul style="list-style-type: none">• Electrostatics and Electric Fields• Circuits: Resistance, Electric Potential and Current• IV Characteristics of Conductors• Consumer Electrics and kWh• Magnetic Fields• Electromagnetism and applications	<ul style="list-style-type: none">• Motor Effect and applications• Electromagnetic Induction• Generation of electricity and Transformers• Waves and basic properties of waves• Sound and applications• Light and lenses• Atomic and Nuclear Physics	<ul style="list-style-type: none">• GCSE Exams

Impact / Outcomes

Learning will be assessed throughout the course by:

- Class worksheets and discussion, regular homework and end-of-unit tests
- End of year exams
- Mock exam in year 11

Homework

Homework will be set weekly. Most will consist of practice questions and problems relating to the topics being covered. Questions will include numerical work as well as written explanations of physical processes. Some homework will be research or revision in preparation for unit tests. They may also be asked to complete some of the practical activities for homework.

Ways to support learning

- In year 9, the main principles discussed in class will be recorded in their exercise books. There is no textbook at this stage. Pupils are encouraged to read their notes carefully and summarise the main concepts before attempting homework and when preparing for tests.
- In year 10 and 11, pupils have a 9-1 GCSE textbook. Students are expected to regularly read the material related to the topics and attempt the exercises and exam practice style questions in the book when preparing for tests.
- For extra practice, we recommend the CGP revision guides and workbooks for AQA 9-1 GCSE Physics from year 10 onwards.
- Physics help drop-in sessions are run by the science department twice a week at lunchtimes, usually on Mondays and Tuesdays from 1-1.20 pm to give support and guidance. Pupils who need help must try to attend these sessions. Please encourage your child to attend if they are having any difficulty with the subject.
- Websites: **BBC Bitesize** is a good starting point for the more basic concepts. However, it is aimed at pupils in the 4-6 grade range.
Isaac Physics GCSE has a good range of online practice problems
All the past papers and some topic specific practice questions can be found in the school's Student Out drive under Physics in the year 11 folder.

Field Work / Extension / Enrichment Opportunities

- GCSE Science Live

Next Steps

The course is good preparation for A-levels in Physics, Maths, Chemistry and Computer Science as many topics overlap and all are problem-based subjects that rely heavily on logic and maths skills. The experimental skills attained are invaluable for all science-based subjects at A-level.

For more information, contact Dr MS Catalan or Mrs C Reeves.