BROOK 6TH FORM & ACADEMY
A UNIVERSITY TECHNOLOGY COLLEGE

GCSE Physics Year 10 Curriculum Overview 2024-2025

AQA

Teaching science at Key Stage 4 builds upon and extends the scientific knowledge and understanding developed in earlier stages, particularly Key Stage 3 contents such as Energy, Matter, Forces and Motion, Waves, Electricity and Magnetism, and Space. At Key Stage 4, these topics are explored in greater depth, offering students opportunities to deepen their theoretical understanding and enhance their experimental skills through Required Practicals. Additionally, students strengthen their analytical and evaluative skills through hands-on experimentation.

Autumn term: 2024

1. Energy

(a) Types of Energy, energy transfers (changes) & efficiency of transfer

- Introduction to GCSE Physics – (Introduction to the physics curriculum)
- 1.1 Changes in energy store
- 1.2 Conservation of energy
- 1.3 Energy and work
- 1.4 Gravitational potential energy stores
- 1.5 Kinetic energy and elastic stores
- 1.6 Energy dissipation
- 1.7 Energy and efficiency
- 1.8 Electrical appliances
- 1.9 Energy and power
- Summary and review

Assessment: Testing knowledge of (a)

Half Term

(b) How energy moves from place to place and transfer of thermal energy

- 2.1 Energy transfer by conduction
- 2.2 Infrared radiation
- 2.3 Specific heat capacity & Measurement of specific heat capacity
- RP1: Determining the specific heat capacity
- 2.4 Heating and insulating buildings
- RP1: Determining the specific heat capacity
- RP2: Investigating thermal insulators
- Summary and review

(c) Energy Resources/Sources & the Environment

- 3.1 Energy demands
- 3.2 Energy from wind and water
- 3.3 Power from sun and earth (geothermal)
- 3.4 Energy and the environment

Assessment: Testing knowledge of 1 (a); (b); (c) & (d)

Christmas break

Winter term: 2025

2. Electricity

(a) Concept of Electric charge, their fields and electrical circuits

- 4.1 Electrical charges and fields
- 4.2 Current and charge
- 4.3 Potential difference and resistance
- 4.4 Component characteristics
- 4.5 Series Circuits
- 4.6 Parallel Circuits
- RP3: Investigating resistance
- RP4: Investigating electrical components
- Summary and review

Half Term

(b) Electricity in the home

- 5.1 Alternating current
- 5.2 Cables and plugs
- 5.3 Electrical power and potential difference
- 5.4 Electrical currents and energy transfer
- 5.5 Appliances and efficiency
- Summary and review

  Assessment: Testing knowledge of 2 (a) & (b)

Easter break

Spring term: 2025

3. Particle model of matter

Phases of matter & how energy is stored/ released as matter changes phase

- 6.1 Density
- 6.2/3 States of matter and changes of states
- 6.4/5 Internal energy and specific latent heat
- 6.6/7 Gas Pressure, temperature and volume
- RP5: Calculating densities
- Summary and review
- **Assessment**: Testing knowledge of 3

4. Atomic structure

Atomic structure, nucleus, stability of nucleus & nuclear energy

- 7.1 Atoms and radiation
- 7.2 Discovery of the nucleus
- 7.3 Changes in the nucleus I
- 7.4 Changes in the nucleus II

Half Term

- 7.5 Activity and half-life
- 7.6 Nuclear radiation in medicine
- 7.7 Nuclear fusion
- 7.8 Nuclear fusion
- Summary and review

End of the Year Exams in June (of 1 to 4)