Bishop Heber High School

Subject	Year	Term
Physics	11	1

Topic

Forces and Waves

Content (Intent)

Prior Learning (Topic) Electricity

Unit 5: Forces

Students will learn in depth the concept of vectors and scalars and their purpose in understanding interactions between objects through contact or non-contact means. Newton's laws of motion will be studied in greater detail whereby students will complete a required investigation into Newton's 2nd law. A further study of Hooke's law and learning about the graphical representation will be completed

Unit 6: Waves

Students will learn the differences between transverse and longitudinal waves along with examples. Students will study the mathematical applications of wave equations and complete two investigations into determining the speed of waves in both a solid medium and in water. The electromagnetic spectrum will be shown and the seven aspects learned along with risks and applicable uses.

Future Learning (Topic) Electromagnetism

What Knowledge and Skills will be taught (Implementation)

Knowledge - Forces

- The difference between scalars and vectors followed resultant forces and their connection to acceleration
- Newton's three laws of motion, inertia mass and equations of motion undergoing uniform acceleration and conservation of momentum
- Elastic and inelastic deformation of materials
- The difference between transverse and longitudinal waves
- The electromagnetic spectrum, including uses and risks
- Properties of waves including: wavelength, amplitude, wave speed and frequency

Maths Skills

- Applying new formula in familiar and unfamiliar contexts.
- The application of collected data into graphs and for analysis.

Practical Skills

- Reading measuring equipment with accuracy and precision, taking repeats, following methods.

How will your understanding be assessed & recorded (Impact)

Key Piece of work (Homework)
Pupils given a percentage and formative feedback provided.
End of topic test
Pupils given a percentage and GCSE equivalent grade.
Formative feedback provided.
Walking talking Mocks (WTM)
Formative feedback provided.
Year 11 Assessment 1
Pupils given a percentage and GCSE equivalent grade.
Formative feedback provided.

Interleaving Topic:
Unit 3: The Particle Model – Relates to intermolecular forces and gas pressures.

How can parents help at home?

Ensure all class work is complete, and homework submitted on time
Assist in ensuring the active use of the EDUCAKE online learning platform where each pupil is given a personal log on from their teachers.
Encourage pupils to revise for tests and exams and to create revision resources such as flash cards and posters.
Ensure all pupils have all their resources required for science lessons, including Knowledge organisers, pens and calculators

Helpful further reading/discussion (including Reading and Vocabulary Lists)

Reading

AQA revision guides
AQA revision cards
EDUCAKE online learning platform.
Seneca Learning
BHHS Knowledge organisers

Vocabulary Lists:

Momentum
Conservation of momentum
Elastic Deformation
Resultant force
Terminal Velocity
Inertia
Transverse
Longitudinal