Bishop Heber High School

Subject	Year	Term
Physics	10	2

Topic

Atomic Structure and Radioactivity, and Electricity

Content (Intent)

Prior Learning (Topic) The Particle Model of Matter

Unit 4: Atomic Structure and Radioactivity

The structure of the atom, isotopes and the Plum Pudding Model of the atom corroborates students' learning in GCSE Chemistry but it leads onto learning and understanding the concept of nuclear radioactive decay and radiation. This is support by the context of half-life, contamination; Medical uses of nuclear radiation.

Unit 2: Electricity

Students will revisit electricity, identifying parts of circuits using symbols and the different types of circuits. They will learn about new rules for electricity circuits. A variety of components will be used for the first time such as diodes and thermistors. Required investigations into a variety of components will be completed to support the theory learnt. Students will have a better appreciation of mains electricity in the UK and learn about electric fields which support the prior topics of gravitational fields.

Future Learning (Topic) Electricity

What Knowledge and Skills will be taught (Implementation)

Knowledge

- Know the structure of the atom
- Radioactive decay and nuclear equations
- Use graphical analysis to interpret decay curves
- Know the difference between fission and fusion

Knowledge

- Knowing the difference between p.d. and current, using new formula to make predictions
- I-V graphs for an ohmic conductor, lamp, and diode
- The structure of the plug and its purpose
- What electric fields look like and the reason why charge flows
- AC/DC, the National Grid and the function of transformers – applying the power loss equation

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.
Year 10 Assessment 2, Year 11 Assessments 1 and 2
Pupils given a percentage and GCSE equivalent grade.
Formative feedback provided.

Interleaving Topics:
Unit 6: Waves – reviewing formulae and key concepts and required practicals.

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	Vocabulary Lists	
AQA revision guides	Contamination	Half life
AQA revision cards	Tracers	Decay
EDUCAKE online learning platform.	Irradiation	Tracers
Seneca		
BHHS Knowledge organisers		