Bishop Heber High School

Subject	Year	Term
Physics	**13**	**1**

Topic

Further Mechanics, Electric and Gravitational Fields, Capacitance, and Nuclear Physics

Content (Intent)

Prior Learning (Topic) Electricity and Further Mechanics

AQA A Level Physics

- Further Mechanics – Oscillations and damping in the real world
- Gravitational and Electric fields, and Capacitance
- Nuclear Physics

Future Learning (Topic) Capacitance, Nuclear, and Astrophysics

What Knowledge and Skills will be taught (Implementation)	How will your understanding be assessed & recorded (Impact)
Further mechanics Completion of resonance and damping *Required Practical 7* Investigation into SHM of a mass-spring system and pendulum	Early Hurdle Exam – October of year 12. A level grading and formative feedback given. End of topic tests - A level grading and formative feedback given. Homework – a percentage, A level grade and Formative feedback provided. Data recorded on teacher tracking sheet
Nuclear Physics Rutherford model of the atom, radioactivity, decay modes, decay theory, application of nuclear physics, fission and fusion. *Required Practical 12* Investigation of the inverse square law with gamma radiation	
Fields and Capacitance Gravitational and electric fields and their comparisons and magnetic fields and their use in generating electricity. Relating the concept of electric fields to capacitance; relating to AC theory of electricity, charge, and discharge. *Required Practical 9* Investigation of the charge and discharge of capacitors	Early Hurdle Exam – September of year 13. A level grading and formative feedback given. End of topic tests - A level grading and formative feedback given. Homework – a percentage, A level grade and Formative feedback provided.

How can parents help at home

Ensure all class notes and content files are complete and homework submitted on time
Encourage pupils to revise for tests and exams and to create revision resources such as flash cards and posters.
Encourage pupils to actively research future University courses and careers.

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

Reading

Text Book – Collins AQA Approved Physics Year 2 Student book by Dave Kelly
UPLEARN
Websites

- www.physicsandmathstutor.com
- www.antonine-education.co.uk
- AQA website

Books – Practice in Physics by Akrill et al.
CGP revision guides

Vocabulary Lists

Field Potential
Field Strength
Potential Gradient
Farad
Capacitance
Permittivity
RMS Voltage
Mass Defect
Binding Energy
Decay constant
Resonance
Damping
Time-constant
Dielectric