

### Curriculum Map: Combined Physics year 11

	Autumn	Spring 1	Spring 2	Summer 1	Summer 2
<b>Content</b> Declarative knowledge 'I Know'	P4 – particle model To state the key features of the plum pudding model To define protons, neutrons and electrons and state their mass and charge To state the 3 types of radioactive decay To know the penetrative power, ionisation ability, mass, charge and symbols for alpha, beta and gamma decay. To know the difference between atomic and mass number To define irradiation and contamination To know the definition of half life and activity To state what radioactive isotopes are used for what in medicine (T) To define nuclear fusion and nuclear fission (T) To know the risks associated with radiation (T)	Students revise content from paper 1 in preparation for a set of mock exams.  These include revision of content as well as exam skills. Recalling facts, giving definitions, quoting equations, remembering laws of Physics.			
<b>Skills</b> Procedural Knowledge 'I know how to'	To explain the differences between the nuclear model and the plum model To know how to determine the number of protons, electrons or neutrons in an atom To know how to decide on the best type of radiation for the application To calculate half life from a graph To calculate half life using fractions To give differences between irradiation and contamination. To tell the difference between nuclear fusion and nuclear fission (T) Describe how a chain reaction works (T) Decide on the best radioactive tracer for a job in medicine. (T)	Students revise content from paper 1 in preparation for a set of mock exams.  These include revision of content as well as exam skills. Rearranging equations, explaining and describing concepts, analysing results.			
<b>Strategies</b> Conditional Knowledge 'I know when to'	To interpret data findings to calculate half life or the amount of radioactive nuclei remaining To evaluate the experimental findings of Rutherford's experiment to explain the structure of the atom To compare and contrast the 2 models of the atom	Students revise content from paper 1 in preparation for a set of mock exams.  These include interpreting data, evaluating methods, making conclusions and suggesting improvements as well as applying equations to situations.			

	To interpret diagrams and data to conclude the best type of radiation. To know why peer reviews are important when comparing the structure of the atom.			
Key Questions	What is the half life of a radioactive isotope? What are the effects of radiation? How has the atom developed over time?			
Assessment topics	End of topic test after the topic (topic is 6 lessons long)	PPE in March on the paper 1 content		
Cross curricular links/Character Education	Geography – nuclear fusion Chemistry – structure of the atom and history of the atom Maths – graph skills and interpretation			