	Year 10 - Physics		
Unit Title	**Particle Model of Matter**	**Atomic Structure**	**Forces**
Approximate Number of Lessons	Trilogy Students – 7 Lessons Separate Students – 8 Lessons	Trilogy Students – 7 Lessons Separate Students – 9 Lessons	Trilogy Students – 15 Lessons Separate Students – 21 Lessons
Curriculum Content	• Describe and measure the density of materials • Recall properties and particle arrangements in the 3 states of matter • Understand meaning of and apply latent heat capacity • Apply the gas laws (separates only)	• describe the changes in the nucleus which occur during alpha, beta, and gamma decay and the properties of each decay. • discuss the concepts of activity, count rate, and the patterns in radioactive decay that explain half-life and the associated graphs despite the random nature of individual decays • perform calculations involving the relationship between the initial activity, current activity, and half-life • discuss the application of radioactivity to medical tracers within the body (separates only)	• Recognise and calculate the force acting on a body in a range of contexts • Describe and calculate the effect of forces on the motion of objects • Draw and analyse graphs of motion • Recall and apply Newton's law of motion • Describe factors which affect stopping distance and reaction times • Explain how safety devices such as seatbelts reduce injury • Calculate the pressure in fluids (separates only)
Links to prior learning	Aware of 3 states of matter and particle arrangement in each. Have understanding of heat energy and the motion of particles in a states of matter Recall the processes of heat transfer - conduction, convection and radiation	Know that everything is made of atoms Aware of the structure of the atom including the subatomic particles: proton, neutron and electron	Know that forces can change the motion or shape of an object Weight is a force and acts towards the centre of a planet or star Forces can be contact or non contact and how 2 forces acting on an object affect it's motion Pressure in a fluid acts in all directions

Cultural Capital Opportunities	An experiment at home - https://www.sciencenewsforstudents.org/blog/eureka-lab/float-candy-sea-salt For revision and notes - https://www.bbc.co.uk/bitesize/guides/zcncjty/revision/1 https://www.youtube.com/watch?v=Gql6gdnoZaI https://www.youtube.com/watch?v=sEbxLrP_ZCU	An experiment for finding the half life of M&M's at home https://www.youtube.com/watch?v=Iz3-vNcadCY For revision and notes: History of the Atom (Atomic Theory) https://spark.iop.org/nature-ionising-radiations https://www.youtube.com/watch?v=zXw2cOSBB8E Reading/Watching: Watch HBO series "Chernobyl" https://www.bbc.co.uk/news/world-asia-56252695	For notes and revision bbc.co.uk/bitesize/guides/zyydmp3/revision/1 https://www.sporcle.com/games/Ricciardo/gcse-aqa-physics-9-1-all-23-equations
Assessment Focus	Particle model of matter end of topic assessment	Atomic Structure end of topic assessment	Forces end of topic assessment
Name of Knowledge Organiser/ Link to Organiser			