

P3 Topic 4 Revision tracker

PHYSICS

Learning objectives I can:	I can do this very well	I can do this quite well	I need to do more work on this
4.1 Discuss how instruments, including particle accelerators, can help scientists develop better explanations about the physical world			
4.2 Discuss reasons for collaborative, international research into big scientific questions, including particle physics			
4.3 Explain that for motion in a circle there must be a resultant force known as a centripetal force that acts towards the centre of the circle			
4.4 Explain that particle accelerators called cyclotrons cause charged particles to move in a circular or spiral path, due to a magnetic field			
4.5 Demonstrate an understanding that certain stable elements can be bombarded with proton radiation to change them into radioactive isotopes			
4.6 Describe the use of particle accelerators (cyclotrons) to produce radioactive isotopes for medical purposes			
HSW 14 Describe how scientists share data and discuss new ideas, and how over time this process helps reduce uncertainties and revise scientific theories			
4.12 Investigate factors affecting the height of rebound of bouncing balls			
4.7 Demonstrate an understanding that for inelastic collisions momentum is conserved but kinetic energy is not conserved			
4.8 Demonstrate an understanding that for elastic collisions both momentum and kinetic energy are conserved			
4.9 Analyse collisions in one dimension in terms of momentum and kinetic energy			
H 4.10 Carry out calculations using momentum conservation for a two-body collision (in one dimension only)			
H 4.11 Carry out calculations using conservation of kinetic energy for a two-body elastic collision (in one dimension only)			
HSW 3 Describe how phenomena are explained using scientific theories and ideas			
4.13 Recall that gamma rays can be produced by the annihilation of an electron and a positron			
4.14 Apply conservation of momentum and charge to positron electron annihilation			
4.15 Apply the idea of conservation of mass energy for positron electron annihilation a in a qualitative way (calculations involving $E = mc^2$ will not be required)			
H b in a quantitative way using the equation $E = mc^2$			
4.16 Explain the use of radio isotopes in PET scanners to produce gamma rays			
HSW 3 Describe how phenomena are explained using scientific models			