Edexcel International GCSE Physics 4PH1 Learning Plan

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| **Unit: 7 Radioactivity and Particles** | | **Chapter: 22. Atoms and radioactivity** | | **Hours: 4** |
| Content coverage | Learning outcomes | Resources | Assessment | |
| Section 7: Radioactivity and Particles  a) Units  b) Radioactivity | **7.2** describe the structure of an atom in terms of protons, neutrons and electrons and use  symbols such as 14 c to describe particular nuclei  **7.3** know the terms atomic (proton) number, mass (nucleon) number and isotope  **7.4** know that alpha (α) particles, beta (β−) particles, and gamma (γ) rays are ionising radiations emitted from unstable nuclei in a random process  **7.5** describe the nature of alpha (α) particles, beta (β−) particles, and gamma (γ) rays, and recall that they may be distinguished in terms of penetrating power and ability to ionise  **7.6** *practical: investigate the penetration powers of different types of radiation using either radioactive sources or simulations*  **7.7** describe the effects on the atomic and mass numbers of a nucleus of the emission of each of the four main types of radiation (alpha, beta, gamma and neutron radiation)  **7.8** understand how to balance nuclear equations in terms of mass and charge | Video and Powerpoint:  4.1 The nuclear atom  4.2 Radioactivity  Textbook pages:  Page 221 – Electrons, protons and neutrons  Page 222 – The atom  Page 223 – Isotopes  Page 224 – Ionising radiation  Page 226 – **Practical** – *Investigate the penetrating powers of different kinds of radiation* | Pages231 – 232  Questions (1) to (8)  Chapter 21 Textbook Answers (PDF)  Chapter 21 - exam question - pdf  Chapter 21 - exam question mark scheme – pdf  Chapter 21 - Talking paper video | |

Videos – [www.igcsesciencecourses.com](http://www.igcsesciencecourses.com)

Textbook Ref: Edexcel International GCSE (9-1) Physics Student Book - Pearson (Arnold, Johnson, Woolley))