

**Barnsley Academy – (Y10 Combined Science) C1- Atomic structure Week 2 Curriculum
Scheme of Work – 2023-24**

| Term – Week ... | | | | |
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| | 1 | 2 | 3 | 4 |
| Lesson Focus | Atomic Structure | Development of the atom | Isotopes | Electronic structure |
| Prerequisite Knowledge | 8CP- Periodic table | <ul style="list-style-type: none"> - Structure of the atom - Where Protons, Neutrons and Electrons are found | 8CP Calculating Protons, Neutrons and Electrons | 8CP- Drawing electronic structure 9CE- Why do atoms react and link to group number |
| Core Knowledge | <ul style="list-style-type: none"> • State the charges and mass of the three subatomic particles • Describe atoms using the nuclear model • Use the periodic table to calculate the number of protons, neutrons and electrons for any given element | <ul style="list-style-type: none"> ▪ Describe the development of the atomic model ▪ Compare the nuclear model with the plum pudding model ▪ Explain how new evidence from the scattering experiment led to a change in the atomic model | <ul style="list-style-type: none"> • Define an isotope • Compare isotopes from given information • Calculate RAM of isotopes given their abundance and give answers to specified number of significant figures or decimal places | <ul style="list-style-type: none"> • Describe what keeps electrons in their orbits • Draw and write the electron configuration for any of the first 20 elements • Describe the link between outer shell electron number, number of shells and location in the periodic table |
| Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge) | <ul style="list-style-type: none"> - Model on how to calculate Protons, Electrons and Neutrons | <ul style="list-style-type: none"> - Steps for a comparison question | <ul style="list-style-type: none"> - Steps to comparing isotopes (Slide 4) | <ul style="list-style-type: none"> - Steps to drawing electronic structure |
| Independent Practice | IP1- Mass, Charge and Atomic structure exam question IP2- Calculating Protons, Electrons and neutrons exam question | IP1 – Development of the atom exam q IP2- Comparing models exam q IP3- Alpha scattering exam q | IP1- Isotope exam question IP2- Calculating Relative Atomic mass exam question | IP1- Describe what keeps electrons in orbit IP2- Draw electronic structure for 5 different elements IP3- Electronic structure exam question |

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| Assessment (Informal/Formal) | <ul style="list-style-type: none"> - Circulation - Whiteboard checks - IP practice exam questions | <ul style="list-style-type: none"> - Circulation - Whiteboard checks - IP practice exam questions | <ul style="list-style-type: none"> - Circulation - Whiteboard checks - IP practice exam questions | <ul style="list-style-type: none"> - Circulation - Whiteboard checks - IP practice exam questions |
| Resources | (Hyperlink) | | | |
| Specific SEN(D)/EAL support | Overview for the lesson – can be repeated strategies | | | -Highlighted key steps |