

**Barnsley Academy – (Year 8 and Atoms and the Periodic Table (8CP)) Curriculum  
Scheme of Work – 2023-24**

Term – Week 1				
		1	2	3
<b>Lesson Focus</b>	Big Picture – success criteria.	Elements and the Periodic Table	Atomic Structure and Electron Configuration	Properties of Elements and the Periodic Table
<b>Prerequisite Knowledge</b>	What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.	KS2 - students have been taught about everyday materials KS3 – Have covered 7CP (particles) so have knowledge of arrangement of particles in solids, liquids and gases (Particle model)	KS2 – students have basic knowledge of solids liquids and gases. KS3 -particle theory studied in 7CP so have knowledge of arrangement and movement of particles in solids liquids and gases. Also state changes.	KS2 – Students have knowledge on comparing/grouping together everyday materials on basis of properties, such as hardness, solubility, conductivity etc. KS3 – Students know that helium and hydrogen make up stars light and space (8PL)
<b>Core Knowledge</b>	Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.	<ul style="list-style-type: none"> <li>Define elements, name the two types of elements and locate them on the periodic table</li> <li>Recognise elements from drawings or names</li> <li>Describe the rules for writing chemical symbols</li> </ul>	<ul style="list-style-type: none"> <li>Label a diagram of the atom and describe its structure</li> <li>Identify the number of protons, neutrons and electrons in an atom of an element</li> <li>Draw and write electron configuration for any of the first 20 elements</li> </ul>	<ul style="list-style-type: none"> <li>Describe some properties and uses of metals and non-metal elements</li> <li>Describe some of the stages in the formation of the periodic table</li> <li>Explain how the properties of the elements were used in early versions of the periodic table</li> </ul>
<b>Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)</b>	Name the steps that student need to take – agreed department approach.	No expert model required, all knowledge is fundamental and required for future lessons/learning.  Use of visualiser to show students where the ‘stairs’ go on their periodic table and help identifying position of elements on the periodic table ‘live’.	Teacher explanation of atoms. Shown model of an atom and introduce atomic structure/fundamentals of subatomic particles.  Teacher explanation of what the numbers of the periodic table mean in relation to protons, neutrons and electrons. Model identifying these for some elements.  Teacher demonstration of the rules for filling up the electron shells. Model electron structure for specific elements.	Expert model on IP 1 task slide, showing why a ring is made from a metal.  Expert model on IP 2 task slide, showing students scientist/date/key contribution.

			Use a visualiser for students to see this being done 'live'.	
<b>Independent Practice</b>	The task and reference back to the Big Picture Slide	<p>IP task 1, slide 14. Students to define the word element and use the periodic table to identify elements.</p> <p>IP task 2, slide 27. Students to identify is from names if substances are elements and expand on this to include their reasoning.</p> <p>IP task 3, slide 41. Students to state the 2 rules for writing symbols. Use the periodic table to find elements, write its symbol and link back to core knowledge from earlier in lesson (if it is a metal or non metal, reinforcing the basics)</p>	<p>IP task 1 – students complete the structure of an atom worksheet to label a diagram and identify the key information of the subatomic particles.</p> <p>IP task 2 – Students to complete exam questions on the number of protons, neutrons and electrons.</p> <p>IP task 3 – Students to complete the worksheet on electron structure for the first 20 elements.</p>	<p>IP1 – students fill in table comparing the properties of metals/non-metals and describing why things are made out of metals/non-metals based on properties.</p> <p>IP task 2 – students to use the information sheet to collate the key work carried out by the scientists on the periodic table.</p> <p>IP EXTENSION – exam question which consolidates all 3 lesson objectives.</p>
<b>Assessment (Informal/Formal)</b>	Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.	<p>Independent practice tasks</p> <p>Learning checks on WB</p> <p>Students to self- assess all tasks.</p> <p>Teacher to circulate and check for misconceptions.</p>	<p>Independent practice tasks</p> <p>Learning checks on WB</p> <p>Students to self- assess all tasks.</p> <p>Teacher to circulate and check for misconceptions.</p>	<p>Independent practice tasks</p> <p>Learning checks on WB</p> <p>Students to self- assess all tasks.</p> <p>Teacher to circulate and check for misconceptions.</p>
<b>Resources</b>	(Hyperlink)			<a href="http://www.rsc.org/periodic-table">http://www.rsc.org/periodic-table</a>
<b>Specific SEN(D)/EAL support</b>	Overview for the lesson – can be repeated strategies	<p>IP task 2 – answers highlighted in red and green for yes/no as a clear visual aid to help students clearly understand and comprehend which are elements and which are not.</p> <p>Table made for IP 3 task. This can be printed out of SEN/LAP/EAL students. Has an expert model along the top for Helium and some spaces filled in already for students to support them .</p>	<p>IP task 1 – LAP/EAL/SEN students can access a worksheet that has starting letters for naming the parts of an atom and options to pick from for the key information on the subatomic particles.</p> <p>Learning check (lesson objective 2) has the rules for calculating the protons/neutrons and electrons to start with to provide support/reinforcement of the expert model.</p> <p>IP task 3 – the first 3 elements have been done for students.</p>	<p>IP task 1 – LAP/EAL/SEN - Table has partially been filled in.</p> <p>IP task 2 – LAP/EAL/SEN – can be given pre-printed table with the names of the scientists already on.</p>

