

Chemistry – Atomic structure and the periodic table – Checklist

4.1.1 A simple model of the atom, symbols, relative atomic mass, electronic charge and isotopes	Taught	Practiced	Mastered
<p>Define an atom and element.</p> <p>Use scientific conventions to identify chemical symbols.</p> <p>Use scientific conventions to identify elements by chemical symbols.</p> <p>Define a compound.</p> <p>Write word equations for reactions from practical activities stated in the specification. Develop skills to communicate through use of symbolic equations. Apply these skills to write balanced symbol equations for equations met in practical activities.</p> <p>Extended writing Describe word, formulae and balanced chemical equations.</p>			
<p>Define a mixture.</p> <p>Extended writing Describe each practical technique of separating mixtures. Explain how chromatography, distillation and filtration practical techniques occur.</p> <p>High demand Explain why crystallisation happens.</p>			
<p>Create a timeline for the history of the atomic model.</p> <p>Extended writing Describe the differences between the plum-pudding model, nuclear model and atomic model. Describe why changes to the atomic model happened.</p>			
<p>High demand Describe the experimental techniques involved in the history of the atomic model. Explain how the experimental techniques work.</p>			
<p>Recall structure of atom and the charges of each particle (KS3).</p> <p>Using examples from the first 20 elements on the periodic table, students read off and work out the number of each charge different elements have.</p> <p>Describe the relationship between number of positive and negative charges. Apply this relationship to explain why there is no overall charge.</p> <p>Referring to their table of data, students write their rules to state what the atomic number is and why elements are different from each other.</p>			
<p>Extended writing Describe the structure of atoms.</p>			
<p>Describe how many electrons there can be in the first, second and third energy shells.</p>			

4.1.2 The periodic table	Taught	Practiced	Mastered
Identify link between electron configuration and the structure of the periodic table for elements 1 to 20. Identify anomalies.			
<p>Create a timeline for the history of the periodic table.</p> <p>Extended writing Describe the differences between the early Periodic tables and our current Periodic table. Explain why the Periodic table has changed throughout the years.</p>			
<p>Extended writing Describe the trends in properties in Group 0. Explain how properties of the elements in Group 0 depend on the outer shell of electrons of the atoms.</p> <p>High demand Explain the trends in Group 0.</p>			
<p>Extended writing Describe the trends in properties in Group 1. Explain how properties of the elements in Group 1 depend on the outer shell of electrons of the atoms.</p> <p>High demand Explain the trends in Group 1.</p>			
<p>Extended writing Describe the trends in properties in Group 7. Explain how properties of the elements in Group 7 depend on the outer shell of electrons of the atoms.</p> <p>High demand Explain the trends in Group 7.</p>			
<p>Extended writing Describe the properties of Cr, Mn, Fe, Co, Ni, Cu.</p> <p>Explain the links between properties of transition metals with their common uses.</p>			
<p>Describe the properties of Cr, Mn, Fe, Co, Ni and Cu.</p> <p>High demand Give reasons why transition metals have ions with different charges.</p>			