

Unit Title	Atoms				
Subject group and discipline	Sciences	MYP year	3	Unit duration (hrs)	24

Inquiry: Establishing the purpose of the unit

Key concept	Related concept(s)	Global context <i>choose 1 and then drill down to exactly which aspect of these the unit will focus on</i>
Systems	Models Patterns	Scientific and technical innovation
Statement of inquiry		
Models of chemical systems allow us to understand patterns which lead to innovation .		
Inquiry questions		
<p>Factual</p> <p>What are the symbols of the first 20 elements?</p> <p>What information do chemical formulae contain?</p> <p>How do you write chemical equations?</p> <p>What are elements, mixtures and compounds?</p> <p>What are substances made of? (history of the atom).</p> <p>Is there anything smaller than atoms? (subatomic particles).</p> <p>How many types of hydrogen are there? (isotopes).</p> <p>Why is the mass of elements not a whole number (isotope abundance).</p> <p>How are the electrons organised in atoms? (electron configuration).</p> <p>What is the history of the modern periodic table?</p> <p>Conceptual—</p> <p>How do chemists talk about substances?</p>		

<p>Why do substances behave differently? Why are there patterns in the periodic table? How does atomic structure predict patterns in the Periodic table? Why do we need to balance chemical equations? What are the patterns in the periodic table?</p> <p>Debatable—</p> <p>Which was the biggest discovery made during the discovery of the atomic model? Which version of the periodic table is most useful? Is the periodic table the best way of grouping the elements? Which group should hydrogen be in?</p>		
<p>Objectives</p>	<p>Summative assessment <i>This does not always have to be a GRASPS task but it does need to involve students demonstrating progress by transferring the skills and knowledge they have learnt to a real-life context. An analytical essay or practice exam questions (not quizzes) counts as real life context. Students need to construct a response using the knowledge and skills they practised in the unit.</i></p>	
<p><i>Learning objectives for the unit</i></p> <p>Aiii interpret information to make scientifically supported judgments.</p> <p>Biv design scientific investigations.</p> <p>Ciii discuss the validity of a prediction based on the outcome of the scientific investigation</p> <p>Di summarize the ways in which science is applied and used to address a specific problem or issue</p>	<p>Application IMP: Aiii and Diii. Given information about reactions of various elements and have to give scientifically supported judgements about trends in reactivity.</p> <p>WS IMP: Biv. Investigating displacement reactions. TBC need to finalise with the chemists.</p> <p>GRASPS: curator of the museum exhibit on the models of atomic structure. Explaining the use of alpha particle scattering and discussing the validity of Rutherford's prediction. Di and Ciii.</p>	<p>Students will be relating their understanding of the system of an "atom" and the atomic model to understands patterns of reactivity in the periodic table.</p>