



Lessons Sequence							
<b>TOPIC (S)</b> <b>Atoms, Elements and Compounds</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"> <ol style="list-style-type: none"> <li>1. Elements, Compounds and Mixtures</li> <li>2. Physical Properties of Elements</li> <li>3. Metals and Non-Metals</li> <li>4. Joining Atoms and Naming Compounds</li> </ol> </td> <td style="width: 33%;"> <ol style="list-style-type: none"> <li>5. Physical Properties of Compounds</li> <li>6. History of the Atom</li> <li>7. Current Model of the Atom</li> <li>8. Electron Configuration</li> </ol> </td> <td style="width: 33%;"> <ol style="list-style-type: none"> <li>9. The Periodic Table</li> <li>10. History of the Periodic Table</li> <li>11. Group 1 Elements</li> <li>12. Group 0 Elements</li> </ol> </td> </tr> </table>	<ol style="list-style-type: none"> <li>1. Elements, Compounds and Mixtures</li> <li>2. Physical Properties of Elements</li> <li>3. Metals and Non-Metals</li> <li>4. Joining Atoms and Naming Compounds</li> </ol>	<ol style="list-style-type: none"> <li>5. Physical Properties of Compounds</li> <li>6. History of the Atom</li> <li>7. Current Model of the Atom</li> <li>8. Electron Configuration</li> </ol>	<ol style="list-style-type: none"> <li>9. The Periodic Table</li> <li>10. History of the Periodic Table</li> <li>11. Group 1 Elements</li> <li>12. Group 0 Elements</li> </ol>			
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<b>Knowledge &amp; Skills development</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>- State what an element is</li> <li>- State what a compound is.</li> <li>- State what a mixture is</li> <li>- Identify elements, compounds and mixtures from names, formulae and particle diagrams</li> <li>- Use observations to describe the properties of common elements</li> <li>- Explain how elements are classified as metals and non-metals.</li> <li>- Use patterns to classify an element as a metal or non-metal.</li> <li>- Use observations about materials to decide if they are metals or non-metals.</li> <li>- Write the chemical names for some simple compounds.</li> <li>- Write and interpret chemical formulae.</li> <li>- Describe elements and compounds using familiar symbols and formulae.</li> <li>- Explain why a compound has different properties to the elements in it.</li> <li>- Describe similarities and differences between iron, sulphur, and iron sulphide.</li> <li>- Describe the plum pudding model of the atom.</li> <li>- Explain how scientists discovered the nucleus of the atom.</li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>- Describe the structure of the current model of the atom</li> <li>- State the properties of all the subatomic particles</li> <li>- Draw electron configurations of the first 20 elements.</li> <li>- Use patterns to predict properties of elements.</li> <li>- Compare patterns in properties in the groups and periods of the Periodic Table.</li> <li>- Use trends shown by numerical data to predict missing values.</li> <li>- Describe how Mendeleev devised the Periodic Table.</li> <li>- Use the chemical and physical properties of different elements to arrange them according to atomic masses and properties.</li> <li>- Interpret data to describe patterns in properties of the Group 1 elements.</li> <li>- Use patterns to predict properties of Group 1 elements.</li> <li>- Record observations about how Group 1 metals react with water.</li> <li>- Describe the physical and chemical properties of the Group 0 elements.</li> <li>- Use patterns to predict properties of Group 0 elements.</li> <li>- Draw conclusions on the properties and trends of Group 0 elements based on experimental and secondary data.</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>- State what an element is</li> <li>- State what a compound is.</li> <li>- State what a mixture is</li> <li>- Identify elements, compounds and mixtures from names, formulae and particle diagrams</li> <li>- Use observations to describe the properties of common elements</li> <li>- Explain how elements are classified as metals and non-metals.</li> <li>- Use patterns to classify an element as a metal or non-metal.</li> <li>- Use observations about materials to decide if they are metals or non-metals.</li> <li>- Write the chemical names for some simple compounds.</li> <li>- Write and interpret chemical formulae.</li> <li>- Describe elements and compounds using familiar symbols and formulae.</li> <li>- Explain why a compound has different properties to the elements in it.</li> <li>- Describe similarities and differences between iron, sulphur, and iron sulphide.</li> <li>- Describe the plum pudding model of the atom.</li> <li>- Explain how scientists discovered the nucleus of the atom.</li> </ul>	<ul style="list-style-type: none"> <li>- Describe the structure of the current model of the atom</li> <li>- State the properties of all the subatomic particles</li> <li>- Draw electron configurations of the first 20 elements.</li> <li>- Use patterns to predict properties of elements.</li> <li>- Compare patterns in properties in the groups and periods of the Periodic Table.</li> <li>- Use trends shown by numerical data to predict missing values.</li> <li>- Describe how Mendeleev devised the Periodic Table.</li> <li>- Use the chemical and physical properties of different elements to arrange them according to atomic masses and properties.</li> <li>- Interpret data to describe patterns in properties of the Group 1 elements.</li> <li>- Use patterns to predict properties of Group 1 elements.</li> <li>- Record observations about how Group 1 metals react with water.</li> <li>- Describe the physical and chemical properties of the Group 0 elements.</li> <li>- Use patterns to predict properties of Group 0 elements.</li> <li>- Draw conclusions on the properties and trends of Group 0 elements based on experimental and secondary data.</li> </ul>				
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<b>Assessment / Feedback Opportunities</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">Targeted questioning throughout topic</td> <td style="width: 16.6%;">Teacher assessment of practical skills during investigation - verbal</td> <td style="width: 16.6%;">AWOL assessment – formative teacher assessment in students books</td> <td style="width: 16.6%;">Mid topic assessment – formative assessment</td> <td style="width: 16.6%;">Homework topic quiz – formative assessment</td> <td style="width: 16.6%;">End of topic assessment – teacher summative assessment</td> </tr> </table>	Targeted questioning throughout topic	Teacher assessment of practical skills during investigation - verbal	AWOL assessment – formative teacher assessment in students books	Mid topic assessment – formative assessment	Homework topic quiz – formative assessment	End of topic assessment – teacher summative assessment
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<b>Cultural Capital</b>	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>						
<b>SMSC / Promoting British Values</b> <small>(Democracy, Liberty, Rule of Law, Tolerance &amp; Respect)</small>	<ul style="list-style-type: none"> <li>• Listening to others during presentations</li> <li>• Working in groups during practicals or research tasks</li> </ul>						

<b>Reading opportunities</b>	<ul style="list-style-type: none"> <li>• Recommended Read: The Elements: A Visual Exploration of Every Atom in the Universe by Nick Mann (Author), Theodore Gray (Author)</li> <li>• Recommended Read: See Inside Atoms and Molecules by Rosie Dickens (Author), Shaw Nielsen (Illustrator)</li> <li>• Various reading and comprehension activities embedded within scheme of work including current news articles</li> </ul>
<b>Key Vocabulary</b>	<p>Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly</p> <p>Atom, Molecule, Element, Compound, Mixture, Physical, Property, Metal, Malleable, Ductile, Formulae, Symbol, Model, Nucleus, Scatter, Proton, Neutron, Electron, Shell, Period, Group, Column, Row, Organise, Alkali Metals, Reactive, Noble, Unreactive</p>
<b>Digital Literacy</b>	<p>SharePoint resources including topic quiz</p> <p>Possible use of excel to plot graphs and analyse data, PowerPoint, word, etc to present information, internet for research</p>
<b>Cross-Curricular Links</b>	<p>Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators</p>
<b>Careers</b>	<p>Materials Scientist, Physical Properties Chemist, Analytical Chemist, Health and Safety Specialist, Chemical Flavourist,, Hospital Pharmacist, Public Pharmacist, Experimental Chemist, Chemical Patent Lawyer, Chemical Engineer</p>