

Meden School Curriculum Planning							
Subject	Chemistry	Year Group	13	Sequence No.		Topic	3.2.4 Period 3 Elements and Oxides

Retrieval	Core Knowledge	Student Thinking
What do teachers need to <b>retrieve</b> from students before they start teaching <b>new content</b> ?	What <b>specific ambitious knowledge</b> do teachers need to teach students in this sequence of learning?	What real life examples can be applied to this sequence of learning to <b>development of our students thinking, encouraging them to see the inequalities around them</b> and 'do something about them!'
<p>Ks3 Chemistry. Oxides of metals and non-metals.</p> <p>KS4 Chemistry, trends across the periodic table</p> <p>KS4 Chemistry Air Pollution</p> <p>A level Chemistry Alkanes and Fuels. Pollution linked to the petrol/diesel engine.</p>	<p>The reactions of Na and Mg with water.</p> <p>The trends in the reactions of the elements Na, Mg, Al, Si, P and S with oxygen, limited to the formation of Na<sub>2</sub>O, MgO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, P<sub>4</sub>O<sub>10</sub>, SO<sub>2</sub> and SO<sub>3</sub></p> <p>The trend in the melting point of the highest oxides of the elements Na–S</p> <p>The reactions of the oxides of the elements Na–S with water, limited to Na<sub>2</sub>O, MgO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, P<sub>4</sub>O<sub>10</sub>, SO<sub>2</sub> and SO<sub>3</sub>, and the pH of the solutions formed.</p> <p>The structures of the acids and the anions formed when P<sub>4</sub>O<sub>10</sub>, SO<sub>2</sub> and SO<sub>3</sub> react with water.</p> <p>Students should be able to:</p> <ul style="list-style-type: none"> <li>explain the trend in the melting point of the oxides of the elements Na–S in terms of their structure and bonding</li> <li>explain the trends in the reactions of the oxides with water in terms of the type of bonding present in each oxide</li> <li>write equations for the reactions that occur between the oxides of the elements Na–S and given acids and bases.</li> </ul> <p>Students could carry out reactions of elements with oxygen and test the pH of the resulting oxides</p>	<p>Sulfur oxides were a significant air pollutant and were the main cause of acid rain.</p> <p>Fossil fuels used to contain high amounts of sulfur which when burned released sulfur oxides into the air. In the 1980's acid rain was a much more serious problem but the British Government acted on advice from DEFRA and other water monitoring agencies.</p> <p><a href="http://www.gov.uk">Acid rain: 20 years on... - GOV.UK (www.gov.uk)</a></p> <p>This is a good example of scientists working together with the government to solve the environmental and economic problems</p>