



<p>Unit: <b>Using Resources</b></p> <p><b>LESSONS</b></p>	<ol style="list-style-type: none"> <li>1. The Earth's resources</li> <li>2. Potable water</li> <li>3. Analysis and purification of water samples (required practical)</li> <li>4. Waste water treatment</li> </ol>	<ol style="list-style-type: none"> <li>5. Alternative methods to extract metals</li> <li>6. Life cycle assessments</li> <li>7. Recycling</li> <li>8. <b>Corrosion and it's prevention</b></li> </ol>	<ol style="list-style-type: none"> <li>9. <b>Alloys as useful materials</b></li> <li>10. <b>Ceramics, polymers and composites</b></li> <li>11. <b>The Haber process</b></li> <li>12. <b>NPK fertilisers</b></li> </ol>
<p><b>Knowledge &amp; Skills Development</b></p>	<ul style="list-style-type: none"> <li>• State examples of natural products that are supplemented or replaced by agricultural and synthetic products</li> <li>• Distinguish between finite and renewable resources given appropriate information.</li> <li>• Extract and interpret information about resources from charts, graphs and tables</li> <li>• Use orders of magnitude to evaluate the significance of data</li> <li>• Distinguish between potable water and pure water</li> <li>• Describe the differences in treatment of ground water and salty water and give reasons for each step</li> <li>• Describe the process of treating waste water to make it potable</li> <li>• Comment on the relative ease of obtaining potable water from waste, ground and salt water</li> <li>• Describe the processes of phytomining and bioleaching to extract copper from low grade ores</li> <li>• Be able to carry out simple comparative LCAs for shopping bags made from plastic and paper</li> <li>• Evaluate ways of reducing the use of limited resources, given appropriate information</li> </ul>		
<p><b>Assessment / Feedback Opportunities</b></p>	<p><b>Formative Assessment</b></p> <p>Teacher questioning</p> <p>Quizzes</p> <p>Exam style questions</p>		<p><b>Summative assessment</b></p> <p>End of topic assessment</p> <p>Exam questions in future end of topic assessments to assess recall</p>

<b>Key Vocabulary</b>	<p>Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest</p> <p>Agriculture, Potable, Microbe, Pure, Ground Water, Distillation, Filtration, Sterilisation, Sedimentation, Finite, Limited, Phytomining, Bioleaching, Alloy, Composition, Physical, Properties, Composites, Polymers, Commercial, Industrial, Fertilisers</p>
<b>Literacy/Reading Opportunities</b>	<p>Subject specific vocabulary introduced before reading of related texts</p> <p>Word etymology from Latin and Greek roots</p> <p>Reading of simple and complex sentences, paragraphs, articles</p> <p>Scientific writing including structuring methods, comparisons and evaluations</p>
<b>Cross Curricular Themes</b>	<p>Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators</p>
<b>Personal Development (Including British Values, RSE, Citizenship)</b>	<p>The different ways in which a citizen can contribute to the improvement of his or her community, to include the opportunity to participate actively in community volunteering, as well as other forms of responsible activity (C14)</p>
<b>Career Opportunities</b>	<p>Environmental scientists, politicians, water treatment workers, careers within companies like united utilities, metal workers and mining, chemical manufacturing</p>