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| Lesson | Aiming for 4 | | Aiming for 6 | | Aiming for 8 | |
| C14.1 Finite and renewable resources | I can list some human uses of the Earth’s resources. |  | I can describe and classify a resource as finite or renewable when information is given. |  | I can understand data and interpret information using orders of magnitude to compare. |  |
| I can give examples of a finite and a renewable resource. |  | I can explain the use of natural, sustainable, and finite resources. |  | I can explain the role of chemistry in improving agricultural and industrial processes. |  |
| I can state an example of a natural product that is supplemented or replaced by agricultural or synthetic products. |  | I can interpret information from different formats including graphs, charts, tables, and prose. |  | I can draw conclusions consistent with information provided from graphs, charts, tables, and prose and evaluate the validity of the data. |  |
| C14.2 Water safe to drink | I can describe why potable water is important. |  | I can explain the method of obtaining potable water depends on the local conditions. |  | I can explain the difference between pure water and potable water. |  |
| I can list the key processes to make drinking water. |  | I can explain reasons for filtration and sterilisation in water treatment. |  | I can justify the choice of potable water supply in a given scenario. |  |
| I can safely distil salty water. |  | I can describe and explain in detail how to safely distil salty water. |  | I can explain in detail why desalination is not often used to generate safe clean drinking water and justify when it is used. |  |
| C14.3 Treating waste water | I can list what is removed from waste water before it can be released. |  | I can explain why waste water should be treated before it is released into the environment. |  | I can evaluate the ease of obtaining potable water from waste, ground, or salt water. |  |
| I can state the main processes in sewage treatment. |  | I can describe the main processes in sewage treatment. |  | I can explain in detail how and why waste water is processed before it is released into the environment. |  |
| I can state uses of sewage slurry. |  | I can explain the uses of sewage slurry. |  | I can evaluate the use of sewage slurry. |  |

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| Lesson | Aiming for 4 | | Aiming for 6 | | Aiming for 8 | |
| C14.4 Extracting metals from ores |  | | I can describe the processes of phytomining and bioleaching. |  | I can explain in detail how phytomining and bioleaching extract metals. |  |
| I can write balanced symbol equations to explain metal extraction techniques. |  | I can write ionic equations to explain metal extraction techniques and identify the species being oxidised or reduced. |  |
| I can explain the need for new ways of extracting metals (in particular copper). |  | I can evaluate biological methods of metal extraction. |  |
| C14.5 Life Cycle Assessments | I can state the different stages of an LCA in the correct order. |  | I can explain the importance of LCA and how it can be misused. |  | I can explain the limits of LCAs. |  |
| I can carry out an LCA for shopping bags made from plastic or paper with support. |  | I can carry out LCAs for different products when data is supplied. |  | I can evaluate products in detail using LCAs. |  |
| C14.6 Reduce, reuse, and recycle | I can list some products that can be reused or recycled. |  | I can explain the importance of reusing and recycling products. |  | I can evaluate the environmental, economic, and social impacts of reusing and recycling products. |  |
| I can describe how metal can be reused and recycled. |  | I can explain why some recycling can be difficult. |  | I can evaluate ways of reducing the use of limited resources. |  |
| I can describe how glass can be reused and recycled. |  | I can evaluate ways of reducing the use of limited resources when information is given. |  | I can suggest ways of minimising the environmental impact of exploiting raw materials. |  |