# C10 Using Resources

| *Can you…?* | ☺ | 😐 | ☹ |
|---|---|---|---|
| **10.1.1 Using the Earth's resources and sustainable development** | | | |
| Recall that humans use the Earth’s resources to provide warmth, shelter, food and transport. | | | |
| Recall that natural resources, are supplemented by agriculture, provide food, timber, clothing and fuels. | | | |
| Recall that finite resources from the Earth, oceans and atmosphere are processed to provide energy and materials. | | | |
| State the definition of sustainable development. | | | |
| State examples of natural products that are supplemented or replaced by agricultural and synthetic products. | | | |
| Distinguish between finite and renewable resources given appropriate information. | | | |
| Extract and interpret information about resources from charts, graphs and tables. | | | |
| Use orders of magnitude to evaluate the significance of data. | | | |
| **10.1.2 Potable water** | | | |
| Recall that potable water is water that is safe to drink. | | | |
| Distinguish between potable water and pure water. | | | |
| State the important features of potable water. | | | |
| Recall that the methods used to produce potable water depend on available supplies of water and local conditions. | | | |
| Describe how potable water is produced in the UK and give reasons for the steps. | | | |
| State sterilising agents used to produce potable water. | | | |
| State what is meant by desalination and why it may be used in some countries. | | | |
| Outline the processes that can be used for desalination and the disadvantage of these processes. | | | |
| Describe the differences in treatment of ground water and salty water. | | | |
| **10.1.3 Waste water treatment** | | | |
| Recall that urban lifestyles and industrial processes produce large amounts of waste water that require treatment before being released into the environment. | | | |
| State what may need to be removed from sewage and agricultural waste water. | | | |
| State what may need to be removed from industrial waste water. | | | |
| Describe how sewage is treated. | | | |
| Comment on the relative ease of obtaining potable water from waste, ground and salt water. | | | |

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| **10.1.4 Alternative methods of extracting metals (HT only)** | | | |
| State why new ways of extracting copper are required. | | | |
| Outline the process of phytomining. | | | |
| Outline the process of bioleaching. | | | |
| Recall that these processes avoid traditional mining methods of digging, moving and disposing of large amounts of rock. | | | |
| Describe how the metal compounds from these processes can be processed to obtain the metal. | | | |
| Evaluate alternative biological methods of metal extraction, given appropriate information. | | | |
| **4.10.2.1 Life cycle assessment** | | | |
| State what a life cycle assessment is. | | | |
| State the stages of a products life cycle that are assessed. | | | |
| Recall that the use of water, resources, energy sources and production of some wastes can be fairly easily quantified. | | | |
| Recall that allocating numerical values to pollutant effects is less straightforward and requires value judgements, so LCA is not a purely objective process. | | | |
| Explain how selective or abbreviated LCAs can be misused. | | | |
| Carry out simple comparative LCAs for shopping bags made from plastic and paper. | | | |
| **10.2.2 Ways of reducing the use of resources** | | | |
| Recall that the reduction in use, reuse and recycling of materials by end users reduces the use of limited resources, use of energy sources, waste and environmental impacts. | | | |
| Metals, glass, building materials, clay ceramics and most plastics are produced from limited raw materials. Much of the energy for the processes comes from limited resources. Obtaining raw materials from the Earth by quarrying and mining causes environmental impacts. | | | |
| Describe how glass can be recycled and reused. | | | |
| Describe how metals can be recycled and reused. | | | |
| Recall that the amount of separation required for recycling depends on the material and the properties required of the final product. | | | |
| Recall that some scrap steel can be added to iron from a blast furnace to reduce the amount of iron that needs to be extracted from iron ore. | | | |
| Evaluate ways of reducing the use of limited resources, given appropriate information. | | | |