

## Using Resources

Content	RAG
Describe the use of the Earth's natural resources & define 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, and use orders of magnitude to evaluate the significance of data.	
Define potable water, state important features and describe how it is produced in the UK, with reasons for the steps	
Name sterilising agents used in the production of potable water.	
Describe the process of desalination and explain why it may be used in some countries.	
Describe the differences in treatment of ground water and salty water.	
Describe how sewage is treated, and explain why sewage and agricultural waste water requires treatment before releasing into the environment	
State why new ways of extracting copper are required, and outline the processes of phytomining and bioleaching <b>HT</b>	
Describe how the metal compounds from these processes can be processed to obtain the metal. <b>HT</b>	
Evaluate alternative biological methods of metal extraction, given appropriate information. <b>HT</b>	
State what a life cycle assessment is, and 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.	
Describe the benefits of the reduction in use, reuse and recycling of materials by end users	
Describe the environmental impacts/disadvantages of obtaining raw materials from the Earth.	

Content	RAG
Describe how glass and metals can be recycled and reused.	
Evaluate ways of reducing the use of limited resources, given appropriate information.	
Describe corrosion, including rusting. State the conditions needed for rusting to occur.	
Describe methods of preventing corrosion & explain why aluminium does not corrode like other metals. <b>Explain sacrificial protection in terms of relative reactivity.</b>	
Describe experiments and interpret results to show that both air and water are necessary for rusting.	
Recall that most metals in everyday use are alloys. State what brass, bronze and steel are made from. Recall a use of each of these alloys.	
Describe the alloys of gold used in jewellery and describe how the proportion of gold in the alloy is measured in carats.	
Describe the composition and properties of different types of steel.	
State the properties of aluminium alloys, recall their uses.	
Interpret and evaluate the composition and uses of alloys other than those above given appropriate information.	
Describe how soda-lime glass and borosilicate glass are made and how their properties differ. Compare properties, when given appropriate information	
<b>Describe how clay ceramics are made. Compare properties, when given appropriate information</b>	
Describe the factors that affect the properties of polymers. <b>Compare physical properties, when given appropriate information</b>	
<b>Describe and explain the difference between thermosoftening and thermosetting polymers in terms of their structures.</b>	
<b>Describe how composites are made, give some examples and describe some properties of composites. Compare properties, when given appropriate information</b>	
Describe the Haber Process & why it is needed. Describe the reaction conditions and use of a catalyst.	
State a source for the nitrogen and a source for the hydrogen used in the Haber process.	
Describe what an NPK fertiliser is and explain how they are made.	
Recall that phosphate rock is treated with nitric acid or sulfuric acid to produce soluble salts that can be used as fertilisers	
Recall that ammonia can be used to manufacture ammonium salts and nitric acid.	
Compare the industrial production of fertilisers with laboratory preparations of the same compounds, given appropriate information	