

Key points to learn

1. Natural resources	Can be found in their natural form. Some are finite and will run out.
2. Fossil fuels	Coal, crude oil and natural gas. Formed from fossilised remains of plants and animals
3. Non-renewable	Finite. Are used quicker than they are made. So will run out
4. Renewable	Made quicker than they are used. Will not run out
5. Sustainable development	Meets current demands without affecting future generations.
6. Potable water	Water that is safe to drink. Not pure as it contains dissolved substances
7. Pure water	No dissolved substances. Only H ₂ O
8. Normal way of making potable water	<ol style="list-style-type: none"> 1. Choose source of water 2. Filter the water in filter beds 3. Sterilise the water with chlorine, ozone or ultraviolet light
9. Desalination	<p>Method for treating salty water.</p> <p><u>Two methods</u> both energy intensive</p> <ol style="list-style-type: none"> 1. Distillation – evaporate water then condense steam 2. Reverse osmosis. Uses membranes
10. Life cycle assessments (LCAs)	Product environmental impact in: <ol style="list-style-type: none"> 1. Extracting raw materials 2. Manufacturing and packing 3. Use during life 4. Disposal at end of life
11. Recycling	Saves energy and finite resources. Less pollution from making new

Key points to learn

12. Aerobic	With oxygen (exposed to air)
13. Anaerobic	Without oxygen
14. Treating waste water	<ol style="list-style-type: none"> 1. Remove lumps – screening 2. Let sludge sink – sedimentation 3. Bacteria added to clean - Aerobic treatment
15. Treating sludge	Anaerobic digestion by bacteria Can be used as fertiliser or as biofuel
16. Ore	Rock containing enough metal compounds to be worth extracting Contain copper compounds. Becoming scarce so much harder to find large quantities. Main ways of extracting copper: <ol style="list-style-type: none"> 1. Mining – dig up rocks 2. Phytomining 3. Bioleaching 4. Electrolysis 5. Displacement with iron
17. Copper Ores	Plants absorb coppers compounds. Plants then burned and copper obtained from ash
18. Phytomining	Bacteria pumped underground absorb copper. Produce leachate solutions containing copper compounds
19. Bioleaching	Breaking down a substance in a liquid using electricity A more reactive metal will displace a less reactive metal
20. Electrolysis	The cost of doing something
21. Displacement	
22. Economic issues	

Trilogy C12: The Earth's resources

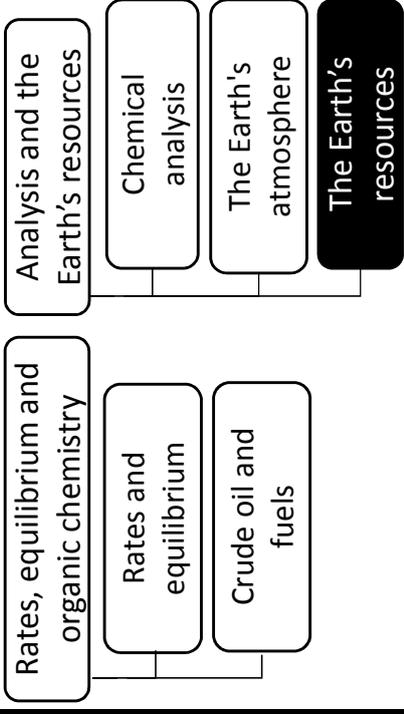
resources

Collins rev guide: Using resources

Knowledge Organiser



Big picture (Chemistry Paper 2)



Background

Up to 60% of the rubbish in the average dustbin could be recycled. This wasteful approach has big environmental and economic impact for us all.



What are natural resources and why are they important? This topic looks at some of the issues that affect all of humankind.

Additional information

Content in *italics* is Higher Tier only.

Look back at Topic C5 and C6 for more on displacement reactions and electrolysis.



Quick Fire Question

This worksheet is fully supported by a video tutorial; <https://youtu.be/xBUXqfa2gHo>

1. What different ways can humans use the Earth's resources?
2. Give 3 resources we get from the Earth.
3. Define finite resource.
4. Define renewable resource.
5. How do you produce portable water?
6. How do you sterilise water?
7. How do you desalinate water?
8. Why do we need to develop new methods to extract materials from the Earth?
9. What is bioleaching?
10. What is phytomining?
11. How do we assess the impact of an object?
12. How do we analyse a life-cycle assessment?
13. How can you reduce amount of resources used?

Chemistry Only

14. What is rusting?
15. How can we prevent corrosion?
16. What is the structure of an alloy?
17. How does the structure of an alloy relate to its properties?
18. What is the composition of most of the glass we use?
19. What are clay ceramics?
20. How do the structure of polymers link to their properties?
21. What is the Haber process used for?
22. In the Haber process, where does the nitrogen and hydrogen come from?
23. In the Haber process, what are the conditions needed?