

Chemistry – Year 11 – Using Resources

A	Using Earth's Resources	
1	Human Use	Provides: Warmth Shelter Food Transport
2	Finite Resources	Used up at a faster rate than they can be replaced. Eventually will run out. Crude oil to make polymers. Crude oil to make petrol & diesel. Limestone to make cement & concrete. Metal ores used to extract metals.
3	Renewable Resources	Can be replaced at the same rate as they are being used up. Crops to make biofuels.
4	Sustainable Development	Development that meets the needs of current generations without compromising the ability of future generations to meet their own needs.

B	Water Safe to Drink	
1	Potable Water	Water safe to drink. Contains some dissolved substances. Can be produced from ground water (rainwater) or salty water (sea water).
2	Desalination (Salty Water)	Removal of salt. Done by distillation or reverse osmosis. Requires large amounts of energy.
3	Pure Water	Does not contain dissolved substances.
4	Safe to Drink	For humans, drinking water should have sufficiently low levels of dissolved salts and microbes.
5	Water Treatment (Ground Water)	Passed through filter beds to remove solids. Chlorine, ozone or UV light are used to sterilise the water.
6	Waste Water Treatment	Screening and grit removal. Sedimentation to produce sewage sludge and effluent. Anaerobic digestion of sewage sludge. Aerobic biological treatment of effluent.

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C		Life Cycle Assessments & Recycling
1	LCA's (Life Cycle Assessments)	<p>Carried out to assess the environmental impact of products in each of these stages:</p> <p>Extracting and processing raw materials.</p> <p>Manufacturing and packaging.</p> <p>Use and operation during its lifetime.</p> <p>Disposal at the end of its useful life, including transport and distribution at each stage.</p>
2	Reduce, Reuse, Recycle	<p>Reduce:</p> <p>Our use of limited resources.</p> <p>Our use of Energy.</p> <p>The waste we produce.</p> <p>Environmental impacts.</p>
3	Glass Bottles	<p>Crushed.</p> <p>Melted.</p> <p>Moulded into new product</p>
4	Recycling Metals	<p>Saves Energy.</p> <p>Saves limited resources.</p> <p>Saves finite metal ores.</p> <p>Saves fossil fuels.</p> <p>Pollution caused by mining and extracting metals is reduced.</p>