

Combined Science - Chemistry - Key Stage 4
C10 Using Resources

Lesson 1

Finite resources

Miss Offer



Independent task - Recall questions

Answer the following questions:

1. What is a finite resource?
2. What is a synthetic product?
3. Give 3 examples of a finite resource
4. What is a renewable resource?
5. Give 3 examples of renewable resources
6. Give 3 examples of a synthetic product
7. What is another word for finite?



Interpreting data on finite resources

Finite resource	Years until depleted at current level	Years until depleted at accelerated level
Aluminium	1780	100
Copper	14	3
Oil	18	10
Gas	39	13
Coal	100	20



Independent task - Interpreting data on finite resources

Answer the following questions:

1. Which finite resource is likely to run out first?
2. How much faster will coal run out at an accelerated level than today?
3. How much faster will copper run out at an accelerated level than today?
4. What impact does renewable resources have on the quantity of finite resources?

Finite resource	Years until depleted at current level	Years until depleted at accelerated level
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Copper	14	3
Oil	18	10
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Independent task - making ethanol

Ethanol is a fuel.

It can be made in 2 ways - either from the fermentation of plants such as sugar cane or from ethene that is obtained during cracking.

Evaluate the production of ethanol by each method.

	Fermentation	Hydration of ethene
Starting material	Sugar cane	Ethene
Starting material obtained from	Growing sugar cane - uses photosynthesis	Fractional distillation of oil. Cracking of alkanes
Method of manufacturing	Sugar cane is crushed and yeast added for fermentation to take place	Ethene is hydrated using steam and a catalyst at high temperature
Speed of reaction	Fermentation takes 3 days	Reaction is fast and can be done continuously

