

14–16 years

Key terms accessible glossary: crude oil



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Addition polymerisation

Example

Addition polymerisation joins many ethene molecules together to form the polymer poly(ethene)

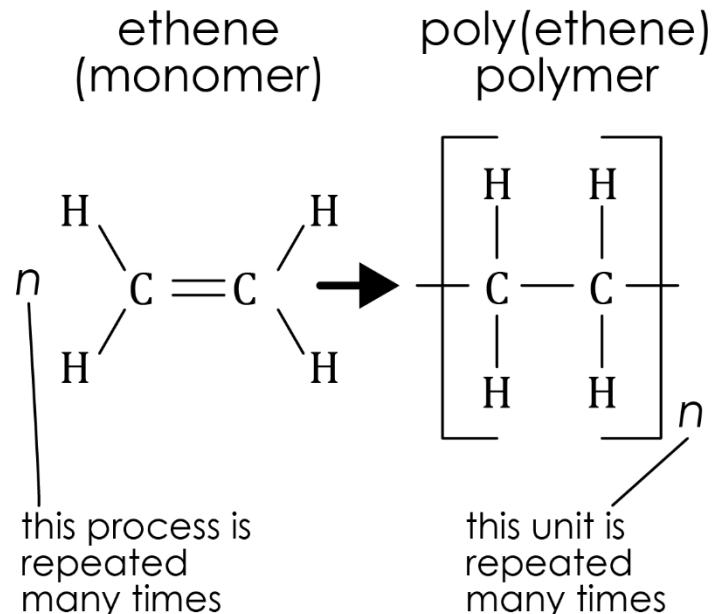
In other words ...

a process where many small molecules (monomers) join together to form a large molecule, (polymer) without any by-products

when many monomers with a C=C double bond join together to form a polymer; no other substance is produced in the reaction

Break it down

Addition (adding together), polymerisation (forming a polymer)



Don't confuse with ...

condensation polymerisation. Where monomers join together and a small molecule is released

Say it

A-di-shen pol-i-mar-eye-zay-shen

Monomer

a small molecule that can react with many other small molecules to form a polymer

In other words ...

a small molecule that can join together with other small molecules, forming new bonds and one large molecule (a polymer)

Sign it

Watch a video:
bit.ly/3Z5j18t



Say it

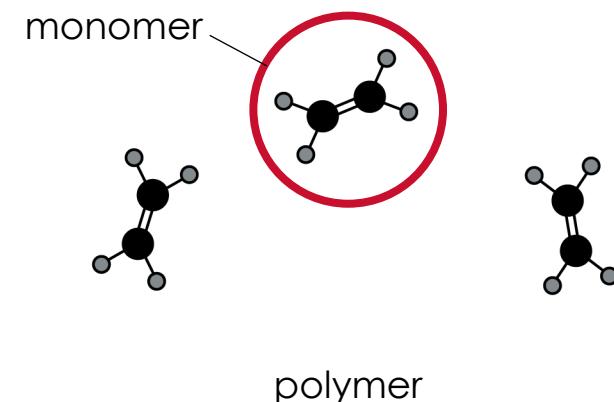
Mon-a-ma

Break it down

Mono (one), mer (part of a unit)

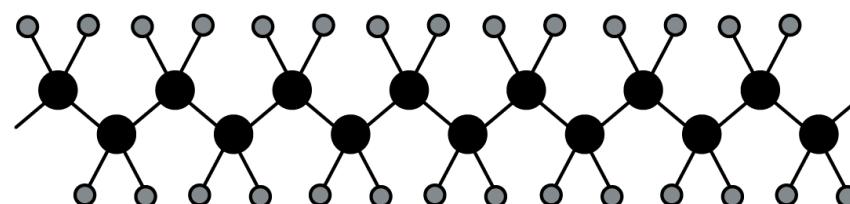
Example

Ethene is the monomer which joins with other ethene molecules to form the polymer poly(ethene)



Don't confuse with ...

polymer. A monomer is a single unit which forms the polymer



Similar words

Building block

Non-biodegradable

In other words ...

a substance that cannot be broken down naturally by living organisms

Say it

Non-b-eye-o-di-gray-da-ble

Break it down

Non (not), bio (living organisms), degrade (to break down)

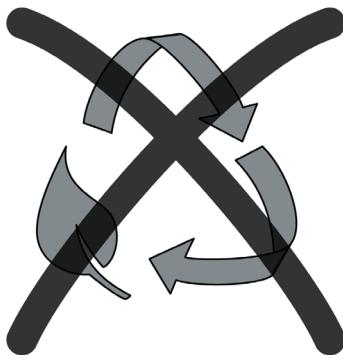
Similar words

Non-decomposable

not able to be broken down by living organisms in the natural environment

Example

Many plastics are non-biodegradable



Don't confuse with ...

non-renewable

Other contexts

Non-biodegradable is often used to describe materials like plastics which linger in the environment for a long time, while biodegradable materials like food waste break down naturally

Polymer

a very large molecule made by joining together lots of small molecules

In other words ...

a very large molecule which was made by joining many small molecules (monomers) together

Sign it

Watch a video:  bit.ly/4d5jRYQ

Say it

Pol-i-ma

Similar words

Chain

Break it down

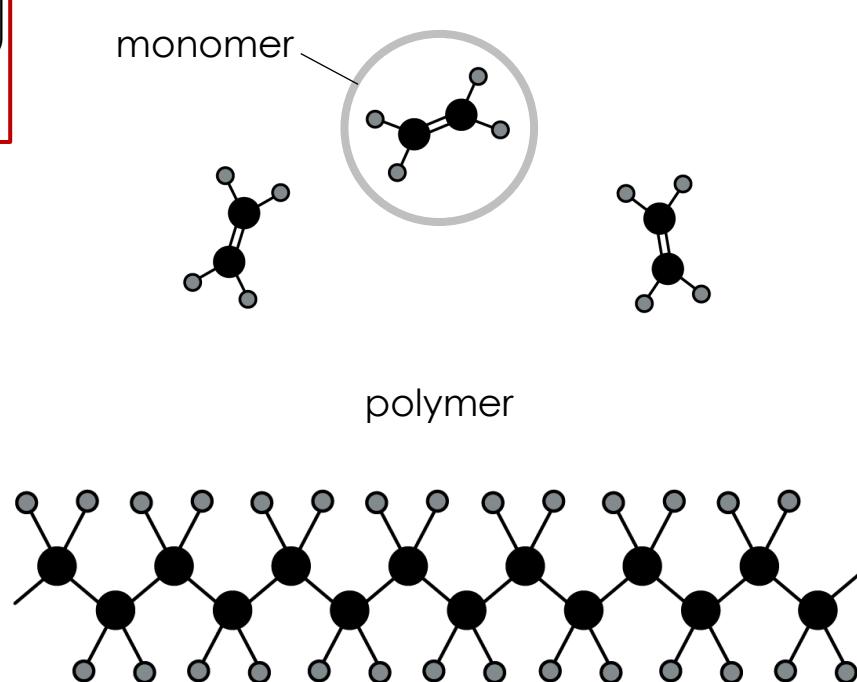
Poly (many), mer (part of a unit)

Example

Poly(ethene) is a polymer made from repeating units of ethene molecules

Don't confuse with ...

plastics. While many polymers are plastics, this is a type of material, rather than a type of molecule



Other contexts

In everyday life, 'polymer' refers to many materials like plastic, rubber or synthetic fabrics

Repeat unit

a small part of a polymer which repeats to produce the complete polymer chain

In other words ...

the part of the polymer that repeats itself over and over many times to form the whole polymer chain

Similar words

Repeating section

Say it

Ri-pee-t y-ue-nit

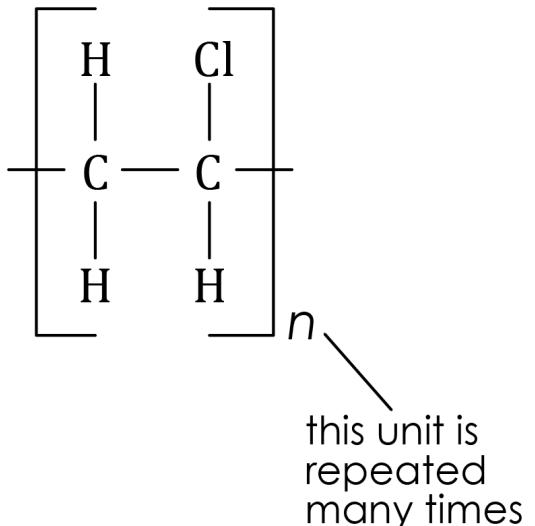
Break it down

Repeat (multiply over and over) unit (single part)

Example

The repeat unit of poly(chloroethene) is shown in the diagram. (Also known as polyvinyl chloride or PVC)

poly(chloroethene)
polymer



Don't confuse with ...

monomer. The repeat unit refers to the specific part of the polymer chain that repeats, but the monomer is the single molecule you started with

Catalyst

a substance that can speed up a reaction without being used up; it does this by lowering the activation energy for the reaction

In other words ...

a substance which speeds up a chemical reaction without being changed or used up in the reaction

Sign it

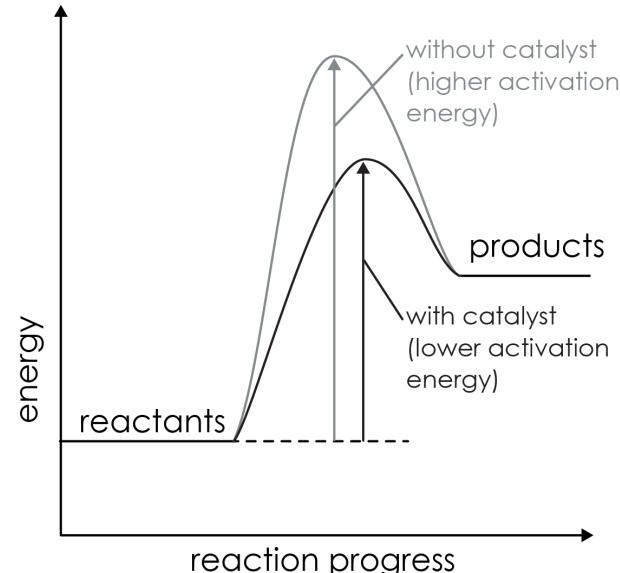
Watch a video: bit.ly/3EVtpsE

Say it

Cat-el-ist

Break it down

Cata (down),
lyst (lytic,
breaking apart)



Example

A catalyst was used to speed up the chemical reaction

Don't confuse with ...

reactant. A catalyst is not a reactant and does not get used up in the process. It doesn't appear in the chemical equation

Other contexts

Catalyst is used in everyday speech to describe something that causes a change or accelerates a process – like 'a catalyst for change'. Enzymes are biological catalysts.

Catalytic cracking

when larger hydrocarbons are broken down into smaller, more useful, molecules by passing the vapours over a catalyst such as aluminium oxide

In other words ...

a process where large hydrocarbons are broken down chemically into smaller ones using a catalyst

Say it

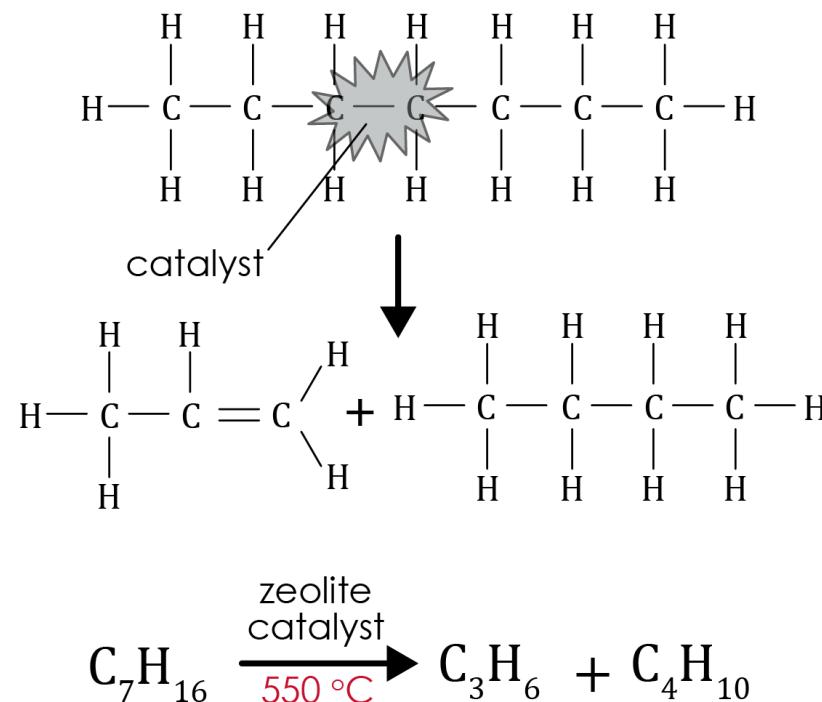
Cat-a-lit-ic crac-ing

Break it down

Cata (use of a catalyst), lytic (breaking down), cracking (breaking down into smaller parts)

Example

Larger molecules from crude oil can be cracked into smaller, more useful ones using a catalyst



Don't confuse with ...

steam cracking. A similar process, but using steam in place of a catalyst

Other contexts

Cracking means to break something, like cracking an egg

Steam cracking

In other words ...

a process where large hydrocarbons are broken down chemically into smaller ones using steam

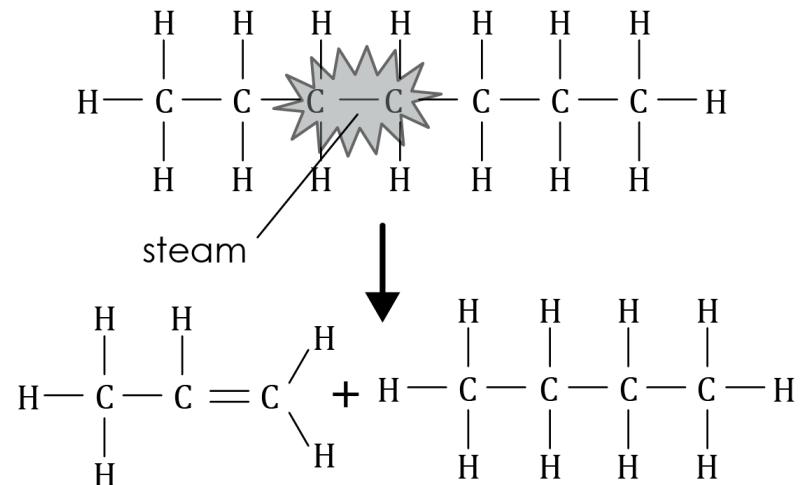
Say it

Stee-m crac-ing

Break it down

Steam (water vapour), cracking (breaking apart)

when larger hydrocarbons are broken down into smaller, more useful, molecules by mixing the vapours with steam and heating to very high temperatures



Similar words

Cracking (the umbrella term for all cracking processes)

Example

Steam cracking is used in the production of smaller hydrocarbons like ethene from larger molecules

Don't confuse with ...

catalytic cracking. This uses a catalyst instead of steam

Finite resource

a useful substance or energy store that is non-renewable

In other words ...

a resource that will eventually run out because it cannot be replaced in a way which balances our usage

Example

Coal is a finite resource because it cannot be replaced quickly enough to balance our use

Say it

F-eye-n-eye-t ri-zors



Break it down

Finite (limited),
resource (something useful)

Similar words

Non-renewable energy source

Don't confuse with ...

renewable resources, such as wind or solar power

Other contexts

Finite means something with limits, the opposite of infinite

Fossil fuel

a fuel formed over millions of years from the remains of dead plants and/or animals, for example crude oil

In other words ...

a fuel like coal, oil, or natural gas, that comes from the remains of dead plants and animals over millions of years

Sign it

Watch a video:



bit.ly/432i3Lz



Say it

Fos-el fy-ue-al

Break it down

Fossil (remains of ancient life), fuel (a substance which burns to release energy)

Similar words

Non-renewable energy source

Example

Coal and oil are fossil fuels which are burnt to generate electricity

Don't confuse with ...

fuels. Not all fuels are fossil fuels, for example bioethanol is produced from fermentation

Other contexts

Fossil in everyday life refers to the preserved remains of ancient plants or animals, like a fossil found in rock

Non-renewable

when something is being used up at a faster rate than it can be replaced

In other words ...

something that can't be replaced naturally or quickly, so it will eventually run out if we keep using it

Sign it

Watch a video:
bit.ly/43j6xN6

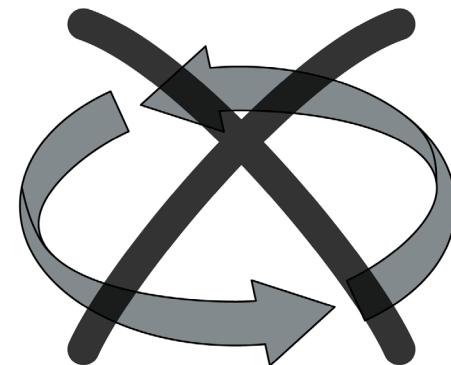


Say it

Non ri-ny-ue-ab-el

Break it down

Non (not), renewable (able to be replaced or regenerated)



Similar words
Exhaustible

Example

Fossil fuels are non-renewable because they take millions of years to form

Don't confuse with ...

renewable resources like wood. Although trees can take years to form, this is a short timeframe compared to the millions of years needed to form coal, oil or natural gas!

Boiling point

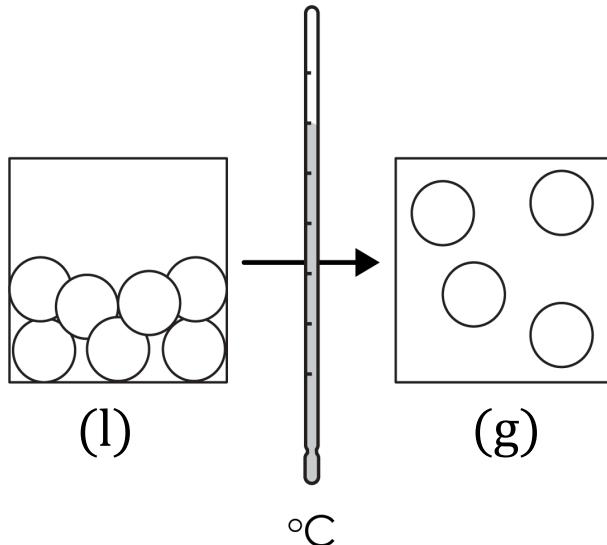
the temperature at which a pure substance changes from a liquid to a gas or from a gas back to a liquid

In other words ...

the temperature that a substance boils or condenses

Sign it

Watch a video:  bit.ly/4444xcp



Break it down

Boiling (process of turning liquid to gas), point (specific temperature)

Example

The boiling point of water is 100°C

Say it

B-oy-li-ng p-oy-nt

Don't confuse with ...

a high number - a boiling point is not always a high number. Oxygen has a boiling point of -183 °C

Other contexts

'Boiling point' is often used in everyday life, and can also refer to when someone gets very angry or upset: 'reaching their boiling point'

Feedstock

In other words ...

a raw material or starting substance used in an industrial process to make products

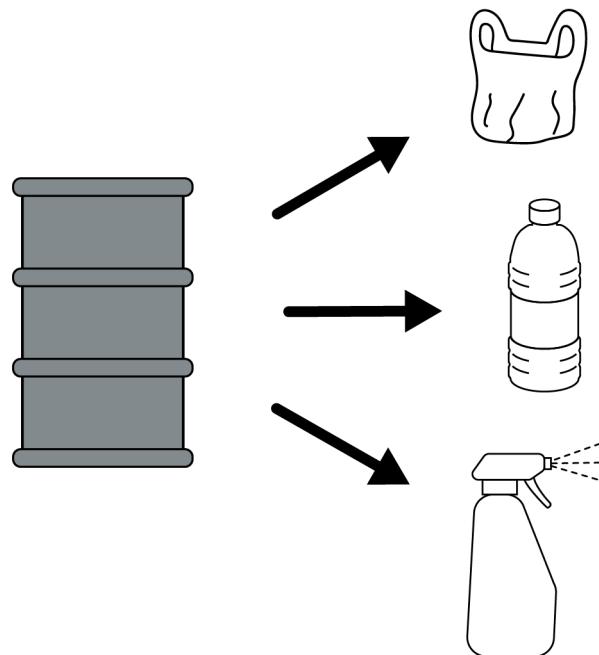
Say it

Feed-st-oc

Break it down

Feed (provide or supply),
stock (material)

a starting substance for an industrial process, such as making solvents or detergents



Example

Crude oil is the feedstock for making many everyday products, like petrol or plastics

Don't confuse with ...

reactant or product. Feedstock refers to the raw starting material

Similar words

Raw material

Other contexts

'Stock' often refers to supplies

Fraction

In other words ...

a part of a mixture that has similar properties, especially in fractional distillation

Sign it

Watch a video:  bit.ly/42OF6e4

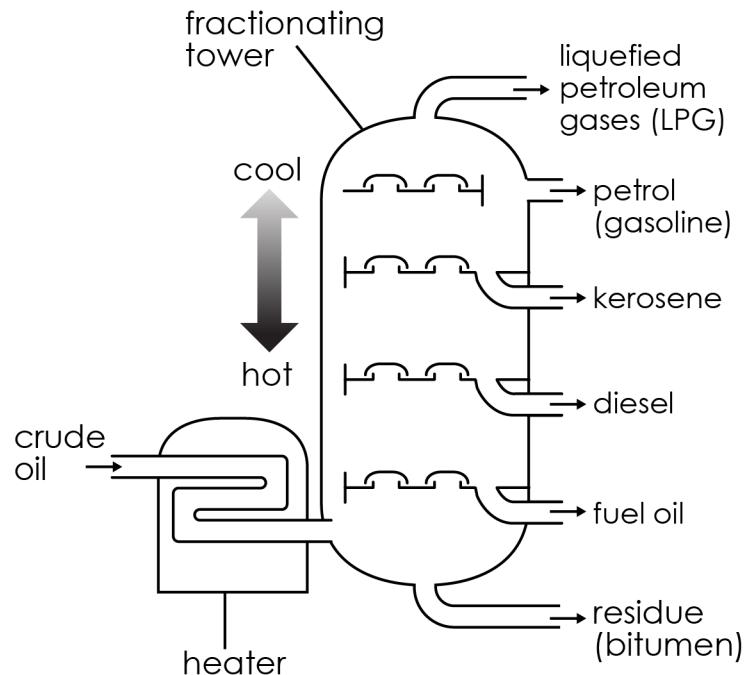
Say it

Frac-shen

Break it down

Fract (to break), ion (part or section)

a mixture of hydrocarbons with similar boiling points that condense together during fractional distillation of crude oil



Example

Crude oil can be separated into fractions with similar boiling points, like diesel used as fuel for cars, vans, lorries and trains

Don't confuse with ...

fraction in mathematics. Here it refers to a portion or part of a mixture

Other contexts

Fraction in everyday life refers to part of a whole, like a fraction of a pie

Similar words

Part, section

Fractional distillation

a method of separation involving continuous evaporation and condensation used to separate a mixture of liquids with different boiling points

In other words ...

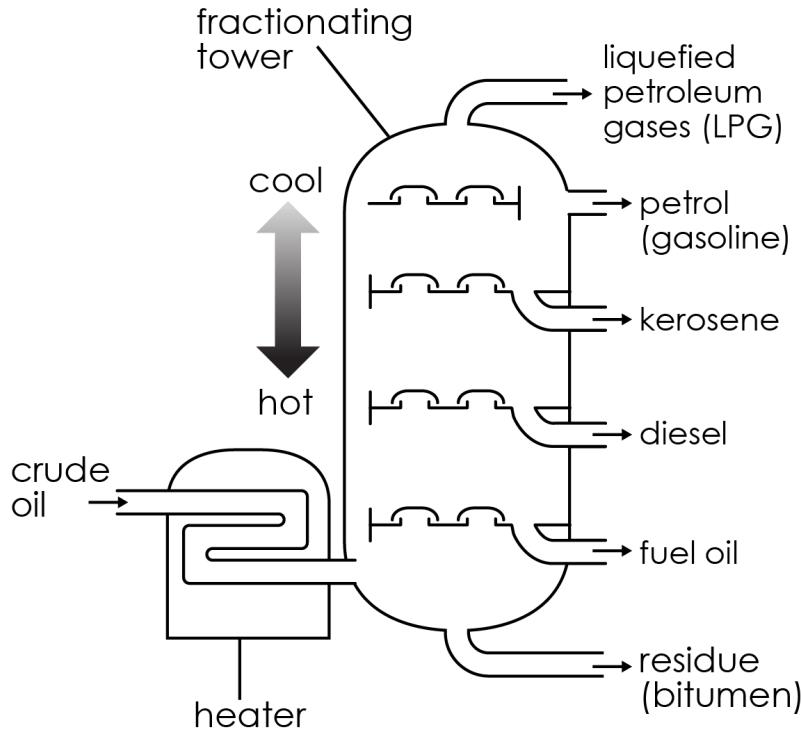
separating liquids with different boiling points by evaporating the mixture and collecting each part as it condenses

Say it

Frac-shen-el dis-til-ay-shen

Break it down

Fractional (part or section), distillation (process of separating liquids by evaporation and condensation)



Example

Fractional distillation is used to separate different components of crude oil into products like gasoline, diesel, and kerosene

Don't confuse with ...

simple distillation. Fractional distillation can separate multiple different components at the same time by their differences in boiling points

Fractionating tower

used in an oil refinery to carry out fractional distillation of crude oil by condensing the vapours at different levels which are cooler as you go higher up

In other words ...

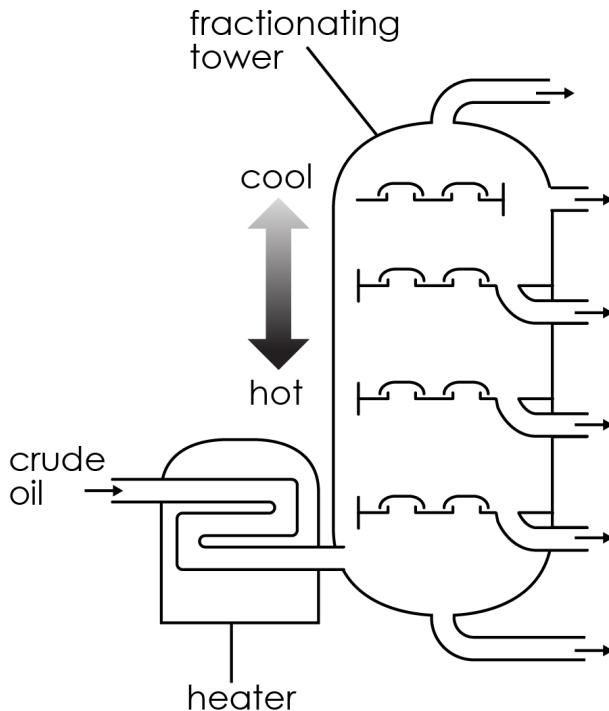
a tall structure in an oil refinery with a temperature gradient. It separates crude oil into its components by condensing at different levels

Say it

Frac-shen-ay-t-ing t-our

Break it down

fractionating (separating into parts), tower (tall building or structure)



Similar words

Distillation column

Example

The fractionating tower in an oil refinery separated the crude oil into the different fractions

Don't confuse with ...

fractional distillation. This is the name of the process, not the tower itself

Fuel

a substance that can transfer useful energy as heat when it is burned

In other words ...

a substance which burns to release energy, like wood, coal or gas

Sign it

Watch a video:



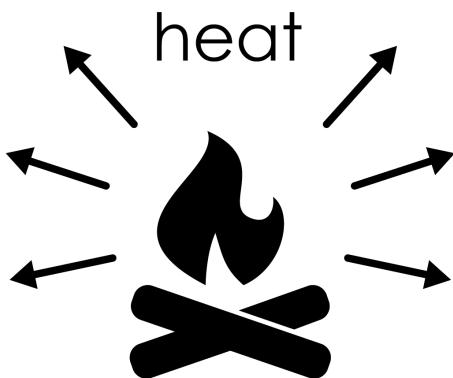
bit.ly/3GVOnlr

Say it

Fy-ue-al

Similar words

Energy source/store



Example

Petrol is a fuel used to power cars

Don't confuse with ...

energy. Fuel is a substance which releases stored energy

Other contexts

Fuel is often used in everyday life to refer to food or drink as energy for the body

Vapour

another word for a gas or mixture of gases

In other words ...

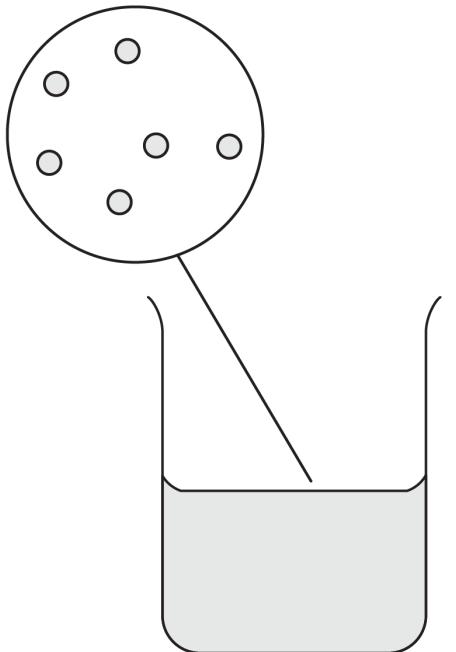
a gas or mixture of gases, often from a liquid that has been heated

Say it

V-ay-pa

Break it down

Vap (mist/steam)



Example

When water boils, the steam can be referred to as vapour

Don't confuse with ...

gas. Vapour refers specifically to a gas that comes from a liquid or a solid, like water vapour

Other contexts

Vapour is commonly used in terms like 'steam' or 'mist', but not as a general term for gases

Alkane

a hydrocarbon with the general formula C_nH_{2n+2} , such as methane, ethane, propane and butane

In other words ...

a type of hydrocarbon where all the bonds between carbon atoms are single bonds

Sign it

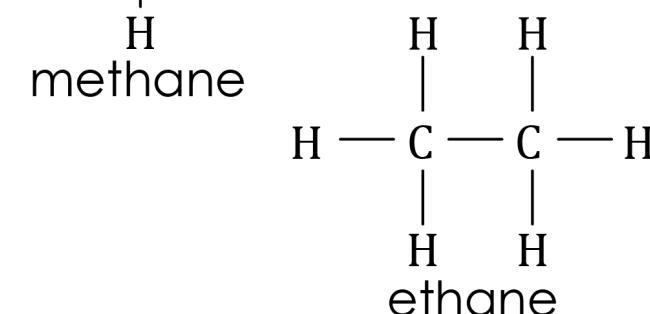
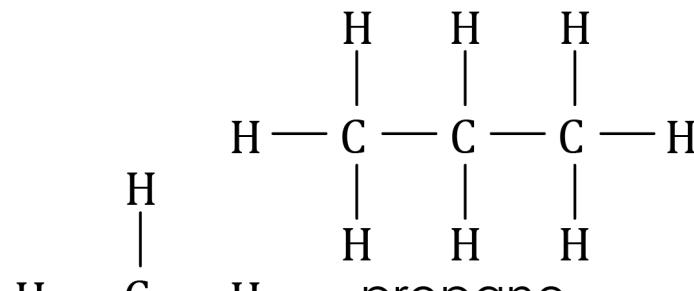
Watch a video:
bit.ly/4mawMgj

Say it

Al-c-ay-n

Break it down

Alk (hydrocarbon),
ane (suffix for hydrocarbons
with only a single bond)



Example

Methane, ethane and propane are the first three alkanes

Don't confuse with ...

hydrocarbon:
compounds which
contain hydrogen
and carbon only but
may have double (or
triple) bonds between
carbon atoms

Similar words

Saturated hydrocarbon

Flammability

how easy it is to ignite a substance

In other words ...

how easily a substance catches fire and burns

Say it

Flam-a-bil-at-y

Break it down

Flamm (from flame, fire), ability (able to do something)



Similar words

Combustibility

Example

Gasoline has a high flammability and can catch fire easily

Don't confuse with ...

oxidising. The hazard which refers to a substance's ability to combine chemically with oxygen

Other contexts

A substance with high flammability is more commonly referred to as a 'fire hazard' when talking about safety

Homologous series

a series of organic compounds with the same general formula, which react in a similar way, such as alkanes

In other words ...

a group of compounds that have the same general formula and react in similar ways

Example

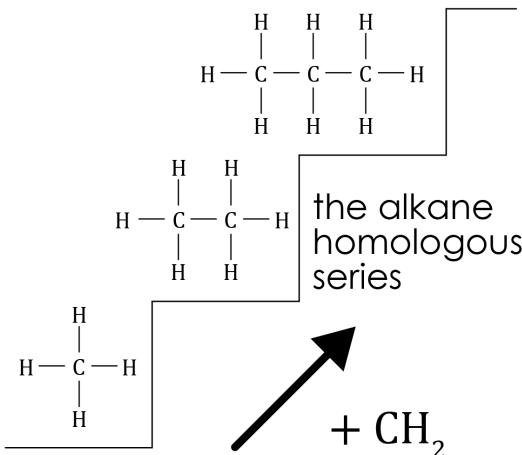
Alkanes form a homologous series because they all have the same formula and similar chemical properties

Say it

Ha-mol-ag-as s-ear-ee-z

Break it down

Homologous (having the same structure), series (a group of related things)



Similar words

Family (as in the 'alkane family' or 'alkene family')

Don't confuse with ...

hydrocarbon. Compounds which contain hydrogen and carbon only, but refers to all the hydrocarbon homologous series

Other contexts

'Series' is a term used in an everyday context, such as a TV series or book series

Hydrocarbon

In other words ...

a compound made from carbon and hydrogen atoms only and no other element

Sign it

Watch a video:
bit.ly/42I9Jlc



Say it

H-eye-dro-ca-ben

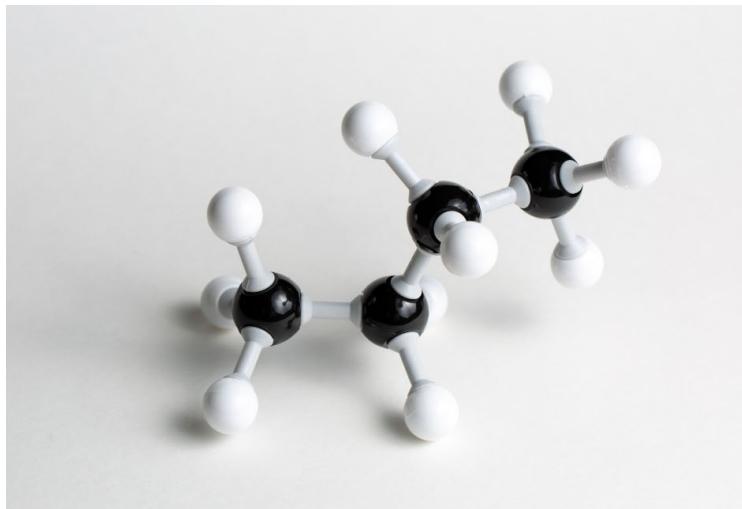
Break it down

hydro (hydrogen),
carbon

a compound that is made from the elements carbon and hydrogen only

Example

Methane is the simplest hydrocarbon



Don't confuse with ...

organic compounds more generally. Not all organic compounds are hydrocarbons

Other contexts

We often refer to hydrocarbons as fuels like gasoline or natural gas

Similar words

A type of organic compound

Saturated hydrocarbon

In other words ...

a hydrocarbon with only single bonds between carbon atoms. It has the maximum amount of hydrogen atoms possible

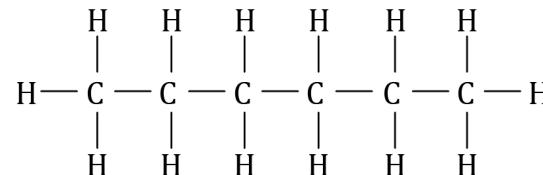
Say it

Sach-ar-ay-tid h-eye-dro-ca-ben

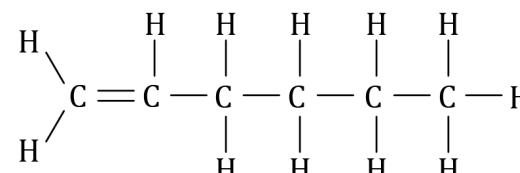
Break it down

saturated (filled to capacity), hydrocarbon (a compound of hydrogen and carbon only)

a hydrocarbon with only a single bond between the carbon atoms, such as an alkane



hexane, C_6H_{14}
saturated



hexene, C_6H_{12}
unsaturated

Example

Hexane is a saturated hydrocarbon, whereas hexene is unsaturated

Don't confuse with ...

alkanes. Alkanes refers to the family of compounds, rather than its saturation

Other contexts

Saturated in an everyday context means something is completely soaked or filled. For example, a saturated solution is one that cannot dissolve any more solid.

Viscosity

In other words ...

the thickness or stickiness of a liquid – how treacle-like it is

Sign it

Watch a video:
bit.ly/3EHD4C

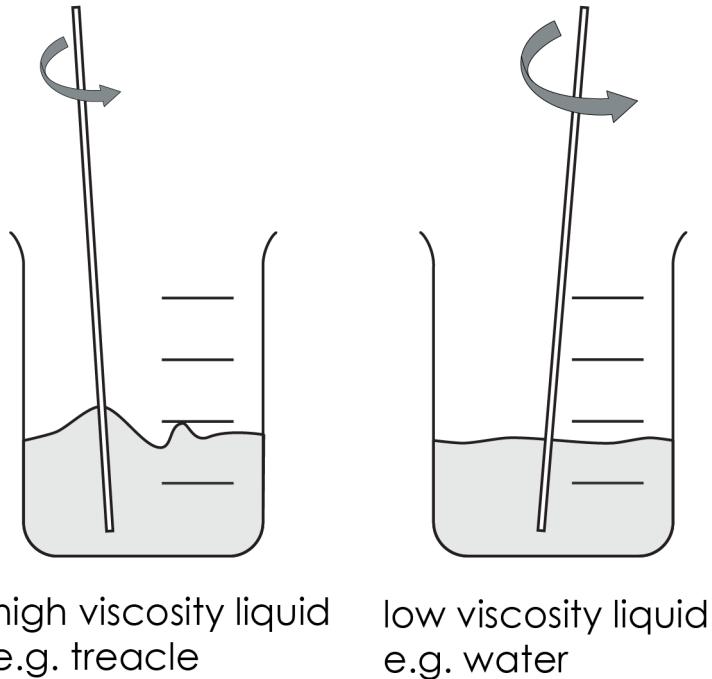
Say it

Vis-cos-at-y

Break it down

Visc (sticky or thick),
osity (state or quality
of something)

how easily a liquid pours; more viscous liquids are thick and 'gloopy', whereas runny liquids have a low viscosity



high viscosity liquid
e.g. treacle

low viscosity liquid
e.g. water

Example

Honey has a high viscosity, while water has a low viscosity

Don't confuse with ...

density. Viscosity is about how easily it flows, not how heavy it is for its volume

Similar words

Thickness, gloopiness

Other contexts

Viscosity is used to describe things like syrup or motor oils

Acknowledgements

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SSC BSL Glossaries of Curriculum Terms

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