

# AQA GCSE Chemistry: Higher

Advance Information of Assessed Content 2022

Link to specification: [GCSE Chemistry Specification Specification for first teaching in 2016 \(aqa.org.uk\)](#)

Link to advance information document: [Advanced information June 2022 - GCSE Chemistry \(8462\) \(aqa.org.uk\)](#)

# Chemistry Paper 1 - H

These specification points will be the **major focus** of this paper.

**Exam date: 27<sup>th</sup> May**

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Spec point	Concepts	CGP revision guide pages	Oxford Revise guide pages	Bitesize	YouTube
<b>4.1.2</b> The Periodic Table	<ul style="list-style-type: none"> <li>-The Periodic Table is arranged in order of proton number</li> <li>-What atoms of elements in the same group have in common</li> <li>-What atoms of elements in the same period have in common</li> <li>-development in the Periodic Table</li> <li>-ions formed from metals and non-metals</li> <li>-trends in physical and chemical properties of group 1,7 and 0 elements</li> <li>- Reactions of group 1 and 7 elements</li> </ul>	20-26	39-46	<a href="https://www.bbc.co.uk/bitesize/guides/z3sg2nb/revision/1">https://www.bbc.co.uk/bitesize/guides/z3sg2nb/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/zg923k7/revision/1">https://www.bbc.co.uk/bitesize/guides/zg923k7/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/zqwtcj6/revision/1">https://www.bbc.co.uk/bitesize/guides/zqwtcj6/revision/1</a>	<a href="https://www.youtube.com/watch?v=ldS9roW7IzM&amp;t=119s">https://www.youtube.com/watch?v=ldS9roW7IzM&amp;t=119s</a>  <a href="https://www.youtube.com/watch?v=uwzXfZoCP_k">https://www.youtube.com/watch?v=uwzXfZoCP_k</a>  <a href="https://www.youtube.com/watch?v=dZGDUKQa6g">https://www.youtube.com/watch?v=dZGDUKQa6g</a>  <a href="https://www.youtube.com/watch?v=HT1zAPQIBAQ">https://www.youtube.com/watch?v=HT1zAPQIBAQ</a>
<b>4.2.1</b> Chemical bonds, ionic, covalent and metallic	<ul style="list-style-type: none"> <li>-Describe the process of ionic bonding</li> <li>-Describe the process of covalent bonding</li> <li>-Describe the process of metallic bonding</li> <li>-explain chemical bonding in terms of electrostatic forces and the transfer or sharing of electrons.</li> <li>-work out the charge on the ions of metals and non-metals from the group number of the element, limited to the metals in Groups 1 and 2, and non-metals in Groups 6 and 7</li> <li>-Describe the structure of ionic compounds</li> <li>-draw dot and cross diagrams for the molecules of hydrogen, chlorine, oxygen, nitrogen, hydrogen chloride, water, ammonia and methane</li> <li>-Describe the structure of metals</li> </ul>	28-31,35	14-37	<a href="https://www.bbc.co.uk/bitesize/guides/zzydng8/revision/1">https://www.bbc.co.uk/bitesize/guides/zzydng8/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/zcpjfcw/revision/1">https://www.bbc.co.uk/bitesize/guides/zcpjfcw/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/z8db7p3/revision/1">https://www.bbc.co.uk/bitesize/guides/z8db7p3/revision/1</a>	<a href="https://www.youtube.com/watch?v=6DtrrWA5nkE">https://www.youtube.com/watch?v=6DtrrWA5nkE</a>  <a href="https://www.youtube.com/watch?v=lenvZEcMc60">https://www.youtube.com/watch?v=lenvZEcMc60</a>  <a href="https://www.youtube.com/watch?v=lhEm7aAKIDg">https://www.youtube.com/watch?v=lhEm7aAKIDg</a>  <a href="https://www.youtube.com/watch?v=5I_1jRGSR9E">https://www.youtube.com/watch?v=5I_1jRGSR9E</a>  <a href="https://www.youtube.com/watch?v=b1y2Q6YX1bQ">https://www.youtube.com/watch?v=b1y2Q6YX1bQ</a>  <a href="https://www.youtube.com/watch?v=A-wTpLPICd0&amp;t=13s">https://www.youtube.com/watch?v=A-wTpLPICd0&amp;t=13s</a>

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<b>4.2.2</b> How bonding and structure are related to the properties of a substance	<ul style="list-style-type: none"> <li>-interpreting melting and boiling point data to determine state at a certain temp</li> <li>-link energy needed to change state to strength of forces between particles</li> <li>-state symbols</li> <li>-describe &amp; explain properties of ionic compounds</li> <li>-describe &amp; explain properties of simple covalent molecules</li> <li>-describe &amp; explain properties of polymers</li> <li>-describe &amp; explain properties of metals and alloys</li> </ul>	28-32, 35-37	14-37	<a href="https://www.bbc.co.uk/bitesize/guides/zyydnng8/revision/1">https://www.bbc.co.uk/bitesize/guides/zyydnng8/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/zcpjfcw/revision/1">https://www.bbc.co.uk/bitesize/guides/zcpjfcw/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/z9twsrd/revision/1">https://www.bbc.co.uk/bitesize/guides/z9twsrd/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/z8db7p3/revision/1">https://www.bbc.co.uk/bitesize/guides/z8db7p3/revision/1</a>	<a href="https://www.youtube.com/watch?v=leVxy7cjZMU">https://www.youtube.com/watch?v=leVxy7cjZMU</a>  <a href="https://www.youtube.com/watch?v=DECGNyC-X_S">https://www.youtube.com/watch?v=DECGNyC-X_S</a>  <a href="https://www.youtube.com/watch?v=EP0zfm_FVgC">https://www.youtube.com/watch?v=EP0zfm_FVgC</a>  <a href="https://www.youtube.com/watch?v=A-wTpLPICd0">https://www.youtube.com/watch?v=A-wTpLPICd0</a>
<b>4.2.3</b> Structure and bonding of carbon	-describe and explain the properties of diamond, graphite, graphene and fullerenes	33-34	14-25	<a href="https://www.bbc.co.uk/bitesize/guides/z9twsrd/revision/1">https://www.bbc.co.uk/bitesize/guides/z9twsrd/revision/1</a>	<a href="https://www.youtube.com/watch?v=tGH0mXCcE_FU">https://www.youtube.com/watch?v=tGH0mXCcE_FU</a>

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4.3.2 Use of amount of substance in relation to masses of pure substances	<ul style="list-style-type: none"> <li>-calculating relative formula mass</li> <li>-calculating the number of moles in a given mass of a substance, calculating the mass of a certain no. of moles of a substance</li> <li>-Avogadro's constant – the number of particles in 1 mole of every substance</li> <li>-calculate the masses of reactants and products from the balanced symbol equation and the mass of a given reactant or product.</li> <li>-using molar ratios to balance equations</li> <li>-identifying limiting reactants and explaining the effect on yield of products</li> <li>-define concentration of a solution</li> <li>-calculate the concentration of a solution, or the mass of a solute dissolved in a given volume to create a solution of given concentration</li> </ul>	41-47	58-69	<p><a href="https://www.bbc.co.uk/bitesize/guides/zgcyw6f/revision/1">https://www.bbc.co.uk/bitesize/guides/zgcyw6f/revision/1</a></p> <p><a href="https://www.bbc.co.uk/bitesize/guides/z3kg2nb/revision/1">https://www.bbc.co.uk/bitesize/guides/z3kg2nb/revision/1</a></p>	<p><a href="https://www.youtube.com/watch?v=q49NwlrjaFw">https://www.youtube.com/watch?v=q49NwlrjaFw</a></p> <p><a href="https://www.youtube.com/watch?v=wPGVQu3UXpw">https://www.youtube.com/watch?v=wPGVQu3UXpw</a></p> <p><a href="https://www.youtube.com/watch?v=TV6n5MFH6IU">https://www.youtube.com/watch?v=TV6n5MFH6IU</a></p> <p><a href="https://www.youtube.com/watch?v=YKvUQ2cPmJg">https://www.youtube.com/watch?v=YKvUQ2cPmJg</a></p> <p><a href="https://www.youtube.com/watch?v=MuzOmFhiE8o">https://www.youtube.com/watch?v=MuzOmFhiE8o</a></p> <p><a href="https://www.youtube.com/watch?v=3G3KQlyoZDI">https://www.youtube.com/watch?v=3G3KQlyoZDI</a></p>

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<b>4.4.1</b> The Reactivity of Metals	<ul style="list-style-type: none"> <li>-Metals + oxygen</li> <li>-Reduction and oxidation in terms of oxygen</li> <li>-reduction and oxidation in terms of electrons</li> <li>-identify in a given reaction, symbol equation or half equation which species are oxidised and which are reduced</li> <li>-The Reactivity Series</li> <li>- Displacement reactions</li> <li>- Extraction of metals by reduction</li> </ul>	55-57	78-87	<a href="https://www.bbc.co.uk/bitesize/guides/zsm7v9q/revision/1">https://www.bbc.co.uk/bitesize/guides/zsm7v9q/revision/1</a>	<a href="https://www.youtube.com/watch?v=Lk1V0buHEFs">https://www.youtube.com/watch?v=Lk1V0buHEFs</a>  <a href="https://www.youtube.com/watch?v=gnbuTl2aril">https://www.youtube.com/watch?v=gnbuTl2aril</a>  <a href="https://www.youtube.com/watch?v=2i5Lm7BMtpo">https://www.youtube.com/watch?v=2i5Lm7BMtpo</a>  <a href="https://www.youtube.com/watch?v=MXTSels6e2Y">https://www.youtube.com/watch?v=MXTSels6e2Y</a>
<b>4.4.2</b> Reactions of Acids	<ul style="list-style-type: none"> <li>-Naming Salts</li> <li>-products of the reactions of acids and metals</li> <li>-explain the reactions of metals and acids in terms of loss and gain of electrons</li> <li>-products of the reactions of acids and alkalis and insoluble bases</li> <li>-products of the reactions of acids and metal carbonates</li> <li>-pH scale and neutralisation</li> <li>-difference between strong and weak acids</li> </ul>	51,53-54	88-97	<a href="https://www.bbc.co.uk/bitesize/guides/zcjfcw/revision/1">https://www.bbc.co.uk/bitesize/guides/zcjfcw/revision/1</a>	<a href="https://www.youtube.com/watch?v=ofw6oHSYGFI">https://www.youtube.com/watch?v=ofw6oHSYGFI</a>  <a href="#">GCSE Science Revision Chemistry "Acids Reacting with Metals 2" - YouTube</a>  <a href="https://www.youtube.com/watch?v=QISsle_jSQ8">https://www.youtube.com/watch?v=QISsle_jSQ8</a>
<b>4.4.2.3</b> and <b>Required Practical 1:</b> preparation of a pure, dry sample of soluble salts	<ul style="list-style-type: none"> <li>-method of producing solid salt crystals from insoluble oxide or carbonate and acids</li> <li>-identifying errors in methods and reagents</li> </ul>	Bottom half pg 54	88-97	<a href="https://www.bbc.co.uk/bitesize/guides/zcjfcw/revision/6">https://www.bbc.co.uk/bitesize/guides/zcjfcw/revision/6</a>	<a href="https://www.youtube.com/watch?v=9GH95172Js8&amp;t=16s">https://www.youtube.com/watch?v=9GH95172Js8&amp;t=16s</a> <a href="#">GCSE Science Revision Chemistry "Strong and Weak Acids" - YouTube</a>

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<b>4.4.2.5 and Required practical 2:</b> determination of the reacting volumes of solutions of a strong acid and a strong alkali by titration.	<ul style="list-style-type: none"> <li>-Method</li> <li>-control variables and how to monitor them</li> <li>-quantitative analysis of results</li> </ul>	52	68-77	<a href="https://www.bbc.co.uk/bitesize/guides/zx98pbk/revision/1">https://www.bbc.co.uk/bitesize/guides/zx98pbk/revision/1</a>	<a href="https://www.youtube.com/watch?v=saRBT5oZfh8">https://www.youtube.com/watch?v=saRBT5oZfh8</a>  <a href="https://www.youtube.com/watch?v=vn3Rx3g1VPk">https://www.youtube.com/watch?v=vn3Rx3g1VPk</a>  <a href="https://www.youtube.com/watch?v=x8DLLCNMKAs">https://www.youtube.com/watch?v=x8DLLCNMKAs</a>  <a href="https://www.youtube.com/watch?v=ycC4oKteRJJU">https://www.youtube.com/watch?v=ycC4oKteRJJU</a>
<b>4.4.3</b> Electrolysis	<ul style="list-style-type: none"> <li>-The process of electrolysis</li> <li>-identifying oxidation and reduction in terms of electrons</li> <li>-writing half equations for oxidation/reduction reactions occurring at each electrode</li> <li>-Electrolysis of molten ionic compounds</li> <li>-Electrolysis of aluminium oxide</li> <li>-Electrolysis of aqueous solutions, predicting products formed</li> </ul>	58-59	98-109	<a href="https://www.bbc.co.uk/bitesize/guides/zcsyw6f/revision/1">https://www.bbc.co.uk/bitesize/guides/zcsyw6f/revision/1</a>	<a href="https://www.youtube.com/watch?v=AhTRiL6xjBA&amp;t=2s">https://www.youtube.com/watch?v=AhTRiL6xjBA&amp;t=2s</a>  <a href="https://www.youtube.com/watch?v=iINOpROacf0">https://www.youtube.com/watch?v=iINOpROacf0</a>  <a href="https://www.youtube.com/watch?v=YcyMEIBEzAY">https://www.youtube.com/watch?v=YcyMEIBEzAY</a>  <a href="https://www.youtube.com/watch?v=6WjC_Vi4roA">https://www.youtube.com/watch?v=6WjC_Vi4roA</a>  <a href="https://www.youtube.com/watch?v=W9ngXNxSyoo">https://www.youtube.com/watch?v=W9ngXNxSyoo</a>

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Spec point	Concepts	CGP revision guide pages	Oxford Revise guide pages	Bitesize	YouTube
<b>4.5.1</b> Exothermic and endothermic reactions	<ul style="list-style-type: none"> <li>-describe the law of the conservation of energy</li> <li>-define exo and endothermic reactions and describe their features</li> <li>-give examples of exo and endothermic reactions</li> <li>-define activation energy</li> <li>-represent exo and endothermic reactions with reaction profiles</li> <li>-describe bond breaking in the reactants as an endothermic process</li> <li>-describe bond formation in the products as an exothermic process</li> <li>-calculate the energy transferred in chemical reactions using bond energies supplied</li> <li>-Use energy change values to identify if a reaction is exo/endothermic</li> </ul>	61-63	110-119	<a href="https://www.bbc.co.uk/bitesize/guides/zwfr2nb/revision/1">https://www.bbc.co.uk/bitesize/guides/zwfr2nb/revision/1</a>	<a href="https://www.youtube.com/watch?v=4HS6D0hTzdg">https://www.youtube.com/watch?v=4HS6D0hTzdg</a>  <a href="https://www.youtube.com/watch?v=dstRL5xBOSk">https://www.youtube.com/watch?v=dstRL5xBOSk</a>  <a href="https://www.youtube.com/watch?v=itOHGXhxD-s">https://www.youtube.com/watch?v=itOHGXhxD-s</a>  <a href="https://www.youtube.com/watch?v=eExCBkp4jB4">https://www.youtube.com/watch?v=eExCBkp4jB4</a>  <a href="https://www.youtube.com/watch?v=PdVaIXAVUOc">https://www.youtube.com/watch?v=PdVaIXAVUOc</a>
<b>Required Practical 4:</b> investigate the variables that affect temperature changes in reacting solutions such as, eg acid plus metals, carbonates, neutralisations, displacement of metals	<ul style="list-style-type: none"> <li>-Identifying independent, dependent, control variables</li> <li>-Analysing results</li> <li>-identifying exo and endothermic reactions from experimental results</li> </ul>	62	110-119	<a href="https://www.bbc.co.uk/bitesize/guides/zwfr2nb/revision/2">https://www.bbc.co.uk/bitesize/guides/zwfr2nb/revision/2</a>	<a href="https://www.youtube.com/watch?v=Bz0C9mF2tw">https://www.youtube.com/watch?v=Bz0C9mF2tw</a>

# Chemistry Paper 1 - H

Exam date: 20<sup>th</sup> June

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Spec point	CGP Revision Guide Pages
<b>4.2.4</b> Bulk and surface properties of matter including nanoparticles	38-39

# Chemistry Paper 2 - H

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Spec point	Concepts	CGP revision guide pages	Oxford Revise guide pages	Bitesize	YouTube
<b>4.6.1</b> Rate of Reaction	<ul style="list-style-type: none"> <li>-Calculating the rate of a reaction</li> <li>-Calculate the gradient of a tangent to the curve on these graphs as a measure of rate of reaction at a specific time.</li> <li>-Describe collision theory</li> <li>-Define activation energy</li> <li>-Describe and explain the factors that increase the rate of reaction</li> <li>-Describe and explain the effect of catalysts on rate of reaction</li> </ul>	67-71	120-131	<a href="https://www.bbc.co.uk/bitesize/guides/z3nbqhv/revision/1">https://www.bbc.co.uk/bitesize/guides/z3nbqhv/revision/1</a>	<a href="https://www.youtube.com/watch?v=UkrBJ6-uGFA">https://www.youtube.com/watch?v=UkrBJ6-uGFA</a>  <a href="https://www.youtube.com/watch?v=GCR5xeduq2o">https://www.youtube.com/watch?v=GCR5xeduq2o</a>  <a href="https://www.youtube.com/watch?v=-4HXaUBbv04">https://www.youtube.com/watch?v=-4HXaUBbv04</a>  <a href="https://www.youtube.com/watch?v=hel8fQjxcO8">https://www.youtube.com/watch?v=hel8fQjxcO8</a>
<b>Required Practical 5:</b> investigate how concentration affects the rates of reaction by a method involving measuring the volume of a gas produced/change in colour	<ul style="list-style-type: none"> <li>-identify independent, dependent and control variables</li> <li>-describe how to measure the dependent variable</li> <li>-analyse results and draw conclusions from graphed data</li> <li>-calculate rate of reaction from data</li> </ul>	70	120-131	<a href="#">Required practical - measure the production of a gas - Rates of reaction - AQA - GCSE Chemistry (Single Science) Revision - AQA - BBC Bitesize</a>	<a href="https://www.youtube.com/watch?v=N5p06i9ilm0">https://www.youtube.com/watch?v=N5p06i9ilm0</a>  <a href="https://www.youtube.com/watch?v=GI6LVI7oAIU">https://www.youtube.com/watch?v=GI6LVI7oAIU</a>

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4.6.2 Reversible reactions and dynamic equilibrium	<ul style="list-style-type: none"> <li>-Identify and give examples of reversible reactions</li> <li>-Apply the conservation of energy to reversible reactions</li> <li>-Define dynamic equilibrium</li> <li>-Describe Le Chatelier's principle</li> <li>-Describe and explain the effect of changing the following conditions on equilibrium; concentration, temperature, pressure</li> </ul>	72-73	132-141	<a href="https://www.bbc.co.uk/bitesize/guides/zyhvw6f/revision/1">https://www.bbc.co.uk/bitesize/guides/zyhvw6f/revision/1</a>	<a href="https://www.youtube.com/watch?v=66qcNNJFy6E">https://www.youtube.com/watch?v=66qcNNJFy6E</a>  <a href="#">GCSE Science Revision Chemistry "Concentration and Reversible Reactions" – YouTube</a>  <a href="#">GCSE Science Revision Chemistry "Pressure and Reversible Reactions" – YouTube</a>  <a href="#">GCSE Science Revision Chemistry "Temperature and reversible reactions" – YouTube</a>  <a href="#">GCSE Chemistry - Le Chatelier's Principle #42 (Higher Tier) – YouTube</a>

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Spec point	Concepts	CGP revision guide pages	Oxford Revise guide pages	Bitesize	YouTube
<b>4.7.1</b> Carbon compounds as fuels and feedstock	<ul style="list-style-type: none"> <li>-describe crude oil as a mixture of different length hydrocarbons</li> <li>-define the term hydrocarbon</li> <li>-identify the first 4 alkanes from their chemical formula and name them</li> <li>-Describe the trend in properties as hydrocarbon chain length increases</li> <li>-Describe and explain the process of fractional distillation</li> <li>-describe the process of cracking</li> <li>-describe the use of alkenes</li> </ul>	75-78	142-151 162-171	<a href="https://www.bbc.co.uk/bitesize/guides/zshvw6f/revision/1">https://www.bbc.co.uk/bitesize/guides/zshvw6f/revision/1</a>	<a href="https://www.youtube.com/watch?v=CX2IYWggEBc">https://www.youtube.com/watch?v=CX2IYWggEBc</a>  <a href="https://www.youtube.com/watch?v=3I7yCkSXPos">https://www.youtube.com/watch?v=3I7yCkSXPos</a>  <a href="https://www.youtube.com/watch?v=7AWwjKbRa_o">https://www.youtube.com/watch?v=7AWwjKbRa_o</a>
<b>Required practical 7:</b> use of chemical tests to identify the ions in unknown single ionic compounds covering the ions from sections Flame tests through to Sulfates.	<ul style="list-style-type: none"> <li>-Describe reagents and positive results for each ion</li> <li>-Describe method of flame tests</li> </ul>	88-89	172-183	<a href="https://www.bbc.co.uk/bitesize/guides/zxtvw6f/revision/1">https://www.bbc.co.uk/bitesize/guides/zxtvw6f/revision/1</a>	<a href="https://www.youtube.com/watch?v=Bd0A44lv2OI&amp;t=96s">https://www.youtube.com/watch?v=Bd0A44lv2OI&amp;t=96s</a>  <a href="https://www.youtube.com/watch?v=4iZR4XIJOE">https://www.youtube.com/watch?v=4iZR4XIJOE</a>  <a href="https://www.youtube.com/watch?v=mWTgHjdea4Y">https://www.youtube.com/watch?v=mWTgHjdea4Y</a>  <a href="https://www.youtube.com/watch?v=fCZztwJmAl0">https://www.youtube.com/watch?v=fCZztwJmAl0</a>

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# Chemistry Paper 2 - H

These specification points will be the **major focus** of this paper.

**Exam date: 20<sup>th</sup> June**

All other specification points from C2, other than those on the [next slide](#) that are explicitly omitted, **may still be assessed** in multiple choice questions/linked to a previous answer, so cannot be completely ignored in your revision

Spec point	Concepts	CGP revision guide pages	Oxford Revise guide pages	Bitesize	YouTube
<b>4.9.1</b> The composition and evolution of the Earth's Atmosphere	<ul style="list-style-type: none"> <li>-describe the composition of the current atmosphere</li> <li>-describe the composition of the early atmosphere and explain theories of how the early atmosphere formed</li> <li>-explain how the early atmosphere changed to that of the present atmosphere</li> </ul>	91	184-193	<a href="https://www.bbc.co.uk/bitesize/guides/zg4qfcw/revision/1">https://www.bbc.co.uk/bitesize/guides/zg4qfcw/revision/1</a>	<a href="https://www.youtube.com/watch?v=t1Z3GINldLA">https://www.youtube.com/watch?v=t1Z3GINldLA</a>  <a href="https://www.youtube.com/watch?v=I0h_-3MOPso">https://www.youtube.com/watch?v=I0h_-3MOPso</a>
<b>4.10.1</b> Using the Earth's resources and obtaining potable water	<ul style="list-style-type: none"> <li>-Describe the renewable and non-renewable resources that we get from the Earth and its atmosphere</li> <li>-Define the term potable water</li> <li>-Describe how potable water can be produced.</li> <li>-Describe the differences in the treatment of waste water, salt water and ground water</li> <li>-Describe and evaluate alternative methods of extracting metals e.g. phytomining and bioleaching</li> </ul>		194-297	<a href="https://www.bbc.co.uk/bitesize/guides/zgqhcj6/revision/1">https://www.bbc.co.uk/bitesize/guides/zgqhcj6/revision/1</a>  <a href="https://www.bbc.co.uk/bitesize/guides/zpcjsrd/revision/1">https://www.bbc.co.uk/bitesize/guides/zpcjsrd/revision/1</a>  <a href="#">Biological methods of metal extraction - Higher - Ways of reducing the use of resources - AQA - GCSE Chemistry (Single Science) Revision - AQA - BBC Bitesize</a>	<a href="https://www.youtube.com/watch?v=-XczTGavTZU">https://www.youtube.com/watch?v=-XczTGavTZU</a>  <a href="https://www.youtube.com/watch?v=n7pYRQs20bl">https://www.youtube.com/watch?v=n7pYRQs20bl</a>  <a href="https://www.youtube.com/watch?v=b5RVPauf4oM">https://www.youtube.com/watch?v=b5RVPauf4oM</a>

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Spec point	Concepts	CGP revision guide pages	Oxford Revise guide pages	Bitesize	YouTube
4.10.4 The Haber process and the use of NPK fertilisers	<ul style="list-style-type: none"> <li>-Describe the purpose of the Haber process, the reaction and raw materials involved</li> <li>-interpret graphs of reaction conditions versus rate</li> <li>-apply the principles of dynamic equilibrium in Reversible reactions and dynamic equilibrium (4.6.2) to the Haber process</li> <li>-explain the trade-off between rate of production and position of equilibrium</li> <li>-explain how the commercially used conditions for the Haber process are related to the availability and cost of raw materials and energy supplies, control of equilibrium position and rate</li> <li>-Describe NPK fertilisers as formulations of various salts containing appropriate percentages of the elements.</li> <li>-Describe the composition of NPK fertilisers and how they are made</li> <li>-recall the names of the salts produced when phosphate rock is treated with nitric acid, sulfuric acid and phosphoric acid</li> </ul>	104-105	210-211  Questions on 216 onwards  Q3, Q4, Q9, Q10, Q11.	<a href="https://www.bbc.co.uk/bitesize/guides/z9tw6f/revision/1">https://www.bbc.co.uk/bitesize/guides/z9tw6f/revision/1</a>	<a href="https://www.youtube.com/watch?v=1_HoWz5Kxfk">https://www.youtube.com/watch?v=1_HoWz5Kxfk</a>  <a href="https://www.youtube.com/watch?v=HAkaD6-7fgQ">https://www.youtube.com/watch?v=HAkaD6-7fgQ</a>  <a href="https://www.youtube.com/watch?v=rKzt9BvvEeQ">https://www.youtube.com/watch?v=rKzt9BvvEeQ</a>

# Chemistry Paper 2 - H

Exam date: 20<sup>th</sup> June

These specification points will **not be assessed** on this paper.

Spec point	CGP Revision Guide Pages
<b>4.9.2</b> Carbon dioxide and methane as greenhouse gases	92-94