Core Gateway Science B

**GCSE**

*“We are what we repeatedly do. Excellence, therefore, is not an act but a habit”*



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Use the activities and past exam questions in this booklet to plan and support your revision ready for the B2C2P2 science exam.

REVISION WEBSITE – The follow website is available for you to use to support you revision and help you answer the exam questions in this revision guide

<http://www.bbc.co.uk/schools/gcsebitesize/science/ocr_gateway/>



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| **C2a The Structure of the Earth** |
| Grade E 🡪 Grade C 🡪 Grade A |
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| *Key Information* |
| **The Earth is made of a layered structure, a thin crust, the mantle and an iron core. The two types of tectonic plates are oceanic and continental** |
| *Revision Ideas*  |
| 1. Draw a picture labelling the structure of the Earth – Include detailed descriptions
 |
| 1. Find a YouTube clip showing how volcanoes and earthquakes happen
 |
| QWC Question (6 marks) |
| When answering a QWC question remember the following points: Use correct science vocabulary, organise ideas, avoid using “it”, and write in full sentences. You also need to try and keep you answer relevant to the question. A good way to do all this is to write out important key vocabulary and then use them to structure your answer. Underlining them will help you keep track and highlight to the examiner your good use of key terms, |
| ***Question – This question is about the structure of the Earth***The Earth is made of a layered structure. Describe the structure of the Earth and use ideas about plate tectonics to explain how the movements cause earthquakes and volcanoes ***(6marks)*** |
| ***Important words list***CrustMantleCoreLithosphereDensityOceanic PlateContinental PlateTectonic PlatesEarthquakeVolcanoes |  |
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| **C2b Construction Materials** |
| Grade E 🡪 Grade C 🡪 Grade A |
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| *Key Information* |
| **When calcium carbonate is heated it breaks down into calcium oxide and carbon dioxide.****Glass, concrete and cement are all made from sand.** |
| *Revision Ideas / Task* |
| 1. Print pictures of the different building materials. Use post it notes to label what each one is made from
 |
| 1. Draw a cartoon showing the impact of mines and quarries on the environment
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| QWC Question (6 marks) |
| When answering a QWC question remember the following points: Use correct science vocabulary, organise ideas, avoid using “it”, and write in full sentences. You also need to try and keep you answer relevant to the question. A good way to do all this is to write out important key vocabulary and then use them to structure your answer. Underlining them will help you keep track and highlight to the examiner your good use of key terms, |
| ***Question – This question is about construction materials***Many construction materials come from rocks. Describe how 3 different construction materials are made and explain the impact extraction of the raw materials has on the environment ***(6 marks)*** |
| ***Important words list***OresConcreteIron / AluminiumCementSandAggregatesLimestoneReduceImpactEnvironment |  |
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| **C2c Metals and Alloys** |
| Grade E 🡪 Grade C 🡪 Grade A |
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| *Key Information* |
| **Electrolysis uses an electric current to purify copper. Alloys are mixtures of a metal and another element that improves the metals properties to make it more useful** |
| *Revision Ideas / Task* |
| 1. Make revision cards with the following key words. Put their definitions on the back and get family members to test you. (Key words: Reduction, Electrolysis, Electrode, Anode, Cathode, Impurities, Electrolyte, Alloy)
 |
| 1. Make a card game to help you remember the elements that make up different alloys
 |
| QWC Question (6 marks) |
| When answering a QWC question remember the following points: Use correct science vocabulary, organise ideas, avoid using “it”, and write in full sentences. You also need to try and keep you answer relevant to the question. A good way to do all this is to write out important key vocabulary and then use them to structure your answer. Underlining them will help you keep track and highlight to the examiner your good use of key terms, |
| ***Question – This question is about the metals and alloy***Explain how copper is extracted form copper ore and then purified using electrolysis ***(6marks)*** |
| ***Important words list***HeatingCarbonReductionImpureElectrolysisElectric CurrentElectrolyteElectrodeImpuritiesCathodeAnode |  |
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| **C2d Making Cars** |
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| *Key Information* |
| **Rusting is an example of an oxidation reaction. Rusting needs iron, water and oxygen.****Iron + Oxygen + Water 🡪 iron oxide** |
| *Revision Ideas / Task* |
| 1. Take a picture of a car and label the different materials used to make it and state why they are good for that purpose.
 |
| 1. Make a notes page on the reasons we recycle. Use a highlighter to colour all the key points
 |
| QWC Question (6 marks) |
| When answering a QWC question remember the following points: Use correct science vocabulary, organise ideas, avoid using “it”, and write in full sentences. You also need to try and keep you answer relevant to the question. A good way to do all this is to write out important key vocabulary and then use them to structure your answer. Underlining them will help you keep track and highlight to the examiner your good use of key terms, |
| ***Question – This question is about the materials used to make cars and recycling***Many different materials are used to make cars, Describe why aluminium and steel are chosen to make car bodies and explain how steel corrodes and aluminium doesn’t. ***(6marks)*** |
| ***Important words list***DensityMalleableCorrodesRustingOxidationAluminium oxideProtective LayerOxygenWaterIron |  |
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| **C2e Manufacturing Chemicals** |
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| *Key Information* |
| **Ammonia is a gas made by the Haber process. It is used to make nitric acid and fertilisers.****The reaction is reversible** |
| *Revision Ideas / Task* |
| 1. Record yourself talking about the Haber Process and the factors that affect the cost .Add it to your MP3 playlist
 |
| 1. Draw out the formula with the reversible sign and add the optimum conditions needed
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| QWC Question (6 marks) |
| When answering a QWC question remember the following points: Use correct science vocabulary, organise ideas, avoid using “it”, and write in full sentences. You also need to try and keep you answer relevant to the question. A good way to do all this is to write out important key vocabulary and then use them to structure your answer. Underlining them will help you keep track and highlight to the examiner your good use of key terms, |
| ***Question – This question is about the Haber Process***Ammonia is an important gas used to make fertilisers. It is made on a large scale in the Haber Process. Describe the Haber Process and the factors that affect the cost of making ammonia. ***(6marks)*** |
| ***Important words list***High pressureCatalystNitrogenHydrogenOptimum ConditionsUnreacted GasesCostsTemperatureWorkforceEquipment |  |
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| **C2f Acids and Bases** |
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| *Key Information* |
| **A soluble base is called an alkali. When you neutralise an acid with a base the reaction produces a salt + water.** |
| *Revision Ideas / Task* |
| 1. Practice naming the salts made when reacting different acids and bases. Use your what salt cards to help
 |
| 1. Draw out and colour the pH scale
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| QWC Question (6 marks) |
| When answering a QWC question remember the following points: Use correct science vocabulary, organise ideas, avoid using “it”, and write in full sentences. You also need to try and keep you answer relevant to the question. A good way to do all this is to write out important key vocabulary and then use them to structure your answer. Underlining them will help you keep track and highlight to the examiner your good use of key terms, |
| ***Question – This question is about the neutralisation reactions***When an acid and a base are added to each other in the correct amounts they can cancel each other out. This is called a neutralisation reaction. Write about neutralisation reactions; include in your answer ideas about ions. ***(6marks)*** |
| ***Important words list***NeutralAcidAlkalipHSaltWaterHydroxide IonsHydrogen IonsSolution |  |
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| **C2g Fertilisers and Crop Yield** |
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| *Key Information* |
| **Fertilisers make crops grow faster and quicker and increase crop yield. Eutrophication is a problem with using fertilisers****The three main elements found in fertilisers are Nitrogen Phosphorus and Potassium** |
| *Revision Ideas / Task* |
| 1. Draw out and label the equipment needed to make a fertiliser by neutralisation
 |
| 1. Come up with a Pneumonic to remind you of the 3 essential elements found in fertilisers. NPK
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| QWC Question (6 marks) |
| When answering a QWC question remember the following points: Use correct science vocabulary, organise ideas, avoid using “it”, and write in full sentences. You also need to try and keep you answer relevant to the question. A good way to do all this is to write out important key vocabulary and then use them to structure your answer. Underlining them will help you keep track and highlight to the examiner your good use of key terms, |
| ***Question – This question is about Fertilisers***Farmers use fertilisers on their crops. Describe what a fertiliser must be and explain the advantages and disadvantages of using them on farmland. ***(6marks)*** |
| ***Important words list***NitrogenPhosphorusPotassiumSolubleYieldFaster / BiggerEutrophicationAlgae BloomRootsDeath of Animals |  |
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| **C2h Chemicals from the Sea** |
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| *Key Information* |
| Sodium chloride can be removed from the sea or mined from salt deposits. When sodium chloride solution is electrolysed it makes sodium hydroxide, hydrogen and chlorine. |
| *Revision Ideas / Task* |
| 1. Draw and label the process of sodium chloride electrolysis.
 |
| 1. Make a card sort on the products of electrolysis of sodium chloride and their uses.
 |
| QWC Question (6 marks) |
| When answering a QWC question remember the following points: Use correct science vocabulary, organise ideas, avoid using “it”, and write in full sentences. You also need to try and keep you answer relevant to the question. A good way to do all this is to write out important key vocabulary and then use them to structure your answer. Underlining them will help you keep track and highlight to the examiner your good use of key terms, |
| ***Question – This question is about the electrolysis of sodium chloride***Sodium chloride is an important raw material in the chemical industry. Explain how sodium chloride can be separated into useful products using electrolysis and describe the uses of these products. ***(6marks)*** |
| ***Important words list***SolutionAnodeCathodeChlorineSteriliseSodium HydroxideHydrogenBleachMargarineLitmus Paper |  |
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