**GCSE**

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



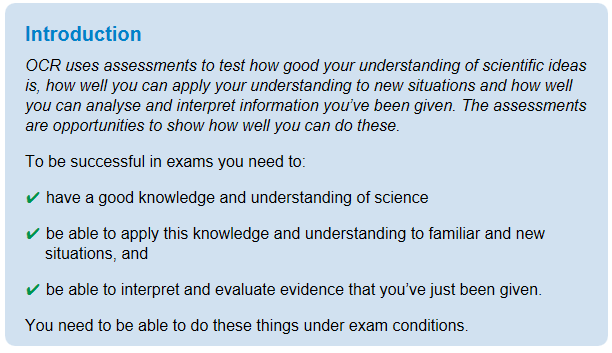
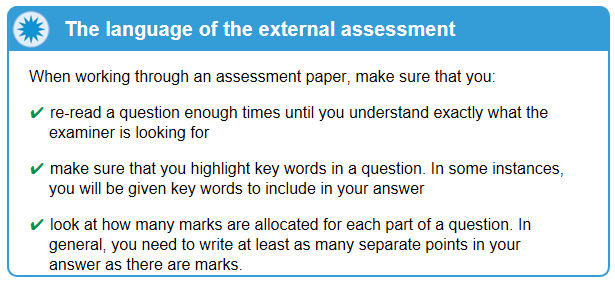
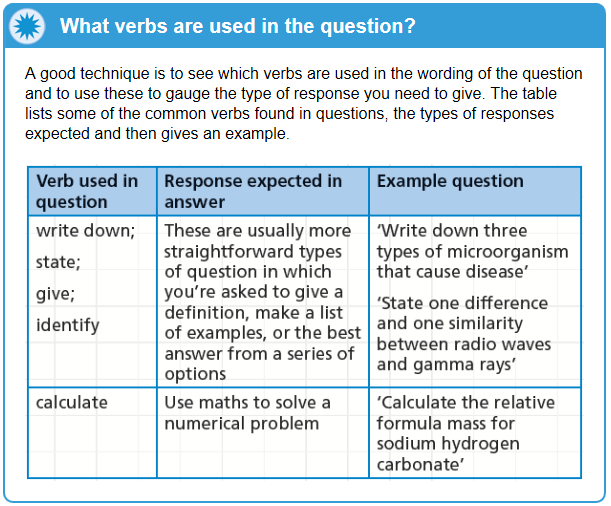
Core Gateway Science B

B1: Understanding Organisms

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Use the activities and past exam questions in this booklet to plan and support your revision ready for the B1C1P1 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



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| **B1a: Fitness and Health** |
| Grade E 🡪 Grade C 🡪 Grade A |
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| *Key Information* |
| **Fitness** is the ability to do **physical** activity. **Healthy** is being **free from disease.**  When measuring **blood pressure** you get **two** measurements. The maximum pressure (when the heart beats) called the **systolic** pressure, and the lowest pressure (in between heart beats) called the **diastolic** pressure. |
| *Revision Ideas* |
| 1. Make some revision cards with key term definitions for the following words – Systolic, Diastolic, Arteries, Fitness, Health, Stamina, Agility, Cholesterol |
| 1. Design a set of tests to measure someone’s fitness. Think about all the ways we can measure fitness. |
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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 heart disease***  Daniels family want to keep fit and healthy. They know that heart disease is the main cause of death in the UK. **Explain** what factors can lead to a higher risk of heart disease and **describe** what can be done to reduce the risks (***6marks)*** | |
| ***Important words list***  Smoking  Blood pressure  Salt  Diet  Saturated Fats  Blood flow  Cholesterol  Plaque  Heart Attack |  |
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| **B1b: Human Health and Diet** | | |
| Grade E 🡪 Grade C 🡪 Grade A | | |
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| *Key Information* | | |
| Food provides the **energy** and materials needed by living things. **Carbohydrates** and **fats** are high- energy sources. **Protein** is needed for growth and repair. Protein deficiency leads to diseases such as **kwashiorkor**. | | |
| *Revision Ideas* | | |
| 1. Create an information leaflet on eating a balanced healthy diet. What should people eat and why. Is it the same for everyone? Include information for people who might eat specialised diets. | | |
| 1. Create a card sort for the simple chemicals carbohydrates, proteins and fats are made up of. | | |
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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 human health and diet***  Famines occur in countries that are overpopulated and where crops have failed. **Describe** the importance of protein in a person’s diet and **explain** what could happen if there is a lack of protein. (***6marks)*** | | |
| ***Important words list***  Energy Supply  Starvation  Growth and repair  Kwashiorkor  Swollen bellies  Famines  Water  EAR |  | |
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| **B1c: Staying Healthy** | | |
| Grade E 🡪 Grade C 🡪 Grade A | | |
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| *Key Information* | | |
| **Pathogens** are microorganisms that cause **disease**. The body has several defence mechanisms to prevent pathogens from entering the body and reproducing there.  The **immune system** can destroy pathogens that manage to enter the body. New medical treatments and drugs must be **tested** before their use. | | |
| *Revision Ideas* | | |
| 1. Create revision cards on the different types of pathogens. | | |
| 1. Research how malaria is spread. Produce a flow diagram to show the spread of malaria. | | |
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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 fighting disease.***  Ben feels hot. His mum takes his temperature and it is high. His body is fighting an infection. **Explain** how the body fights against bacteria and **describe** how his body develops an active immunity against this disease***. (6marks)*** | | |
| ***Important words list***  White blood cells  Engulf  Antibodies  Pathogen  Immune system  Bacteria  Active Immunity  Antigens  Recognise | |  |
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| **B1d: The Nervous System** | | |
| Grade E 🡪 Grade C 🡪 Grade A | | |
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| *Key Information* | | |
| The sense organs contain **receptors** that are **sensitive** to **stimuli**.  The nervous system consists of the **central nervous system** - **brain and spinal cord -and peripheral nerves**. **Nerve impulses** travel through the **axons of neurones** - nerve cells. **Reflex actions** are **fast**, **automatic** and protective responses.  Human vision is **binocular**, which gives us a good perception of depth. Vision defects include **short-sightedness**, **long-sightedness** and **colour blindness**. | | |
| *Revision Ideas* | | |
| 1. Draw and label a diagram of the eye, describing the function of each part | | |
| 1. Draw and label a diagram of a reflex arc. Mount it on card and make it into a jigsaw by cutting it into different shapes. Practice putting it back together. | | |
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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 reflexes.***  David puts his hand on a extremely hot plate. He immediately pulls his hand away. This is a **reflex action**. **Describe** the important features of a reflex action, and **explain** the stages involved in the reflex action. (***6marks)*** | | |
| ***Important words list***  Stimulus  Receptor  Sensory Neurone  Relay Neurone  Motor Neurone  Effector  Response  Fast  Without thinking |  | |
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| **B1e: Drugs and You** | |
| Grade E 🡪 Grade C 🡪 Grade A | |
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| *Key Information* | |
| Drugs are **chemicals** that can alter the way the body works. There are different types of drugs, and they have different effects on the body.  **Tobacco and alcohol** are legal recreational drugs which have potentially serious effects on the body. Illegal drugs are classified on a scale from Class A - the most dangerous - to Class C - the least dangerous. | |
| *Revision Ideas* | |
| 1. Make a key words definition table for the different types of drugs and their effects | |
| 1. Write a problem page column on the effects of drinking and smoking on the body. | |
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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 effects of smoking on the body.***  In 2007 smoking was banned in all work and public places. **Describe** the main chemicals in cigarettes, and **explain** how they can lead to poor health and even death***.*** (***6marks)*** | |
| ***Important words list***  Carbon Monoxide  Nicotine  Tar  Particulates  Heart Disease  Emphysema  Bronchitis  Cancer  Smokers Cough  Lungs |  |
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| **B1f: Staying in Balance** | |
| Grade E 🡪 Grade C 🡪 Grade A | |
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| *Key Information* | |
| Conditions in the body are controlled to provide a **constant internal environment**. This is called **homeostasis**. The conditions that must be controlled include body temperature, water content, carbon dioxide level and blood sugar level.  **Hormones** are **chemicals secreted by glands**. They travel through the bloodstream and affect target organs. | |
| *Revision Ideas* | |
| 1. Draw a cartoon strip showing how a person’s body would react to being too cold or too hot. | |
| 1. Make a revision card on diabetes and insulin. | |
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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 your body responding to change.***  It is important to keep the body at 37’c. **Describe** how the body responds to high and low temperatures and **explain** what would happen if the body gets too hot or cold(***6marks)*** | | | |
| ***Important words list***  Sweating  Increase blood flow  Heat stroke  Dehydration  Shivering  Respiration  Hypothermia  Exercising  Less blood flow near surface | |  | |
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| **B1g: Controlling Plant Growth** | | |
| Grade E 🡪 Grade C 🡪 Grade A | | |
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| *Key Information* | | |
| A **'tropism'** is a growth in **response** to a **stimulus**. Plants grow towards sources of **water and light**, which they need to survive and grow.  **Auxin** is a **plant hormone** produced in the stem tips and roots, which controls the direction of growth. Plant hormones are used in weed-killers, rooting powder and to control fruit ripening**.** | | |
| *Revision Ideas* | | |
| 1. Design an experiment to look at the effect of light on cress seeds. | | |
| 1. Write a (6 Mark) revision question on using plant hormones and write a mark scheme. | | |
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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 plant hormones.***  A plant is sensitive. It responses to different stimuli. **Describe** how a **plants roots** and **shoots** respond to **light** and **gravity**.(***6marks)*** | | |
| ***Important words list***  Positive  Negative  Phototropism  Geotropism  Gravity  Light  Roots  Shoots  Auxin | |  |
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| **B1h: Variation and Inheritance** | | | | |
| Grade E 🡪 Grade C 🡪 Grade A | | | | |
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| *Key Information* | | | | |
| Some characteristics of a living thing are caused by the **environment**, some by **inherited** factors, while others are caused by a combination of environment and inherited factors.  Male mammals carry **XY sex chromosomes** - female mammals carry **XX sex chromosomes.** Inherited disorders are caused by **faulty genes** on these chromosomes.  Different versions of a gene are called **alleles**, and these alleles can be **dominant** or **recessive**. Genetic diagrams can show the possible outcomes of a particular cross. | | | | |
| *Revision Ideas* | | | | |
| 1. Make a card sort for inherited and environmental characteristics | | | | |
| 1. Draw a diagram showing how genetic variation comes about showing a monohybrid cross | | | | |
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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 variation***  All the students in Harrison’s class are unique. **Describe** the difference between inherited and characteristics and those influenced by the environment and **explain** what causes variation (***6marks)*** | | | | |
| ***Important words list***  Gametes  Fertilisation  Mutations  Inherited  Environmental  Chromosomes  Genes  Variation |  | | | |
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