

Active Revision – Biology GCSE

Assessment Point – Year 11 Summer Exam

Research shows that students who do frequent chunks of revision across all 3 stages of revision below are more likely to reach their full potential.

- ✓ **Upload** – consolidate your knowledge
- ✓ **Process** – active retrieval practice
- ✓ **Download** – apply your knowledge



upload



process



download

For all topics - Use AQA [GCSE Biology past papers](#).

- Use mark schemes to self-assess.
- Complete one full Paper 2

TOPIC: Homeostasis - <https://www.aqa.org.uk/subjects/biology/gcse/biology-8461/specification/subject-content/homeostasis-and-response>

Nervous system, reflexes, hormones, menstrual cycle, contraception, diabetes, negative feedback

- Make mind maps for: nervous system, reflex arcs, the brain, the eye, endocrine system, control of blood glucose, the kidneys, puberty and menstrual cycle, contraceptives and plant hormones.

- Label a blank diagram of the nervous system and a reflex arc.
- Draw the menstrual cycle hormone graph and annotate it from memory.
- Sequence the stages of a reflex response using shuffled paper strips.
- Create a hormone flowchart (e.g. blood sugar control: insulin/glucagon).

Complete past paper questions and mark using this link:
<https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/homeostasis-and-response/>

<ul style="list-style-type: none"> • Create diagrams: neuron structure, reflex arc, endocrine glands location. • Draw and label a graph showing the menstrual cycle. Include the relative levels of the LH, FSH, oestrogen and progesterone, the relative thickness of the uterus lining and where ovulation occurs. • Flashcards: hormone functions, negative feedback loops. • Watch: Homeostasis revision videos (YouTube/Seneca). 	<ul style="list-style-type: none"> • Quiz yourself using flashcards with the Leitner system. • Make a quiz testing your knowledge on the brain, kidneys and eyes. Complete this at least 24 hours later to test your memory. • Complete the seneca homework set by your teacher 	
<p>TOPIC: Inheritance, variation and evolution https://www.aqa.org.uk/subjects/biology/gcse/biology-8461/specification/subject-content/inheritance-variation-and-evolution</p>		
<p><i>DNA, genetic inheritance, evolution, selective breeding, GM, extinction, speciation</i></p> <ul style="list-style-type: none"> • Draw and label: DNA structure, chromosome, Punnett square, mutations. • Flashcards: genetic terms (allele, genotype, phenotype, recessive, dominant, gene, homozygous, heterozygous). • Mind map: variation causes, selective breeding, genetic engineering, evolution. • Draw and label a cartoon strip on protein synthesis. 	<ul style="list-style-type: none"> • Complete a Punnett square from memory (e.g. for cystic fibrosis or eye colour). • Match keywords to definitions (e.g. dominant, homozygous). • Recreate a genetic cross problem and solve it without notes. • Write a summary of Darwin's theory of evolution and natural selection. • Complete the seneca homework set by your teacher 	<ul style="list-style-type: none"> • Complete past paper questions and mark using this link: https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/inheritance-variation-evolution/

<ul style="list-style-type: none"> • Make flashcards on the different scientists and what they did; Charles Darwin, Lamarck, Watson and Crick, Linnaeus, Mendel, Wallace, Woese. <p>Use Seneca or BBC Bitesize to fill gaps.</p>		
<p>TOPIC: Ecology https://www.aqa.org.uk/subjects/biology/gcse/biology-8461/specification/subject-content/ecology</p>		
<p><i>Ecosystems, food chains, adaptations, competition, biodiversity, pollution, deforestation, global warming</i></p> <ul style="list-style-type: none"> • Make diagrams: food web, pyramid of biomass, carbon cycle, water cycle, trophic levels • Flashcards: key definitions – producer, consumer, decomposer, abiotic/biotic. • Mind map human effects on ecosystems and how to maintain ecosystems • Mind map: threats to biodiversity and conservation strategies. • Make flashcards on food security and biotechnology • Watch: ecology summary videos on youtube cognito. 	<ul style="list-style-type: none"> • Draw and label the carbon cycle from memory. • Write out the adaptations of organisms in extreme environments. • Create a poster explaining how humans impact biodiversity. • Sequence the stages of natural cycles (e.g., water cycle) on shuffled cards. • Complete the seneca homework set by your teacher • 	<p>Complete past paper questions and mark using this link: https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/ecology/</p>
<p>TOPIC: Required practicals</p>		

<p>Reaction time (ruler drop), Effect of light/moisture on plant growth (hormones), Quadrat & transect sampling, Decay investigation</p> <ul style="list-style-type: none"> - Create a summary flashcard of all required practicals. - Sketch diagrams of experimental setups. - List variables (independent, dependent and control) and outcomes for each practical. - Watch Malmesbury science videos to remind you how the practical is set up. https://www.youtube.com/watch?v=SX6mow1AExI&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP 	<ul style="list-style-type: none"> - Draw the setup for each practical from memory and label all key parts. - Complete a table from memory with the following headings: Practical Name, Aim, Variables, Results. - Use flashcards to test on key terms such as dependent/independent variable, control variable, and accuracy. - Write a practice 6-mark question response for a required practical. Then, identify which parts of the mark scheme you included. - Complete the Seneca assignments set by your teacher 	<p>Questions will be in the topic links above.</p>
<p>TOPIC: Cell Biology - https://www.aqa.org.uk/subjects/biology/gcse/biology-8461/specification/subject-content/cell-biology#Cell_biology</p>		
<p>Cells, Cell Division (mitosis), Cell Specialisation, Stem Cells, Transport in Cells (osmosis, diffusion, active transport), Exchanging Substances</p> <ul style="list-style-type: none"> - Make mind maps for each subtopic in bold above. - Create flashcards with diagrams, use your revision guide to do this. - Create flashcards with key definitions on from the subtopics - Label diagrams (plant/animal cells, specialised cells, mitosis stages). - Use BBC Bitesize or Complete the Seneca assignments set by your teacher to fill knowledge gaps. - Watch YouTube recap: Cell Biology 	<ul style="list-style-type: none"> - Use flashcards with the Leitner system: Sort into daily, every 3 days, and weekly review piles based on how well you recall them. - Draw and label an animal and a plant cell from memory, then compare to a diagram and correct mistakes. - Sequence mitosis: Write each stage on paper strips, shuffle, and reorder from memory. - Describe the process of osmosis using a diagram drawn without notes. - Create 10 quiz questions and answer them 24 hours later to check long-term recall. - Complete the Seneca assignments set by your teacher 	<p>Complete past paper questions and mark them using the link - https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/cell-biology/</p>

TOPIC: Organisation - <https://www.aqa.org.uk/subjects/biology/gcse/biology-8461/specification/subject-content/organisation>

Levels of Organisation, Digestive System & Enzymes, The Lungs, The Heart, Blood Vessels, The Blood, Cardiovascular Disease (CVD), Health & Disease, Risk Factors, Cancer, Plant Cell Organisation, Transpiration

- Mind maps and labelled diagrams (heart, lungs, digestive system, leaf structure).
- Flashcards: lock and key theory, digestive enzymes, denaturing, blood components and blood vessels.
- Make a table comparing transpiration with translocation
- Draw annotated flowcharts for digestion & circulation.
- Watch [Organisation Quick-Fire Video](#)

- Draw and label the human heart, annotate with the direction of blood flow.
- Explain how enzymes work, the digestive enzymes and their roles and factors affecting them using a diagram, then test yourself using flashcards.
- Write the full digestive process without looking at notes, then compare.
- From memory, describe how water moves through a plant and what factors affect transpiration.
- Complete a comparison chart of arteries, veins and capillaries from memory.
- Complete the Seneca assignments set by your teacher

Complete past paper questions and mark them using the link - <https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/organisation/>

TOPIC: Infection and response - <https://www.aqa.org.uk/subjects/biology/gcse/biology-8461/specification/subject-content/infection-and-response>

Communicable Disease, Pathogens, White Blood Cells, Vaccination, Antibiotics, Drug Trials, Monoclonal Antibodies, Plant Diseases & Defences

- Create flashcards with the four types of pathogens and the linked diseases.
- Create a series of flashcards; the first set being about how monoclonal antibodies are made, the second about the uses of monoclonal antibodies, the third about how a pregnancy test works (including positive and negative results)
- Make a comic strip explaining the stages of a drug trial.

- Create a timeline of drug development stages, then rewrite from memory the next day.
- Describe how phagocytosis, antitoxins and antibodies work by sketching the process and writing a short explanation.
- Write a timeline of how vaccines work
- Sort flashcards into groups: types of pathogens, examples, diseases caused.
- Create and answer 15 multiple-choice questions using your own knowledge.
- Label a diagram showing how monoclonal antibodies work and how they are made. Cover and redraw from memory.

Complete past paper questions and mark them using the link - <https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/infection-and-response/>

<ul style="list-style-type: none"> - Draw and annotate diagrams of white blood cells (antibodies, antitoxins and phagocytosis) - Make a flow diagram explaining what a vaccine is and how it works. - Watch: Infection & Response Qs 	<ul style="list-style-type: none"> -Complete the Seneca assignments set by your teacher 	
<p>TOPIC: Bioenergetics - https://www.aqa.org.uk/subjects/biology/gcse/biology-8461/specification/subject-content/bioenergetics</p>		
<p>Photosynthesis (factors affecting it), Respiration (aerobic & anaerobic), Metabolism, Exercise</p> <ul style="list-style-type: none"> - Diagram flashcards for both types of respiration. - make a summary sheet comparing photosynthesis and respiration. - Mind map on how exercise affects the body. - Make flashcards on the following; metabolism, metabolic rate, factors affecting metabolism - Watch: Photosynthesis & Respiration 	<ul style="list-style-type: none"> - Write out the equations for photosynthesis from memory, then balance and check. - Write out the equations for aerobic, anaerobic respiration and fermentation from memory, then check. - Create a table comparing aerobic and anaerobic respiration. Fill it in without notes. - Write a step-by-step method for the photosynthesis practical from memory. - Explain the effects of exercise on the body and draw the changes that happen in heart rate and breathing rate. - Use flashcards to test yourself on limiting factors of photosynthesis and their impact. -Complete the Seneca assignments set by your teacher 	<p>Complete past paper questions and mark them using the link - https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/bioenergetics/</p>
<p>TOPIC: Required practicals</p>		
<p>Microscopy, Osmosis in Potatoes, Food Tests, Enzymes & pH, Effect of Light on Photosynthesis, Microbiology</p> <ul style="list-style-type: none"> - Create a summary flashcard of all required practicals. - Sketch diagrams of experimental setups. - List variables (independent, dependent 	<ul style="list-style-type: none"> - Draw the setup for each practical from memory and label all key parts. - Complete a table from memory with the following headings: Practical Name, Aim, Variables, Results. - Use flashcards to test on key terms such as dependent/independent variable, control variable, and accuracy. 	<p>Questions will be in the topic links above.</p>

<p>and control) and outcomes (results) for each practical.</p> <p>-Watch Malmesbury science videos to remind you how the practical is set up.</p> <p>https://www.youtube.com/watch?v=SX6mo-w1AExI&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP</p>	<ul style="list-style-type: none">- Write a practice 6-mark question response for a required practical. Then, identify which parts of the mark scheme you included.- Complete the Seneca assignments set by your teacher	
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