

GCSE to Further Education

A Level Biology

DNA and the Genetic Code

- Produce a poster - use images, keywords and simple explanations to:
- Define gene, chromosome, DNA and base pair
- Describe the structure and function of DNA and RNA
- Explain how DNA is copied in the body
- Outline some of the problems that occur with DNA replication and what the consequences of this might be.

Evolution

- Produce a one page revision guide for an AS Biology student that recaps the key words and concepts in this topic. Your revision guide should:
- Describe speciation
- Explain what a genome is
- Give examples of how this information has already been used to develop new treatments and technologies.

Biodiversity

- Write a persuasive letter to an MP, organisation or pressure group promoting conservation to maintain biodiversity. Your letter should:
- Define what is meant by species and classification
- Describe how species are classified
- Explain one-way scientists can collect data about a habitat, giving an example
- Explain adaptation and how habitat change may pose a threat to niche species

Exchange and transport

- Create a poster - your poster should either: compare exchange surfaces in mammals and fish or compare exchange surfaces in the lungs and the intestines. You could use a Venn diagram to do this. Your poster should:
- Describe diffusion, osmosis and active transport
- Explain why oxygen and glucose need to be absorbed and waste products removed
- Compare and contrast your chosen focus.

Cells

- Produce a one-page revision guide summarising one of the following topics: Cells and Cell Ultrastructure, Prokaryotes and Eukaryotes, or Mitosis and Meiosis.
- Whichever topic you choose, your revision guide should include:
- Key words and definitions
- Clearly labelled diagrams
- Short explanations of key ideas or processes.

Biological molecules

- Krabbe disease occurs when a person doesn't have a certain enzyme in their body. The disease effects the nervous system. Write a letter to a GP or a sufferer to explain what an enzyme is.
- Your poster should:
- Describe the structure of an enzyme
- Explain what enzymes do inside the body

Ecosystems

- Produce a newspaper or magazine article about one ecosystem (e.g. the arctic, the Sahara, the rainforest, or something closer to home like your local woodland, nature reserve or shoreline).
- Your article should include:
- Key words and definitions
- Pictures or diagrams of your chosen ecosystem.
- A description of the changes that have occurred in this ecosystem
- An explanation of the threats and future changes that may further alter this ecosystem.

Control systems

- Produce a poster summarising one of the following topics: Temperature Control, Water and the Kidneys, Glucose, or The Liver.
- Whichever topic you choose, your poster or display should include:
- Key words and definitions
- Clearly labelled diagrams
- Short explanations of key ideas or processes.

Energy and biological services

- Produce a newspaper or magazine article about one ecosystem (e.g. The Arctic, the Sahara, ta rainforest or something closer to home like your local woodland, nature reserve or shoreline).
- Your article should include:
- Key words and definitions
- Pictures or diagrams of your chosen ecosystem.
- A description of the changes that have occurred in this ecosystem
- An explanation of the threats and future changes that may further alter this ecosystem.

Scientific and investigative skills

Produce a glossary for the following key words:

- accuracy, anomaly, calibration, causal link, chance, confounding variable, control experiment, control group, control variable, correlation, dependent variable, errors, evidence, fair test, hypothesis, independent, null hypothesis, precision, probability, protocol, random distribution, random error, raw data, reliability, systematic error, true value, validity, zero error.