

Year 9

- Microscopy
- Cell division
- Eukaryotic and Prokaryotic Cells
- Specialised and Stem Cells
- Health and Disease
- Communicable and Non-Communicable
- Cancer
- Abiotic and Biotic Factors
- Adaptations and Extremophiles

YEAR 10

- What is homeostasis?
- What systems does it involve?
- Why is it important?

Homeostasis

Nervous system

- What is the nervous system made up of?
- Why is it important?
- What are reflexes?
- What is the CNS?
- Required practical: reaction time

- What is the endocrine system?
- Why is it important?
- How is blood glucose controlled?

Endocrine system

Blood glucose

- How does the thermoregulatory centre detect changes in temperature?
- Describe how the body warms the body and cools it down.

Thermoregulation

- What is the organisation of plants?
- What are the structures of the leaf, roots, xylem and phloem?
- What is transpiration and translocation?

BIOLOGY

Heart

- Structure of the heart, blood vessels and blood.
- Understand coronary heart disease and its risk factors.
- The gas exchange system and its adaptations.

Reproduction

- Compare and contrast sexual and asexual reproduction
- Be able to describe the process of meiosis
- Understand the structure of DNA and the human genome project.
- Understand the advantages and disadvantages of sexual and asexual reproduction

Sampling and Cycles

- How can animals and plants be sampled in environments?
- Required practical: factors affects population of a species
- How are materials cycled?

Ecosystems

- What is the order and hierarchy in ecosystems?
- How do organisms influence each other in habitats?
- What can affect the energy transfer in food chains?
- Required practical: what affects the rate of decay

Fertility

- What are the hormones involved in reproduction?
- How can this information be used to treat infertility and make contraception?

Plant Tissues

Diffusion and osmosis

- What is diffusion and osmosis?
- Where do they happen?
- Why are they important?
- Required practical 2 Osmosis

Active transport

- What is active transport?
- Why is it important?
- Where does it happen?
- Links in with parts of the plant and respiration from Year 7 and 8

Human Impact- Biodiversity

- What is biodiversity?
- What affects biodiversity?
- Why is biodiversity important?
- How can we maintain biodiversity?

Peat Bogs and Global Warming

- What is global warming?
- What affects global warming?
- What effects does it have on the environment?
- What are peat bogs?

Trophic Levels and Biomass

YEAR 11

Year 11

- Photosynthesis
- Cells Tissues and Organs
- Respiration
- Defence against disease
- Inheritance
- Evolution and DNA Technology
- Brain and Eye
- Food Production

UNDERLINED = Separate only

Year 10

- Homeostasis
- Plant Tissues
- Fertility
- Ecosystems
- Reproduction
- The Heart
- Movement in Cells
- Human Impact

YEAR
11

BIOLOGY

- What is the equation for photosynthesis?
- What factors limit photosynthesis?
- Required practical: light affect rate of photosynthesis

Photosynthesis

Cells, Tissues and Organs

- How do enzymes work and what factors affect them
- RP5 Effect of pH on Enzyme Activity
- The digestive system
- Enzymes involved in digestion and how they work
- RP4 Food Tests
- The Kidneys and Kidney Dialysis

- What are the two types of respiration?
- How do they affect the body?
- When are they used and what uses do they have?

Respiration

- Non Specific defence systems
- How white blood cells defend against disease
- How vaccines work and their global use
- Understanding the use of antibiotics and the difference compared to painkillers

Defense Against Disease

- What are the stages of drug development?
- How is bias avoided?

- Understand the necessity for uncontaminated cultures
- How to prepare culture medium
- RP2 Aseptic technique and Antibiotic effectiveness
- Calculating clear zones
- Binary Fission

Evolution

- What is evolution?
- How does it happen?
- What evidence is there for evolution?
- What affects extinction?
- Links to evolution in Year 8?

Inheritance

- What can influence our characteristics?
- How are they inherited/passed on?
- What impact can genetic disease have?

Monoclonal antibodies

- What are monoclonal antibodies?
- How are they made?
- Why are they important?

Drug development

- Factors which affect food security
- Sustainable mechanisms (fishing)
- Advantages and disadvantages of farming techniques.
- Intensive farming
- Fish Stocks
- Biotechnology in agriculture

Aseptic Technique

Gene technology

- What is cloning and how does it happen?
- How does genetic engineering work?
- How could genetic engineering affect us?
- What ethics are associated with gene technology?

Selective breeding

- What is variation in terms of DNA?
- What is selective breeding?
- What impacts can selective breeding have?

The eye and brain

- Function and structure of the brain and mapping the human brain
- Structure of the eye and the functions of the major parts.
- Accommodation to fix on near and far objects

Food Production

Revision

Future Study /
World of Work

Future Study / World of Work

- A levels
- College courses
- Apprenticeships

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