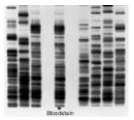
A-LEVEL BIOLOGY LEARNING JOURNEY

EXAMS



Genetic Fingerprinting

Recombinant DNA Technology

Gene Therapy

Using Genome Projects

Gene Expression and Cancer

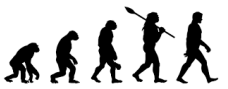
Regulation of transcription and translation

Alteration of the sequence of bases in DNA can alter the structure of proteins

Required Practical 12 - Investigation into the effect of a named environmental factor on the distribution of a given species







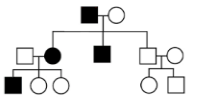
Conservation

Adaptations

Sampling

Populations

Inheritance



THE CONTROL OF GENE EXPRESSION

GENETICS, POPULATIONS, EVOLUTION AND ECOSYSTEMS

Control of Blood Water Potential

Glucose in Urine

Blood Glucose Concentration

Homeostasis & Negative Feedback

Skeletal Muscles

Most of a cells DNA is not translated

Variation, Evolution & Speciation

Succession

Population Size

Required Practical 11 - Production of a dilution series of a glucose solution and use of colorimetric techniques to produce a calibration curve with which to identify the concentration of glucose in an unknown 'urine' sample

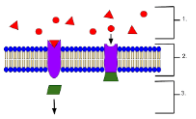
Required Practical 7 - Use of chromatography to investigate the pigments isolated from leaves of different plants, e.g. leaves from shade-tolerant and shade-intolerant plants or leaves of different colours



Nutrient Cycles

Fertilisers & Eutrophication

Required Practical 9 - Investigation into the effect of a named variable on the rate of respiration of cultures of single-celled organisms



Animal Responses

Receptors

ENERGY TRANSFERS IN AND BEWTEEN ORGANISMS

ORGANISMS RESPOND TO CHANGES IN THEIR INTERNAL AND EXTERNAL ENVIRONMENTS

Energy Transfer in Ecosystems

Photosynthesis

Farming Practices & Production

Respiration

Required Practical 8 - Investigation into the effect of a named factor on the rate of dehydrogenase activity in extracts of chloroplasts

Survival & Response



Control of Heart Rate



Nerve Impulses

Synaptic Transmission

Required Practical 10 - Investigation into the effect of an environmental variable on the movement of an animal using either a choice chamber or a maze



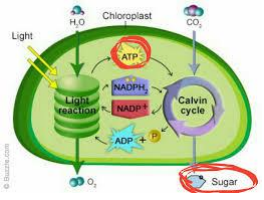
Required Practical 6 - . Use of aseptic techniques to investigate the effect of antimicrobial substances on microbial growth

Year 13

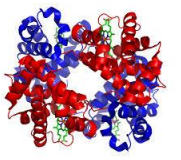
Investigating biodiversity

Species and taxonomy

Genetic Diversity can arise as a result of mutation during meiosis



DNA, Genes and Chromosomes



Haemoglobin



Biodiversity within a community

Required Practical 2- Preparation of stained squashes of cells from plant root tips; setup and use of an optical microscope to identify the stages of mitosis in these stained squashes and calculation of a mitotic index

Required Practical 3 - Production of a dilution series of a solute to produce a calibration curve with which to identify the water potential of plant tissue

Genetic Diversity and Adaptation



Surface area to volume ratio

DNA and Protein synthesis



Digestion and Absorption

Mass transport in plants

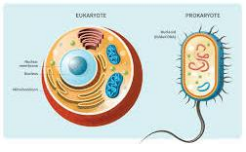
All Cells arise from other cells

CELLS

ORGANISMS EXCHANGE SUBSTANCES WITH THEIR ENVIRONMENTS

Required Practical 5 - Dissection of animal or plant gas exchange or mass transport system or of organ within such a system

Structure of prokaryotic cells and viruses



Structure of eukaryotic cells

Methods of studying cells



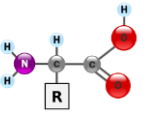
Required Practical 4 - Investigation into the effect of a named variable on the permeability of cell-surface membranes

Cell recognition and the immune system



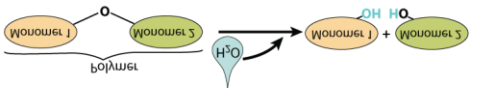
Structure of DNA & RNA

Gas Exchange



General Properties of Proteins

Mass transport in animals



Monomers & Polymers

Inorganic Ions

ATP

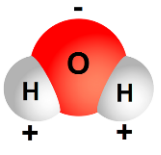


BIOLOGICAL MOLECULES

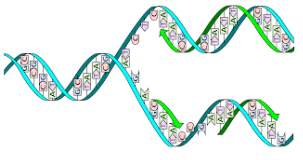
Year 12

Required Practical 1 - Investigation into the effect of a named variable on the rate of an enzyme-controlled reaction

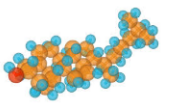
Water



DNA Replication

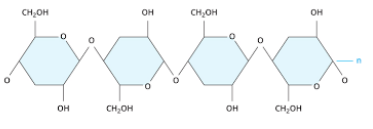


Many Proteins are Enzymes



Lipids

Carbohydrates





TEACHER 1

TEACHER 2