SIR WILLIAM ROBERTSON ACADEMY

BIOLOGY CURRICULUM MAP

RP 12 Field investigation into effect of a named variable on abundance

DNA TECHNOLOGIES
- Genetic engineering

STATISTICS
- Chi squared test
- Spearman' rank
- T test

REVISION

REVISION & EXAMS

Further Study
University – Biology, Medicine, Biomedical Science
Apprenticeships – Pharmacy, Conservation, Sport

Career Paths
Conservationist, Medicine, Forensic Science
General Science, Researcher , Sport Science

Skills
Research, Analysis, Practical/investigation, Problem-solving

Interest
A continued passion for learning about Biology

GENE EXPRESSION
- Cancer biology
- Stem cells
- Genome projects

ECOSYSTEMS
- Variation
- Competition
- Succession

Mock exams

Careers link – genetic counsellor

Careers link - pharmacist

RP 10 Using choice chambers to observe taxis and kinesis

RP 7 Chromatography of photosynthetic pigments

RP 8 Investigating the effects of different variables on photosynthesis

EVOLUTION
- Natural selection
- Speciation

HOMEOSTASIS
- Control of blood glucose
- Control of blood water potential

NERVOUS COORDINATION
- Neurones and synapses
- Muscular contraction

INHERITED CHANGE
- Inheritance and crosses
- Linkage

RESPIRATION
- Mitochondria ultrastructure
- Aerobic and anaerobic pathways

RESPONSE TO STIMULI
- Sensitivity to environment

ENERGY IN ECOSYSTEMS
- Biomass
- Fertilisers and nutrient cycles

PHOTOSYNTHESIS
- Chloroplast ultrastructure
- Light dependent and independent pathways

RP 11 Producing a calibration curve and identifying unknown glucose concentrations

RP 9 Investigating the effect of temperature on rate of respiration in yeast

Kidney dissection and biological drawing

Year 13

RP 5 Dissection of an animal mass transport organ

Careers link – biochemist

Dissection of lung and gill gas exchange tissue

PLANT MASS TRANSPORT
- Xylem and transpiration
- Phloem and translocation

BIODIVERSITY
- Taxonomy
- Species diversity

Field study trip

NUCLEIC ACIDS
- DNA and RNA structure
- DNA replication

ENERGY IN MOLECULES
- ATP
- Water

IMMUNE RESPONSE
- Primary immunity
- Phagocytosis
- Cell mediated and humoral responses

EXCHANGE
- Gas exchange in organisms
- Digestion and absorption in humans

GENES AND PROTEIN SYNTHESIS
- Transcription and translation

ANIMAL MASS TRANSPORT
- Haemoglobin
- Cardiovascular system

GENETIC DIVERSITY
- Genetic mutations
- Meiosis

Extraction of DNA from plant tissue

Year 12 mock exams

RP 1 Investigation into the effect of temperature on enzyme action

End of HT1 assessment

RP 6 Use of aseptic techniques to investigate the effect of antimicrobials on microorganism growth

RP 3 Investigating the effect of water potential on plant tissue

RP 2 Identifying stages of mitosis using microscopy of plant cells

BIOLOGICAL MOLECULES
- Proteins
- Enzymes

CELL TRANSPORT
- Passive transport
- Active transport

INTRODUCTION TO REQUIRED PRACTICALS

BIOLOGICAL MOLECULES
- Carbohydrates
- Lipids

CELL STRUCTURE
- Microscopy
- Cell ultrastructure
- Cell division

Year 12

RP 4 investigating the effect of temperature on membrane permeability