Higher Human Biology

# Course Rationale

Human Biology, the study of human biological systems, plays a crucial role in our everyday life. Human Biology affects everyone, and human biologists work to find solutions to humanity’s medical problems from how brain chemistry affects mental health through to identifying and combatting novel virus strains as they arise. Advances in technology have made human biology more exciting and relevant than ever.

The Higher Human Biology course gives you the opportunity to understand and investigate the living world in an engaging and enjoyable way. It develops your ability to think analytically, creatively and independently, and to make reasoned evaluations. The course provides opportunities for you to acquire and apply knowledge to evaluate biological issues, assess risk, make informed decisions and develop an ethical view of complex issues.

# Course Content

The course provides a broad-based, integrated study of a range of biological topics which develop the concepts of human biology. The content is set in contexts that are of particular significance and relevance to the human species. There are three main areas of study:

**Human cells**: division and differentiation in human cells, structure and replication of DNA, gene expression, mutations, human genomics, metabolic pathways, cellular respiration, energy systems in muscle cells

**Physiology and health:** gamete production and fertilisation, hormonal control of reproduction, the biology of controlling fertility, antenatal and postnatal screening, the structure and function of arteries, capillaries and veins, the structure and function of the heart, pathology of cardiovascular disease (CVD), blood glucose levels and obesity

**Neurobiology and immunology:** divisions of the nervous system and neural pathways, the cerebral cortex, memory, the cells of the nervous system and neurotransmitters at synapses, non-specific body defences, specific cellular defences against pathogens, immunisation, clinical trials of vaccines and drugs

# Skills

The skills of scientific enquiry and investigation are developed throughout the course. The course will support you to develop their communication, collaborative working and leadership skills, and to apply critical thinking in new and unfamiliar contexts to solve problems. Through it you will extend your abilities in planning and carrying out practical work.

# Course Assessment

The course assessment has two components: a question paper (80%) and an assignment (20%). The assignment is the report on a practical investigation carried out in class. Both are set and marked by the SQA. The course assessment is graded A-D.

# Progression

Successful completion may lead to **Advanced Higher** [Biology](http://www.learningatschool.net/PlainText/PlainText.aspx?SectionId=267ebbb2-54d3-4863-b9b5-0af5512b5ef6)**,** other qualifications or employment in Biology or related areas such as biological sciences and medicine, nursing, physiotherapy, dietetics, radiography, chiropody, beauty industries, land and animal industries, or sports and leisure.

# Career Pathways

# Anatomical pathology technician Audiologist Biochemist Clinical Engineer Dietician Clinical Psychologist Dentist Dental Hygienist Doctor Ergonomist Food scientist Geneticist Marine biologist Medical illustrator Medical Physicist Midwife Neuroscientist Nurse Occupational Therapist Optometrist Pharmacologist Pharmacist Podiatrist Speech and language therapist

# Teacher Paramedic Sports and exercise scientist Sports therapist Radiographer