



Enseignement secondaire		
Classes internationales		
	Régime anglophone	
Biologie		
Programme		
3IEC		

Leçons hebdomadaires: 2
Langue véhiculaire: anglais
Nombre minimal de devoirs par trimestre: 1

I. Organisation and maintenance of organisms

I.1 Organisms are made of cells

- Review cell structures and their corresponding functions: nucleus, cell membrane, mitochondrion, cytoplasm. (simplified overview, see 2I SL book for guidance)
- Movement into and out of cells (diffusion, osmosis, active transport, phagocytosis)

I.2 Excretion and homeostasis

- Homeostasis: maintaining a steady state
- The endocrine system
- Control of glucose levels and body temperature
- Excretion: removal of the waste products of metabolism
- Dialysis and the treatment of kidney failure

I.3 Perception and interpretation, flow of information

- Coordination: the nervous system
- Neurons can work together in reflex arcs
- The brain is the processor for the central nervous system
- Integration by the central nervous system
- Receptors and senses: the eye as a sense organ
- comparison between the two communication systems: nervous system and endocrine system.



II. Development of organisms and the continuity of life

II.1 Genetics

- Different forms of reproduction
- Variation and inheritance
- Structure of DNA
- DNA replication
- Protein synthesis
- Cell division
- Patterns of inheritance (including inherited medical conditions and codominance)
- Sex is determined by X and Y chromosomes

II.2 Evolution

- Causes of variation
- Variation and natural selection: evolution of species
- Artificial selection
- Genetic engineering: gene transfer in plants and animals

III. Ecology: organisms and their environment

- Levels of organization in an ecosystem
- Types of nutrition and feeding relationships
- Flow of energy: food chains and food webs
- Nutrient cycles (carbon cycle/nitrogen cycle)
- Factors affecting population size
- Pollution

OR, if possible, organisation of a 1 day visit (e.g. Hollenfels) to cover some topics in ecology