Enseignement secondaire		
Classes internationales		
	Régime anglophone	
Biologie		
Programme		
4IEC		

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

- Describe the levels of organization within organisms, specialized cells
- Describe cell structures as well as corresponding functions: nucleus, cytoplasm, cell membrane, cell wall, chloroplast and vacuole (simplified overview, see 2I SL book for guidance)
- Compare the structures of different cells

I.2 Biological molecules

- Organic molecules (carbohydrates, lipids, proteins, nucleic acids) and basic biochemistry
- Testing for biochemicals (glucose and starch)
- Catabolism and anabolism
- Enzymes control biochemical reactions in living organisms
- Mode of action of enzymes (active site, activation energy, lock-and-key model,…)
- Factors affecting the rate of reaction of enzymes

I.3 Nutrition and digestion

- Animal nutrition converts food molecules to a usable form
- Ingestion, digestion, absorption, assimilation and egestion, defecation as well as peristalsis
- Digestive enzymes

I.4 Gas exchange

- Gas exchange supplies oxygen for respiration
- Breathing ventilates the lungs
- Smoking and disease

I.5 Circulation

- Blood as transport medium
- The circulatory system
- different types of blood vessels
- The heart
- Combating infection: blood and defense against disease
- Revision of the immune system: macrophages, antibody production, B cells and T cells
- Vaccination
- Allergies

II. Development of organisms and the continuity of life:

II.1 Human Reproduction

- Reproduction in humans
- The menstrual cycle
- Copulation and conception
- Contraception
- Pregnancy
- Twins
- Sexually transmitted diseases
- Growth and development

II.2 Reproduction in plants

- Structures of the flower and their functions
- Reproduction in flowering plants:
    - Pollination
    - Fertilization and the formation of seed and fruit
- Dispersal of seeds and fruits
- Germination of seeds
- Vegetative propagation
- Artificial propagation