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| <b>Enseignement secondaire</b>              |  |  |
| <b>Classes internationales</b>              |  |  |
| <b>Régime anglophone</b>                    |  |  |
| <b>Biologie</b>                             |  |  |
| <b>Programme</b>                            |  |  |
| <b>4IEC</b>                                 |  |  |
| Leçons hebdomadaires: 2                     |  |  |
| Langue véhiculaire: anglais                 |  |  |
| Nombre minimal de devoirs par trimestre : 1 |  |  |

**révision file:**

**I. Characteristics and variety of living organisms**

- Respiration, Sensitivity, Nutrition, growth and development, excretion, reproduction
- Variety of living organisms; common features shared by/differences of organisms within the five main groups: plants, animals, fungi, bacteria, protocists (and viruses)

**II. Organisation and maintenance of organisms**

**1. Nutrition and digestion**

- Photosynthesis and plant nutrition

**2. Gas exchange**

- Gas exchange at the leaf and photosynthesis

**3. Circulation**

- Transport systems in plants
- Transpiration: water movement through the plant

**III. Development of organisms and the continuity of life**

**Reproduction in plants**

- 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



**Program:**

## **I. Organisation and maintenance of organisms**

### **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)
- Compare the structures of different cells

### **2. Biological molecules**

- Organic molecules (carbohydrates, lipids, proteins, nucleic acids) and basic biochemistry
- Testing for biochemicals (glucose and starch)
- Enzymes control biochemical reactions in living organisms

### **3. Nutrition and digestion**

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

### **4. Respiration**

- Cell respiration provides energy for life
- Aerobic and anaerobic respiration
- The measurement of respiration

### **5. Gas exchange**

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

### **6. Circulation**

- Blood as transport medium
- Combating infection: blood and defense against disease
- Antibodies and the immune response
- The circulatory system
- different types of blood vessels
- The heart



## II. Development of organisms and the continuity of life:

### Human Reproduction

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