



<b>Enseignement secondaire</b>		
<b>Classes internationales</b>		
	<b>Régime anglophone</b>	
<b>Biologie</b>		
<b>Programme</b>		
<b>6IEC</b>		

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

Manuels scolaires : livre de 6<sup>ième</sup>

### Theory

	<u>Topic</u>	<u>Contents</u>
<b>1</b>	<b>Plants and their reproduction</b>	<ul style="list-style-type: none"><li>• Recall how organisms are classified</li><li>• Interpret scientific organism names</li><li>• Explain the importance of biodiversity</li><li>• Explain the differences between sexual and asexual reproduction</li><li>• Give examples of asexual reproduction in plants</li><li>• Explain characteristics of offspring produced by sexual and asexual reproduction</li><li>• Describe the general structure of flowering plants</li><li>• Explain how the structures of flowers and pollen allow pollination by animals or wind</li><li>• Explain how plants ensure cross-pollination</li><li>• Describe how pollination leads to fertilization</li><li>• Describe the formation of seeds and fruits</li><li>• Explain the functions of seeds and fruits</li><li>• Describe what happens in germination</li><li>• Explain why seeds and plants need certain resources</li><li>• Describe how organisms are interdependent - coevolution</li></ul>



2	<b>Classification</b>	<ul style="list-style-type: none"> <li>• Distinguish different <u>invertebrate groups</u> (insects, arachnids, molluscs, annelids, crustaceans) and name their characteristic features</li> <li>• Specify anatomy, physiology and the way of living of at least 2 <u>representative of the insects (one of which should be the honey bee)</u>, 1 representative of molluscs and 1 other group</li> <li>• Use a dichotomous key</li> </ul>
3	<b>Food and nutrition</b>	<ul style="list-style-type: none"> <li>• Distinguish the different types of nutrients (simple representation) and their corresponding functions in our body</li> <li>• Describe the impact of physical activity, age and gender on energy needs</li> <li>• Describe the benefits of a balanced diet</li> <li>• Explain how different types of malnutrition are caused and their effects</li> <li>• Name the parts of the digestive system and their functions</li> <li>• Explain why enzymes and bacteria are useful for digestion (simple representation of enzymes)</li> <li>• Explain how diffusion enables absorption by the small intestine</li> </ul>
		<p><i>Applications:</i></p> <ul style="list-style-type: none"> <li>- <i>Interpret nutrition information labels</i></li> <li>- <i>Importance of surface area in digestion and absorption</i></li> </ul>
4	<b>Breathing and respiration</b>	<ul style="list-style-type: none"> <li>• Explain what happens in aerobic respiration</li> <li>• Explain how to detect aerobic respiration (limewater, hydrogen carbonate indicator)</li> <li>• Describe the anatomy of the human respiratory system</li> <li>• Describe how gas exchange occurs in different organisms</li> <li>• Describe the functions of the organs in the gas exchange system</li> <li>• Explain how the structure of the lungs allows efficient gas exchange</li> <li>• Describe the effects of exercise on ventilation and heart beat rates</li> <li>• Describe the transport of oxygen and waste products in the blood</li> <li>• Describe the causes and explain the effects of reduced oxygen supply on the body</li> </ul>
		<p><i>Application: Cause and effect of lung cancer</i></p>



**General skills:**

- Accuracy and estimates
- Means and ranges

**Practical Work - examples**

<b><u>Topic</u></b>	<b><u>Contents</u></b>
Quadrat sampling	<ul style="list-style-type: none"><li>• Use the quadrat method to estimate and compare populations</li></ul>
Flower and pollen	<ul style="list-style-type: none"><li>• Produce a diagram of a flower</li><li>• Observe pollen and honey under the microscope</li></ul>
Project on invertebrates	<ul style="list-style-type: none"><li>• Research on needs of land snail</li><li>• Set up of a species appropriate terrarium</li></ul>
Leaf litter	<ul style="list-style-type: none"><li>• Explore living organisms in leaf litter</li></ul>
Experimental design	<ul style="list-style-type: none"><li>• Investigation of a factor affecting woodlice behaviour (light, temperature, humidity)</li><li>• Investigation of factors affecting seed germination</li></ul>
Invertebrate dissection	e.g. <ul style="list-style-type: none"><li>• Sepia/mussel</li><li>• Honey bee / lobster</li></ul>
Insect development	<ul style="list-style-type: none"><li>• Mealworm beetle (diary of development)</li></ul>
Gas exchange	<ul style="list-style-type: none"><li>• Measure lung volumes</li><li>• Compare ventilation rates before and after exercise</li></ul>
Aerobic respiration	<ul style="list-style-type: none"><li>• Identify products of aerobic respiration</li></ul>
Nutrition	<ul style="list-style-type: none"><li>• Construct a food pyramid</li></ul>
Digestion	<ul style="list-style-type: none"><li>• Investigate the effect of amylase on starch digestion</li></ul>