

## Biology 2201 - Unit 2: Biodiversity

I. Classifying Living Things	Text References
<p>"explain how scientific knowledge evolves as new evidence comes to light and as laws and theories are tested and subsequently restricted, revised, or replaced</p> <ul style="list-style-type: none"> <li>- develop a list of characteristics that differentiate living and non-living things (cells, biogenesis growth and development, metabolism, water requirement, organic compound production, reproduction with inheritance and adaptations)</li> <li>- explain how scientific classification systems have developed</li> </ul>	<p>102-104 100-107</p>
<p>"describe and apply classification systems and nomenclatures used in the biological sciences</p> <ul style="list-style-type: none"> <li>- list and describe the seven major categories of Linnaeus classification system (kingdom, phylum, class, order, family, genus, species)</li> <li>- explain the advantages of binomial nomenclature</li> <li>- demonstrate how to use a taxonomic key to group and identify an organism</li> </ul>	<p>108-109 110-111</p>
<p>"identify limitations of a biological classification system and identify alternative ways of classifying to accommodate anomalies</p> <ul style="list-style-type: none"> <li>- examine the common names of some species of organisms and show the inadequacies and language problems associated with this method of identification</li> <li>- explain why a virus does not fit neatly into the existing classification system</li> </ul>	<p>112 122</p>
<p>"identify new questions or problems that arise from what was learned</p> <ul style="list-style-type: none"> <li>- recognize the difficulties inherent in the categorization of some organisms into distinct groups and identify the limitations of a five-kingdom system that led to the six-kingdom system</li> </ul>	<p>106-107</p>
<ul style="list-style-type: none"> <li>- explain how organisms are classified using: (i) radioactive dating (ii) biochemical information (DNA/protein comparisons) (iii) structural information (iv) comparative embryology (v) cellular structure (vi) behaviour</li> </ul> <p>"describe how classification systems improved as a result of the development of modern techniques</p>	<p>113-119</p>
II. Diversity Among Living Things	
<p>"describe the anatomy and physiology of a representative organism from each kingdom, including a representative virus</p> <ul style="list-style-type: none"> <li>- identify the general characteristics (cell type, nutrition, body form, reproduction, locomotion) that distinguish the members of the six recognized kingdoms (Eubacteria, Archaeobacteria, Protista, Fungi, Plantae, Animalia) from each other.</li> <li>- describe the general characteristics that distinguish members of the plant and animal phyla</li> <li>- identify examples of members of each of the Kingdoms</li> </ul>	<p>132-195 164-166</p>
<ul style="list-style-type: none"> <li>- describe the differences that exist between the major groups of plants (bryophytes, ferns, gymnosperms and angiosperms)</li> <li>- explain why angiosperms are the most diverse plant group</li> </ul>	<p>169-175 175-181</p>
<ul style="list-style-type: none"> <li>- describe the differences that exist between the invertebrate phyla (symmetry, body cavity, reproduction, digestion)</li> <li>- explain why arthropods are the most successful class of animals</li> </ul>	<p>182-186 186-189</p>
<ul style="list-style-type: none"> <li>- describe the differences that exist between the vertebrate phyla (symmetry, body cavity, circulation, respiration, reproduction, endoskeleton)</li> </ul>	<p>190-195</p>
<p>"analyze and explain the life cycle of a sample organism from each kingdom, including representative virus . Life cycle of:</p> <p>(i) Virus - T4      (ii) Eubacteria/Archaeobacteria - E. Coli      (iii) Protista - Plasmodium (iv) Fungi - Rhizopus      (v) Plantae - Fern      (vi) Animal - Frog</p>	<p>(i) 123-124 (ii) 134-135 (iii) 146, (iv) 154 (v) 173 (vi) 193</p>