

# Lesson Plans



<b>Title of the lesson</b>	<b>Variety of Life Tour</b>
<b>Duration</b>	60 mins
<b>List of resources supplied by NMI</b>	Pencil, clipboard, note paper, adaptation exercise sheet.
<b>Aims</b>	Investigate the variety of animal life and the causes of variation in organisms, genetic diversity, inheritance, evolution and the use of genetic engineering in modern conservation biology, human impacts on species.
<b>Keywords</b>	Variation, heredity, gene expression, adaptations, ancient DNA, genetic diversity, inheritance, evolution, genetic engineering, conservation biology, human impacts, endangerment, extinction, Mendel, Darwin, Tree of Life.
<b>Instructional input</b>	<p>Tour:</p> <p><b>Intro talk- At Giant Irish Deer</b>          Introduce topic- variation of living things: (10 mins approx)</p> <ul style="list-style-type: none"> <li>• Need for variation</li> <li>• What causes variation- forgotten work of Mendel</li> <li>• Animal adaptation- what happens when you can't adapt- example of extinction of Giant Irish Deer</li> </ul> <p><b>Irish Room</b></p> <ul style="list-style-type: none"> <li>• Red Deer- use of ancient DNA to trace the origins of a population</li> <li>• Golden Eagle and White tailed Eagle- extinction &amp; reintroduction, wild population management</li> <li>• Irish bat populations- genetics uncover new species</li> <li>• Red and grey squirrels- Squirrel Pox Virus</li> <li>• Thresher shark- evolution of tail</li> </ul> <p><b>First Floor</b></p> <ul style="list-style-type: none"> <li>• Tree of life- Darwin</li> <li>• Giant Panda- evolutionary cul-de-sac?</li> <li>• Koala- two "thumbs" adaptation</li> <li>• Thylacine (Tasmanian wolf, Tasmanian Tiger, Tassie tiger)- recent extinct mammal, look at animal husbandry and its importance in captive breeding</li> <li>• Horse/human comparative anatomy</li> <li>• Fin Whale- pentadactyl limb</li> <li>• Cheetah- near extinction event and the consequence of species interbreeding</li> <li>• Apes and hominid evolution</li> </ul>

<p><b>Independent practice</b></p>	<p>Practical- adaptation exercise sheet</p> <p>This exercise sheet is an aid to note taking for the students as they follow the tour around the different exhibits. Animals visited on the tour are listed and a short paragraph on each to serve as a memory aid. Use of exercise sheet is optional and at the discretion of the teacher.</p> <p>Discussion &amp; debate throughout tour.</p>
<p><b>Curriculum ties:</b></p> <p><i>Junior Cert:</i></p> <p>Science (5.1 Biology)</p> <p><i>Leaving Certificate Established:</i></p> <p>Biology (1.4: General Principles of Ecology; 2.5: Genetics; 3.1: Diversity of Organisms)</p>	