Knowledge and Understanding to be developed	**Key Terms to be learned this topic:**
This topic covers an overview of the need for classification and how different organisms show adaptations which enable them to compete successfully for resources within their habitat. The term biodiversity is also covered, along with factors which affect it and how it can be measured. There are a number of opportunities to develop skills in analysis and evaluation within the investigation into the abundance and distribution of a species. Learners should also be able to apply sampling techniques within the fieldwork to any ensure any samples collected are representative. There is also opportunity to evaluate risk when considering the use of biological control agents. Maths skills include planning experiments to make observations; recognising when to apply knowledge of sampling techniques, to ensure representative samples; evaluating methods; carrying out statistical analysis; interpreting observations and evaluating in terms of accuracy, precision, repeatability and reproducibility.	Invertebrate vertebrate genus species adaptations resources biodiversity legislation endangered sampling alien species capture-recapture technique biological control

Learning Objectives and Outcomes:
Students should be able to :

a) living organisms showing a range of sizes, features and complexity; the broad descriptive grouping into plants - non-flowering and flowering; animals - invertebrates and vertebrates
(b) the means by which organisms which have similar features and characteristics are classified into groups; the need for a scientific system for identification and the need for scientific as opposed to 'common' names
(c) the fact that organisms have morphological and behavioural adaptations which enable them to survive in their environment
(d) individual organisms needing resources from their environment e.g. food, water, light and minerals; how the size of a population may be affected by competition for these resources along with predation, disease and pollution
(e) the term biodiversity: the variety of different species and numbers of individuals within those species in an area; why biodiversity is important; the ways in which biodiversity and endangered species can be protected including issues surrounding the use of legislation
f) how quadrats can be used to investigate the abundance of species
(g) the principles of sampling; the need to collect sufficient data
(h) **the principles of capture/recapture techniques including simple calculations on estimated population size**
(i) the use of biological control agents and possible issues surrounding this; the introduction of alien species and their effects on local wildlife