



PROGRESSION OF KNOWLEDGE



Biology Unit: Evolution and Inheritance

What does progression of knowledge look like?

Year	Progression of Knowledge
6	Evolution and inheritance • State what is meant by the term evolution. • State the evolution occurs over a long period of time (for multi cellular organisms). • Recall how fossils are formed. • Identify why species show variation. • Explain how animals and plants are adapted to their environment. • Explain what a habitat is. • Identify work done by Charles Darwin, Alfred Wallace, Mary Anning and John Edmonstone. • State the environment humans evolved in. • Explain how geographical location has resulted in the evolution of a spectrum of skin colours.
7	Variation • Define variation, characteristic, data, and accurate, continuous and discontinuous variation. • Inherited and environmental variation, species, population. • Tabulate data and interpret graphical data. • Record observations of variations within a species. • Explain why humans show a range of variations from hair colour to skin pigmentation. • Explain how genetic and environmental factors result in variation. • Variation between and within a species. • Explain how adaptations enable a species to survive. • State the role of melanin. • State why people have different characteristics. • Explain why people have different hair types and colour. • Identity ways in which humans have adapted to their environment.
8	Evolution • Define the following terms: adaptations, natural selection, species, habitat, extinct, endangered, predator, prey, invertebrate, vertebrate. • State the names of the different animal kingdoms. • Explain the relationship between predator and prey. • Describe the process of natural selection. • Identify the following people: Charles Darwin, Carl Linnaeus, John Edmonstone. • Explain what is meant by binomial naming. • Explain how we categorise animals. • Suggest the limitations of using the classification process. • Explain why animals become extinct. • Suggest ways in which humans are still evolving.

Year	Progression of Knowledge
9	Inheritance • Explain the process of inheritance. • Define the terms: chromosomes, gene, allele, dominant, recessive, melanin. • State what DNA. • Compare and contrast discontinuous and continuous variation. • Explain how key characteristics: hair colour, eye colour, skin colour are inherited. • Explain the difference between inherited and environmental variation. • Explain the difference between blood groups. • Explain how species, including humans inherit sex. • Create Punnett squares to explain the process of inheritance. • Explain how DNA fingerprinting works. • Explain how selective breeding occurs. • Explain the process of genetic engineering. • Evaluate the advantages and disadvantages of using GMOs.