**Evolution and Inheritance**

**NC Statutory Guidance**

Pupils should be taught to:

* recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
* recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
* identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

**Working Scientifically**

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

* planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
* taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
* recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
* using test results to make predictions to set up further comparative and fair tests
* reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
* identifying scientific evidence that has been used to support or refute ideas or arguments

**Resources**

Twinkl PlanIt to be adapted.

**Lesson Overview (Statutory in Bold)**

|  |  |  |  |
| --- | --- | --- | --- |
| WALT | Knowledge to be Taught | Skills to be Taught and Investigations | Vocabulary |
| Explain scientific concept of inheritance. | Cells are the building blocks of all living things. All living things are made up of cells.  Cells contain DNA, which carries the characteristics that we inherit.  Different species have different characteristics from each other.  The differences between the individuals in a species is called variation.  Variation helps a species to survive, by causing individuals of a species to be genetically and physically different.  In science, inheritance refers to the genes that are passed on from parents to offspring. | **Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.** | Cells  DNA  Genes  Inheritance  Evolution  Variation  Species  Inherited trait  Acquired trait  Characteristic  Offspring |
| Demonstrate understanding of scientific meaning of adaptation. | A habitat refers to a specific area or place in which animals and plants can live.  An environment contains many habitats and includes areas where there are both living and non-living things.  Variation does not happen on purpose, it is accidental.  Successful variations make it easier for a species to survive in their habitat. | **Identify how animals and plants are adapted to suit their environment in different ways.** | Environment  Habitat  Variation  Characteristics |
| Identify key ideas of theory of evolution. | Charles Darwin was an English naturalist who is famous for his work on evolution. He is often considered to have made the most significant contributions to the theory of evolution.  Information about Darwin’s study of the Galapagos finches and their impact on the theory of evolution. | Investigate Galapagos finch beak sizes. Use different apparatus to pick up different object and see how some are better for different shapes, relate to Darwin’s findings.  **Identifying scientific evidence that has been used to support or refute ideas or arguments; Identify how adaptation may lead to evolution** | Naturalist  Galapagos Islands  Adaptation  Characteristics  Variation |
| Identify evidence for evolution from fossil records. | Fossils are imprints of long dead plants and animals found in rocks. They are important because they were formed many millions of years ago. This means they can tells how plants and animals on earth used to look.  Information about Mary Anning. | **Identifying scientific evidence that has been used to support or refute ideas or arguments; Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago** | Fossil  Fossil record  Palaeontologist  Plesiosaur |
| Understand how human beings have evolved. | People in Darwin’s time did not want to believe that we were closely related to animal species.  Fossil records and DNA show the similarities between modern humans (homo sapiens) and other species. | Identifying scientific evidence that has been used to support or refute ideas or arguments; Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago | Controversial  Common ancestor  Australopithecus  Homo neanderthalensis  Homo sapiens  Cladogram |
| Explain how adaptations can have both advantages and disadvantages. | It is rare that an adaptation will have a completely positive or negative effect on the living thing. Often the adaptive trait confers an advantage but can cause other disadvantages, even if these do not harm the chances of the living thing’s survival. | Identify how adaptation may lead to evolution | Adaptation  Mutation |