

# Science

## Knowledge and Skills Organisers

### Y6 Evolution and Inheritance



Our Science Knowledge and Skills organisers are primarily a planning guide for the teachers. They include the statutory statements (**Subject Knowledge to be covered**) and the non statutory guidance (in blue). They offer suggestions (in red) for how these statements might be taught **working scientifically** – which is a requirement of the National Curriculum.

The Knowledge and Skills Organisers map out how and when these areas are taught and help to build a clear, progressive scientific statement of intent for our children as they progress through the school.

We have added additional ideas and guidance for the teachers, which they can choose to use and interpret i.e. how the local area might be used, key questions and ideas which might be pursued, outdoor learning opportunities and cross curricular links as these are features we recognise are important in terms of our holistic curriculum provision.

Parental/ carer support:

By mapping out our curriculum in this way we hope that these documents also help parents and carers support the learning of their child/ren by

- Showing the knowledge being covered
- Offering some suggestions which might also be investigated at home
- Sharing key vocabulary, which can be discussed to ensure your child's understanding
- Suggestions of places to visit

### **Outdoor Learning:**

Look for adaptations in local area

e.g. investigating how different wild plants are choosing different locations to grow.

Why would a fox choose to live in an urban setting?

### **Science skills (Working Scientifically) to be covered**

- **planning different types of scientific enquiries to answer questions, (eg how have local animals adapted to our locality? Foxes, hedgehogs) 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 e.g comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. They might analyse the advantages and disadvantages of specific adaptations, such as being on 2 feet rather than 4, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.**
- **identifying scientific evidence that has been used to support or refute ideas or arguments (e.g Darwin, Anning, Wallace)**

### **Subject Knowledge to be covered:**

- 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 e.g **They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles.**
- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution (e.g **They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the development of insulating fur on the arctic fox.**

### **Local Links**

STEM DNA workshop or info on the STEM website

Alfred Wallace – link to Hertfordshire (Educated at Richard Hale School, Hertford)

### **Key Vocabulary for topic**

evolution, adaption, inherited traits, adaptive traits  
natural selection, inheritance, Charles Darwin, Mary Anning  
Alfred Wallace, DNA , genes, variation, parent  
Offspring, fossil, environment, habitat, fossilisation  
Plants, animals, living things

## **Year 6 – Evolution and Inheritance**

### **Cross –Curricular/Lit link**

English - The Molliebird book and teaching scheme for evolution.  
Biography Darwin, Linneas  
“Charles Darwin’s on the Origin of Specis” by Sabina Radeva  
Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.

### **Possible Questions/Areas to cover**

What have you inherited from your parents, grandparents? ( sensitivity for any looked after children or adopted/fostered children)  
Investigate different types of dogs (What happens when poodle crossed with Labrador?)  
Adaptation -Why are giraffes necks so long? Does this make them stronger or weaker? Why do birds have a variety of beaks? How have penguins adapted to extreme cold?  
(play game)  
What could happen to make a species extinct?  
Why is it an advantage to be able to adapt?