

Brough Primary School – Curriculum Intention Plan 2023 - 2024



Subject: Science Year Group: Year 5/6		Area of learning: Evolution and Inheritance (Year B)	
Links to previous work/Remember when	<ul style="list-style-type: none"> ● KS1 – Children may have learnt that most living things live in habitats to which they are suited and be able to describe how different habitats provide the basic needs of different kinds of animals and plants. ● They may have learnt to identify animals and plants from a variety of environments. They may have noticed that animals have offspring that grow into adults. ● They also learnt about reproduction in some plants and animals. ● KS2 – In the Rocks and Soils topic (Y3), children may have learnt how fossils are formed. <p><u>Working Scientifically</u></p> <ul style="list-style-type: none"> ● being able to ask and investigate relevant scientific questions; ● setting up simple scientific enquiries; ● making systematic and careful observations; ● gathering, recording and presenting data; ● reporting on findings both oral and written; ● using results to draw simple conclusions ● using straight forward scientific evidence to support what they have found out. 		
	Year 5/6	Key Skills to be taught	
Summer 1 2024 What the children should know at the end of this series of lessons	<ul style="list-style-type: none"> ● recognise that living things have changed over time and that fossils provide information about living things that inherited 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. <p><u>Working Scientifically</u></p> <ul style="list-style-type: none"> ● plan different types of scientific enquiries about local animals and how they are adapted to their environment, including recognising and controlling variables where necessary ● Compare how some living things are adapted to survive in extreme environments, e.g. cactuses, penguins and camels 		

Brough Primary School – Curriculum Intention Plan 2023 - 2024



	<ul style="list-style-type: none"> • take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • record results using scientific diagrams and labels • use test results to make predictions to set up further comparative and fair tests • report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • identify scientific evidence that has been used to support or refute ideas or arguments
--	--

Vocabulary

Offspring, characteristics, vary/variation, inherit/inheritance, environmental variation, suited/suitable, environment, natural selection, fossils, theory, opinion, evolution adaptation, gene, organism, species, adapt, genes, genetics, physical traits.

Sequence of learning	Learning Objectives/Outcomes	Suggested lesson outline
<p>1 Use Explorify Zoom in Zoom out - Garden Blades as a way in.</p>	<p>Learning Objective: I can identify how plants are adapted to their environment.</p> <p>Key Knowledge: In this context, adapt means the biological mechanism by which organisms adapt or change due to changes in their environment. Organisms have to adapt when their environment changes over time. Cacti are adapted to life in hot arid environments by having fixed stems that store water and very small leaves to minimise evaporation.</p> <p>Enquiry Type:</p>	<p>Recap – What do you already know about evolution, adaptation and inheritance? What can you remember about habitats and the basic needs of plants and animals?</p> <p>Plant Adaptation In this lesson children understand that adaptation is how a plant or animal has changed over a long period to be better suited to the environment in which they live. Focus - camels, then water lilies, cacti and dandelions.</p> <p><i>Children write an explanation of how cactus are well adapted to suit life in a desert. They may go on and say why a cactus has large spikes and what might happen if they didn't. As a next step, they could give two reasons, based on their scientific thinking, as to how water lilies benefit from having large leaves.</i></p>

Brough Primary School – Curriculum Intention Plan 2023 - 2024



	Compare how some living things are adapted to survive in extreme environments.	
2	<p>Learning Objective: I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>Key Knowledge: In this context, adapt means the biological mechanism by which organisms adapt or change due to changes in their environment. Organisms have to adapt when their environment changes over time. Animals are adapted in different ways to suit different environments.</p> <p>Enquiry Type: Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Recap – paired talk - What does adaptation mean? How are camels adapted to their environment?</p> <p>Animal adaptations In this lesson the children will focus on animal adaptations, writing an introduction to a chosen animal then researching and writing a paragraph to explain the specific adaptations for the animal. Animal adaptation is a physical or behavioural adaptation which helps them survive in their chosen environment.</p> <p><i>Children write an introduction to their chosen animal giving details about where they live, what they eat, and if they live solitary lives or part of a group. They then research the adaptations the animal has before writing a second paragraph to explain those adaptations.</i></p>
3 You could use Explorify - The Drinks Menu here.	<p>Learning Objective: I recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Key Knowledge: Natural selection is the survival of the fittest, the best adapted organisms are able to survive. The most desirable characteristics get</p>	<p>Recap – What does adaptation mean? Can you give an example of a plant or animal adaptation?</p> <p>Natural Selection In this lesson the children will learn that natural selection is when organisms that are best suited to their environment survive and pass on their genetic traits. At the same time, organisms that are less likely to survive tend to be eliminated from the ecosystem. This is often called the survival of the fittest.</p> <p><i>Children study the Dark Peppered Moth as a recent example of natural selection.</i></p>

Brough Primary School – Curriculum Intention Plan 2023 - 2024



	<p>passed down to their offspring because they survive and breed, whereas those with less desirable characteristics may not be so lucky.</p> <p>Enquiry Type: Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	<p><i>They then design a pattern for a moth to remain camouflage against different surfaces before matching the key words to their definition. You could give the children a short research task of finding three interesting facts about Charles Darwin, who is credited with developing the theory of evolution.</i></p>
4	<p>Learning Objective: I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>Key Knowledge: One of Darwin's expeditions when he was younger took him to the Galapagos Islands. Darwin observed that the finches on the islands were identical to each other and those on the mainland except for their beaks. They had adapted their beaks to be able to eat the seeds that were available on the different islands.</p> <p>Enquiry Type: Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p>	<p>Recap – Can you remember what adaptation, natural selection and evolution mean? Discuss and reinforce understanding. Why did finches in the Galapagos Islands have to evolve their beaks? How does adaptation lead to evolution?</p> <p>Darwin and the Galapagos Finches In this lesson the children will learn about the Galapagos Island Finches and what Darwin learnt from them. They will then go on to simulate this adaptation by planning in brief and carrying out a 'beak' investigation, finding out which of the three beaks was best at picking up which size of seed.</p> <p><i>Children will record an outline of their investigation and record their forms in a table. Children will then record which 'beak' was best at picking up which type of seed. This should help them understand why birds had to adapt via the processes already taught in this unit.</i></p>

Brough Primary School – Curriculum Intention Plan 2023 - 2024



<p>5</p>	<p>Learning Objective: I recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Key Knowledge: I know genes are the things in your DNA that make you how you are, and that some genetic characteristics, such as eye colour and blood type, can be inherited from your parents. Parents and offspring vary, because not all genes are passed down. Siblings will therefore look similar, but not identical.</p> <p>Enquiry Type: Observing closely, using simple equipment.</p>	<p>Recap – Why did the Galapagos Island finches have different beaks? What did you learn about ‘beaks’ through your investigation? What are genes?</p> <p>Genetics & Parents and their Offspring In this lesson the children will be introduced to genetics and understand how offspring inherit their parents’ qualities. They therefore look similar but are not identical.</p> <p><i>Children look at the Beckham family and try to identify which characteristics have been inherited from each parent.</i></p>
<p>6</p>	<p>Learning Objective: I recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Key Knowledge: Fossils are any preserved remains or traces of a living thing from a previous geological age. Fossilisation occurs when the remains of a plant or animal decay and are replaced with minerals from the ground water, or a cast fossil is made</p>	<p>Recap – What is a fossil? Has anyone ever found a fossil? Can you remember how fossils form?</p> <p>Fossils and the Fossil Record Children will recap what fossils are and how they are formed before considering how they can help us to understand evolution.</p> <p><i>Children look at photographs of horse skulls before looking at how they have changed over the past 60 million years. They work together to list how the horse has evolved over those 60 million years. They then think (excepting the influence of man) why they think extinction might occur.</i></p>

Brough Primary School – Curriculum Intention Plan 2023 - 2024



	<p>when the space is filled with sediment. Fossils help us understand how life has changed on Earth over many millions of years.</p> <p>Enquiry Type: Observing closely, using simple equipment. Identify scientific evidence that has been used to support or refute ideas or arguments.</p>	
7	<p>Learning Objective: To demonstrate what has been learnt about evolution and inheritance.</p>	<p>ASSESSMENT LESSON</p> <p style="color: red;">Children complete short formative assessment.</p>

Learning Outcome/product

Children have explored how animals and plants are adapted to the environment in which they live. They will learn that adaptations occur over time and that may lead to a species evolving. Children will have considered how certain adaptations occur in response to environmental conditions. They will learn about natural selection and how this links to inheritance and how some characteristics are inherited from parents and some are not. Children will consolidate previous learning on fossilisation and understand how studying fossils has helped explain the theory of evolution.

Assessment records	List only those children who have not achieved the expected outcomes.