Year 6
SPRING 1
SCIENCE – EVOLUTION AND INHERITANCE

Our JOY Curriculum

J- Jesus
Instilling values of:
Trust, Responsibility, Truth, Compassion, Thankfulness, Respect

O- Others
British Values :Liberty, Tolerance, Mutual Respect, Democracy, Rule of Law
Environment
Curiosity

Y- Yourself
New knowledge and skills gained
Well-being
Aspirations

Enrichment

Bring in photos of parents at the same age as children to compare features that have been inherited!

Think like a Scientist by:

Enquiry: Observing over time; identifying and classifying; comparative and fair testing; research, pattern seeking

Skills: Ask questions and plan enquiry; set up enquiry; observe and measure; record; interpret and report; evaluate

National Curriculum Coverage

- 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.

Key Vocabulary

Offspring, vary, characteristics, suited, adapted, environment, inherited, species, fossils

Prior learning

- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. (Y2 - Living things and their habitats)
- Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)
- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)
- Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks)
- Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)
- Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5)

Future Learning

- Heredity as the process by which genetic information is transmitted from one generation to the next. (KS3)
- A simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model. (KS3)
- The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection. (KS3)
- Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction. (KS3)

Key Knowledge	Key Vocabulary	Lesson Sequence (6)
Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Children need pictures of them and their parents at a similar age.	**Inheritance** **Variation** **Characteristics** Offspring Traits	Revisit: Teach: What is inheritance and variation. Go through PPT. Apply: Children to look at pictures of themselves and their parents and consider characteristics they have inherited. Plenary: Share photos and what children think they have inherited. Show the plenary slide explaining the differences between these hybrid animals and true cross-breeds.
Animals and plants are adapted to suit their environment in different ways.	**Environment** **Characteristics** Traits Advantageous Disadvantageous	Revisit: What is inheritance and variation. Teach: Look at different animals and discuss their environment and the characteristics they need in order to survive in that environment. Apply: Match animals to the correct environment and write down advantageous characteristics of that animal living there in order to survive. Plenary: Show the Plenary slide with a photograph of an entrance to an underwater sea cave. Children are to imagine what it would be like inside the cave; write some describing words around the photograph. What sort of characteristics do you think would be advantageous for an organism living in this environment?
Adaptation of plants and animals to suit their environment may lead to evolution. MAY NEED A DOUBLE LESSON FOR THIS.	**Adaptation** **Evolution**	Revisit: Show environments and get children to describe the type of creature to live there because of their characteristics. Teach: Look at the process of inheritance and that this is part of a bigger process called evolution. Apply: MOTH STORY AND STORY BOARD. Plenary: Look at other examples of adaptation – Galapagos tortoises.
How the work of scientists has helped develop our understanding of the process of evolution.	Scientists **Evolution** Classification **Species**	Revisit: 5 mins to recall the main facts from the story of the moths. Teach: Explore the work of biologist Carl Linnaeus and Charles Darwin Apply: Research the life and work of Charles Darwin – create a fact file. Plenary: Use the words on the board to make a statement about todays learning.
Living things have changed over time and that a number of factors can affect a species' evolution.	**Mutation** External factors Fossils Palaeontologists	Revisit: 5 facts about Charles Darwin. Teach: Explore the question – why do species change over time. Look at how environments change species over time. Palaeontologists and fossils. Apply: Prepare a speech about how fossils are made in a group. Record if time. Use fossil information sheet and ipads. Plenary: Watch speeches.
Humans have evolved over time, and how human behaviour can affect change in species over time.	**Characteristics** Population **Environment** Human behaviour **Species**	Revisit: How are fossils made? Teach: Explain how humans have spread over time to inhabit different environments all around the world. Human behaviour has had a significant effect on the evolution of other species. Apply: Discussion cards – work in groups to create an answer to share with the class / work individually and record in books. Encourage chd to back up with evidence from their science learning. Plenary: Share opinions.
Assessment and quiz.		Plan Bee end of unit quiz.

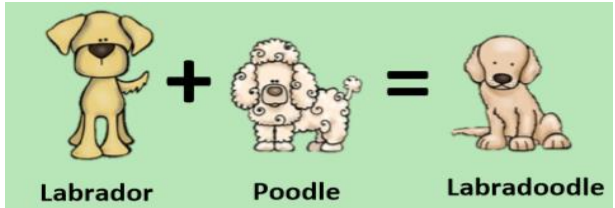
Evolution and Inheritance –Year 6
Spring 1

We are learning about how characteristics are passed from one generation to the next and how species have adapted to suit their environments. We will also explore the process of natural selection, and how our understanding of the process of evolution has developed over time thanks to the work of scientists and palaeontologists.

Key Vocabulary	Definition
Inheritance	The process by which genetic information is passed on from parent to child
Variation	A slightly different version of something, distinct from other lifeforms.
Characteristics	A notable feature of an organism.
Species	A group of animals or plants that are similar and can produce offspring together.
Environment	All the factors that affect the life of an organism.
Evolution	The theory that all the kinds of living things that exist today developed from earlier types.
Adaptation	Characteristics that an organism has evolved to have to adjust to a particular environment.
Mutation	A mistake or a change in a living thing's DNA.

INHERITANCE

Whilst survival is key in evolution, it is only part of the picture. Reproduction is the more important factor in driving evolution. When organisms reproduce they produce offspring, which will share the characteristics of their parents. **This is called inheritance.** Inheritance is why you share similar features to both your parents (sometimes more one than the other). It worth noting that which characteristic are inherited is largely random.



A labradoodle offspring shares characteristics from both of its Labrador and poodle parents.

ADAPTATIONS

An adaptation is a characteristics that increases an organism chances of surviving and reproduci (produce its own offspring). For example:

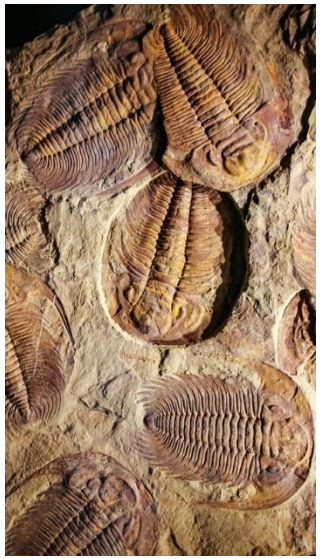

A snake's hinged jaw allows it to eat larger prey like rodents and frogs


The more attractive a peacock's tail - the more likely it is to get a mate


A polar bear's thick fur (among other adaptions) allow it to survive in the Arctic

Fossils

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.



Assessment		
Key Learning	• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • Animals and plants are adapted to suit their environment in different ways. • Adaptation of plants and animals to suit their environment may lead to evolution. • How the work of scientists has helped develop our understanding of the process of evolution. • Living things have changed over time and that a number of factors can affect a species' evolution. • Humans have evolved over time, and how human behaviour can affect change in species over time.	
Emerging	Expected	Exceeding
<u>Additional comments</u>		