Year F Science Long Term Plan

Our Rationale - At Courthill we believe that the purpose of Science is to encourage children to question how and why things are and how they happen. We want our pupils to question the world around them and to think critically. We believe that a high-quality science education provides the children the foundations for them to achieve these skills. Science has impacted the world in many ways, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key knowledge and concepts, pupils will be encouraged to understand how science can be used to explain what is happening, predict what they think will happen and analyse results. We want our children to leave us with the 'Big Idea' that there are a wide variety of living things which have similar and different characteristics and need different conditions to thrive. The other 'Big Idea' is that there are different materials that are made out of particles; have different properties and are used for different things
Our aims are to:

- Provide an exciting and though-provoking curriculum that promotes and satisfies their curiosity
- Encourage children to question, explore and observe, so that they can make observations about themselves and their environment
- Help children to develop the skills needed to find out answers to their questions
- Develop positive attitudes to science and increase individual's scientific knowledge
- Encourage children to be open-minded and consider other's thoughts and ideas
- Develop children's growth mind set and explore alternative ways to find out their answers whilst supporting them to work collaboratively and independently
- Develop a confidence to broaden their vocabulary and use appropriate scientific language
- Develop an ability to interpret findings critically and make links to what they already know about the world around them
- Develop skills of investigation – including observing, measuring, predicting, hypothesizing, experimenting, communicating, interpreting, explaining and evaluating
- Foster concern about, and active care for our environment
- Learn about Scientists eg David Attenborough

Our main aim at Courthill infant school is to develop children's knowledge, skills and understanding. We encourage children to ask as well as answer scientific questions about not only about what they do not know but also looking at the things they think they know already. They use computing within the lessons where it enhances their learning. We try to encourage a love of learning by using many creative skills for example role-play and art and discussions. They engage in a wide variety of problem solving activities across all areas of the curriculum. Wherever possible, the children are involved in 'real' scientific activities and investigations, and making links with other curriculum areas to maximise their learning opportunities. We utilise the environment around us with walks to the park to look at the changes through the seasons to trips to the Science museum for some hands on experience on a grander scale and celebrate all things Science with focused topics and visitors. At Courthill Infant School we strive to provide all pupils with a broad and balanced curriculum that meets the specific needs of individual pupils with suitable challenge. Our curriculum aims to respond to pupils' diverse needs across the school and to overcome any barriers to their learning.
Key knowledge and skills have been identified in **bold** with the expectation that all pupils will achieve these outcomes by the end of the year. We strive to address the key objectives through differentiated questioning, demonstrating and scaffolding, as well as using different approaches to teaching and learning to overcome barriers.

Term	Autumn	Spring	Summer
Big idea	There are a wide variety of living things which have similar and different characteristics and need different conditions to thrive (Living Things) That there are different materials that are made out of particles; have different properties and are used for different things (Materials)	There are a wide variety of living things which have similar and different characteristics and need different conditions to thrive (Living Things - humans) That there are different materials that are made out of particles; have different properties and are used for different things (Materials)	There are a wide variety of living things which have similar and different characteristics and need different conditions to thrive (Living Things – plants and animals)
Knowledge and facts (EYFS ELG links)	UW – The Natural World ELG: Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. Know they must not look at the sun directly - light from the sun can be dangerous Know all objects have a shadow(in the daytime) Know that their shadows can change e.g. different size / shapes Know that the sun gives us light (light source) Identify different features outdoors eg *cold, damp, shady warm* areas.	UW – The Natural World ELG: Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them **-Know that things that are alive, change over time** -Know some of the differences between babies and adults (size, colours can change etc) -Know the names of some baby animals e.g. chick, tadpole **Know basic hygiene**, eg wash hands. Name ***head, hands, arms, legs, , face, ears, eyes, hair, mouth, nose*** -Know some of the differences between babies and adults e.g babies can't talk or walk -Know that animals, like humans have places that they like to live.	UW – The Natural World ELG: Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. **-Plants need water** -Name simple plants - s**unflower**, lavender, daffodil -Know that things that are alive, change over time

	Understand the effect of changing seasons on the natural world around them. **-Know it is cold in winter and sometimes snows** -Know we wear warm clothes in winter **-Know it is often warm in summer,** we often wear shorts and t shirts. **-Know we need to wear suncream to stop our skin burning** in the summer (and other times when it is hot and the sun is out e.g. early Autumn/late Spring) **Know that some materials float and others sink.** Know wood floats and stone sink Recognise plastic, glass, wood and stone as materials	**-Know that a place can be home to lots of different animals of different sizes (e.g. insects – mammals)** -Know some names for animals within a studied place (habitat) e.g. woodlouse, rabbit, butterfly	
Context	Magical Me – Looking at themselves and where they live, buildings - materials Bright Sparks – light, dark, shadows, seasons	Once upon a time – buildings and materials (three little pigs) Billy Goats Gruff – floating and sinking When I grow up I want to be – Drs and nurses, health care	Roots shoots and Muddy boots – growing, seasons, bugs habitats, life cycles, Jack and the beanstalk growing Animals past and present – environmental impact