Year 1 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 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Big idea	There are a wide variety of living things which have similar and different characteristics and need different conditions to thrive (Living Things)	There are a wide variety of living things which have similar and different characteristics and need different conditions to thrive (Living Things)	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)	There are a wide variety of living things which have similar and different characteristics and need different conditions to thrive (Living Things)
Knowledge and facts (NC)	**To know that plants are living things and grow** To know that trees are types of plants To know the name of plants around the school; sunflower, holly bush, oak tree, lavender, conifer To know that fruit and vegetables grow from plants **To know that plants have a stem/trunk, roots, leaves and flowers (blossom)/fruit** To know that this is the same for all trees and plants To know trees can be deciduous and evergreen and what this means**observing closely, using simple equipment** **identifying and classifying**	-Name ***head hands, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, nose, teeth, tongue*** -Have an awareness that we also have parts inside our body - bones, heart, lungs, blood. **-Know that eyes are associated with sight, ears with sound, nose with smell, tongue with taste and skin with touch and that these are all our senses** -Know how to keep our teeth clean - how many times a day for how long. -To know what keeps our body healthy - sleep, diet, exercise, handwashing and being hygienic **asking simple questions and recognising that they can be answered in different ways** **gathering and recording data to help in answering questions** **performing simple tests**	**Name at least one *fish, amphibian*, and *reptile*.** **Identify *cow, dog, cat, pig, blackbird, sparrow,*** **Identify simple differences between animals –** eg legs/no legs*, wings,* ***feathers, fur****, scales, beak*, **what they eat**. Know that herbivorous animals eats plants; a carnivorous animal eats other animals; omnivorous animals eat both animals and plants -Know that fish, amphibians, reptiles, birds and mammals are similar in that they have internal skeletons and organs; these are known as vertebrates, which means they are animals that have a backbone -Know that fish are different in having gills so that they can breathe underwater and scaly skin -Know that amphibians are different in that they begin their lives with gills but then develop lungs and breath on land -Know that reptiles are different in that they breath air **and** have scaly skin -Know that birds are different to other animals in that they have feathers and wings -Know that mammals are different to other animals in that they have fur/hair and they feed milk to their young.**using their observations and ideas to suggest answers to questions**	**Name objects and then say what they are made of**, covering **wood, plastic, *glass, metal, water and rock****, brick, paper, fabric.* Know there is a difference between an object and the material it is made from. Know that materials can be hard, soft, strong, weak, absorbent, heavy, light, solid and runny, smooth and rough; these descriptions denote the properties of a material Say whether a material is ***hard/soft;*** *stretchy/stiff; shiny/dull rough/smooth;* ***bendy/not bendy****;* ***waterproof/not waterproof****; absorbent/not absorbent.***using their observations and ideas to suggest answers to questions** **gathering and recording data to help in answering questions** **performing simple tests**	**That we live on planet earth.** **In our solar system is a sun that creates seasons these are different in each country, but Britain has 4 distinct seasons.** **Say what differences there are between the four *seasons*.** -Know the sun gives us warmth and light Observe and describe weather associated with the seasons and how day length varies Know that days are longer in the summer and shorter in winter Know that weather changes through the year, getting hotter in the summer and colder in the winter Know that the winter is likely to bring ice on the ground when water freezes due to the cold Link to plants and deciduous and evergreen **using their observations and ideas to suggest answers to their questions** **observing closely, using simple questions**	**Name at least one *fish, amphibian*, and *reptile*.** **Identify *cow, dog, cat, pig, blackbird, sparrow,*** **Identify simple differences between animals –** eg legs/no legs*, wings,* ***feathers, fur****, scales, beak*, **what they eat**. Know that herbivorous animals eats plants; a carnivorous animal eats other animals; omnivorous animals eat both animals and plants **identifying and classifying using their observations and ideas to suggest answers to questions**
Context	Plants focus Looking at plants Naming plants Identifying parts of plants	Human focus	Animals	Materials	Seasons, plants, features	Animals