St James' Church of England Primary School
Key Learning in Science – Plants

Key Learning: Plants		
Key Learning	**Notes and Guidance (Non-statutory)**	**Working Scientifically (Featured Skills)**
Pupils should be taught to: **KS1: Year 1 – Plants** ▫ **Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.** ▫ **Identify and describe the basic structure of a variety of common flowering plants, including trees.**	**KS1: Year 1 – Plants** *Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted.* *They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).*	Pupils might work scientifically by: **KS1: Year 1 – Plants** • *Observing closely, perhaps using magnifying glasses.* • *Comparing and contrasting familiar plants: describing how they were able to identify and group them.* • *Drawing diagrams showing the parts of different plants including trees.* • *Keeping records of how plants have changed over time, for example the leaves falling off trees and buds opening; and comparing and contrasting what they have found out about different plants.*
KS1: Year 2 – Plants ▫ **Observe and describe how seeds and bulbs grow into mature plants.** ▫ **Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.** ▫ Plants are living and eventually die. ▫ (NB: it is important to note that some plants reproduce without seeds but this more abstract concept will be introduced in UKS2)	**KS1: Year 2 – Plants** *Pupils should use the local environment throughout the year to observe how different plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as the process of reproduction and growth in plants.* ***Note:** Seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them.*	**KS1: Year 2 – Plants** • *Observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth.* • *Setting up a comparative test to show that plants need light and water to stay healthy.*

Key Learning (continued)	Notes and Guidance (continued) (Non-statutory)	Working Scientifically (continued) (Featured Skills)
LKS2: Year 3 – Plants ▫ **Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.** ▫ **Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.** ▫ **Investigate the way in which water is transported within plants.** ▫ **Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.** ▫ Roots grow downwards and anchor the plant. ▫ Water, taken in by the roots, goes up the stem to the leaves, flowers and fruit. ▫ Nutrients (not food) are taken in through the roots. ▫ Stems provide support and enable the plant to grow towards the light. ▫ Plants make their own food in the leaves using energy from the sun. ▫ Flowers attract insects to aid pollination. ▫ Pollination is when pollen is transferred between plants by insects, birds, other animals and the wind. ▫ The transferring of pollen is required for new seeds to be produced. ▫ (Fertilisation occurs in the ovary of the flower – Y5 life cycles). ▫ (Seeds are formed as a result of fertilisation –Y5 life cycles).	**LKS2: Year 3 – Plants** *Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.* ***Note:** Pupils can be introduced to the idea that plants can make their own food, but at this stage they do not need to understand how this happens.*	**LKS2: Year 3 – Plants** • *Comparing the effect of different factors on plant growth, for example the amount of light, the amount of fertiliser.* • *Discovering how seeds are formed by observing the different stages of plant cycles over a period of time.* • *Looking for patterns in the structure of fruits that relate to how the seeds are dispersed.* • *Observing how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.*

▫ Many flowers produce fruits which protect the seed and/or aid seed dispersal. ▫ Seed dispersal, by a variety of methods, helps ensure that new plants survive. ▫ Plants need nutrients to grow healthily (either naturally from the soil or from fertiliser added to soil).		
UKS2: Year 5 – Living Things and their Habitats – see Environment unit Observing life cycles of plants in the environment.	**UKS2: Year 5 – Living Things and their Habitats – see Environment unit** Observing life cycles of plants in the environment.	**UKS2: Year 5 – Living Things and their Habitats – see Environment unit** Observing life cycles of plants in the environment.

Key

- ▪ Solid Square Bullet Points (plus **bold text)** – NC2014 statutory requirements for Knowledge and Conceptual Understanding
- ▫ Hollow Square Bullet Point – Suggested additional learning to consider from Lancashire
- • Solid Round Bullet Points – NC2014 non-statutory 'Working Scientifically' suggestions
- ○ Hollow Round Bullet Point – Further suggestions for 'Working Scientifically' opportunities

Green Text – Used to highlight the suggested 'Working Scientifically' skill or enquiry to focus on

Blue Text – Used to highlight non-statutory opportunities for studying a famous scientist (past or present)