Key Learning in Science: Year 3

Please Note: There should be plenty of opportunities throughout the year for children to use the school/local environment to observe plant lifecycles with a particular focus on the different parts of a plant (e.g. comparing fruits and seeds and looking for examples of pollination). This could be done through an ongoing/monthly nature journal to observe, record and review over a period of time.

Plants – Functions of Parts of a Plant)

Pupils should be taught to:

- 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.
- Fertilisation occurs in the ovary of the flower.
- Seeds are formed as a result of fertilisation.
- 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).

Notes and Guidance (non-statutory):

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.

Pupils might work scientifically by:

- 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.
- Observing how water travels up the stem to the flowers.

Health - Health/Nutrition)

Pupils should be taught to:

- Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.
- An adequate and varied diet is beneficial to health (along with a good supply of air and clean water).
- Regular and varied exercise *from a variety of different activities* is beneficial to health (focus on *energy in versus energy out*. Include information on making informed choices).

Notes and Guidance (non-statutory):

Pupils should continue to learn about the importance of nutrition

Pupils might work scientifically by:

- Comparing and contrasting the diets of different animals (including their pets).
- Decide ways of grouping them according to what they eat.
- Researching different food groups and how they keep us healthy.
- Designing meals based on what they find out.

Animals - Skeletons and Movement)

Pupils should be taught to:

- Identify that humans and some other animals have skeletons and muscles for support, protection and movement.
- Identify animals (vertebrates) which have a skeleton which supports their body, aids movement & protects vital organs (be able to name some of the vital organs).
- Identify animals without internal skeletons/backbones (invertebrates) and describe how they have adapted other ways to support themselves, move & protect their vital organs.
- Know how the skeletons of birds, mammals, fish, amphibians or reptiles are similar (backbone, ribs, skull, bones used for movement) and the differences in their skeletons.
- Know that muscles, which are attached to the skeleton, help animals move parts of their body.
- Explore how humans grow bigger as they reach maturity by making comparisons linked to body proportions and skeleton growth – e.g. do people with longer legs have longer arm spans?
- Recognise that animals are alive; they move, feed, grow, use their senses and reproduce.

Notes and Guidance (non-statutory):

Pupils should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions.

Pupils might work scientifically by:

- Identifying and grouping animals with and without skeletons.
- Observing and comparing their movement.
- Exploring ideas about what would happen if humans did not have skeletons.