SBSP PROGRESSION OF COMPONENT KNOWLEDGE THROUGH SCIENCE UNITS

BIOLOGY – PLANTS

Early Learning Goal:

- Begin to understand the need to respect and care for the natural environment and all living things.
- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Plant seeds and care for growing plants.
- Understand the key features of the life cycle of a plant.

Reception Component Knowledge:

- I can explore the season of Autumn including plants, trees and natural features.
- I can observe and draw plants. Including those we have planted (beanstalks).
- I can plant seeds and take care for growing plants.
- I know that a plant needs sun, air and water to grow.
- I can make observations of plants and animals, drawing pictures and sharing comments.

Year 1 NC links:

- 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

Year 1 Component Knowledge

- Identify a plant
- Explain how to plant a seed
- Predict what might happen to their seed
- Say what is the same and what is different between 2 flowering plants
- Correctly label the parts of a plant
- Correctly label the parts of a tree
- Make careful observations
- Group plants according to their features
- Record their ideas and provide explanations
- Know that deciduous trees change throughout the year
- Explain how a deciduous tree changes through the year
- Make comparisons between a deciduous tree and an evergreen tree
- Understand that plants are a source of food
- Make predictions
- Record their findings in a table
- Understand that plants grow over time
- Record the growth of a plant
- Measure the height of a plant and record how much it has grown

Working Scientifically Component Knowledge

- Asking simple questions
- Observing closely, using simple equipment
- Using their observations and ideas to suggest answers to questions

- Identifying and classifying
- Comparing and contrasting familiar plants
- Drawing diagrams showing the parts of different plants, including trees
- Gathering and recording data to help answer questions
- Describing how they were able to identify and group different plants
- Comparing and contrasting what they have found out about different plants

Key Vocabulary

- predict, plant, tree, seed, oak
- flower, root, leaf, petal, stem
- weed, daisy, dandelion, wild, buttercup
- evergreen, deciduous, seasons, bush, branch
- vegetable, farm, tractor, supermarket, fruit
- observe, adult plant, seedling, young, plant, growth

Year 2 NC links:

- 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

Year 2 Component Knowledge

- Observe and talk about seeds and bulbs
- Draw the inside of a seed and a bulb
- Explain the difference between a bulb and a seed
- Set up an experiment to find out what plants need to grow
- Make a prediction
- Set up a fair test
- Understand that plants need space, water, sunlight and a suitable temperature to grow
- Explain how a plant makes its own food through the process of photosynthesis
- Explain that plants use carbon dioxide, sunlight and water to create glucose
- Understand the life cycle of a plant
- Produce a diagram to explain the life cycle of a plant
- Provide scientific explanations of the life cycle of a plant
- Record results and write a simple conclusion
- Compare the results to their prediction
- Explain why their plant did or did not thrive using the control plant as a comparison
- Identify and sort plants according to their habitats
- Describe what conditions might be like for plants in their habitats
- Explain how plants adapt to suit their environment

Working Scientifically Component Knowledge

- Identifying differences, similarities or changes related to simple scientific ideas and processes
- Observing and recording, with some accuracy
- Asking simple questions and recognising that they can be answered in different ways
- Performing simple tests
- Using their observations and ideas to suggest answers to questions
- Gathering and recording data to help in answering questions
- Identifying and classifying

Key Vocabulary

- compare, bulb, seed, growth, plant
- investigate, experiment, method, predict, control
- carbon dioxide, photosynthesis, glucose, oxygen, energy
- germination, seedling, life cycle, pollination, reproduction
- crop, thrive, insulate, manure, healthy
- forest, desert, survive, adapt, condition

Year 3 NC links:

- 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

Year 3 Component Knowledge

- Plan and set up an experiment that compares the effect of different factors on the growth of a plant
- Set up a fair test
- Ask scientific questions and suggest different ways to answer them
- Identify the parts of a plant
- Draw and label a diagram to show the parts of a plant
- Describe the functions of a flowering plant
- Understand how water is transported within plants
- Create an observational drawing to show how water is transported through a plant
- Describe how water is transported through a plant
- Identify the reproductive parts in a flower
- Explain the functions of the reproductive parts in a flower
- Explain how flowering plants reproduce
- Understand that seed dispersal is a way in which some plants reproduce
- Provide an explanation, both written and verbal, to show how plants reproduce
- Use scientific language to describe how plants reproduce
- Explain the results of an experiment
- Write up the results of an experiment
- Provide a conclusion using scientific language and diagrams

Working Scientifically Component Knowledge

- Asking relevant questions and using different types of scientific enquiries to answer them
- Setting up simple practical enquiries and comparative and fair tests
- Making systematic and careful observations
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Key Vocabulary

- potassium, fertiliser, nutrients, nursery, stunted
- chlorophyll, photosynthesis, UV light, xylem, stomata
- transpiration, phloem, absorb
- stigma, filament, reproduction, style, anther
- pollen, nectar, pollination, pollinator, seed dispersal

KS3 NC links:

Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.