PENTECOST TERM 1 SCIENCE – Year 3 - Medium Term Planning – BIOLOGY: PLANT NUTRITION AND REPRODUCTION		
LESSON 1	**LESSON 2**	**LESSON 3**
LEARNING INTENTION: To know that roots anchor the plant and transport nutrients from the ground. **Disciplinary Knowledge:** • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. **Aim:** Develop scientific knowledge and conceptual understanding through the specific disciplines of biology.	**PRE PREPARED LESSON – CELERY STICKS** **LEARNING INTENTION:** To know that water is transported in plants through the stem. **Disciplinary Knowledge:** • Investigate the way in which water is transported within plants. • Make careful observations and, where appropriate, take measurements using standard units, using a range of equipment. **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	**LEARNING INTENTION:** To know that leaves have two main functions. **Disciplinary Knowledge:** • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • Report on findings from enquiries, including oral and written explanations. **Aim:** Develop scientific knowledge and conceptual understanding through the specific disciplines of biology.
Key Vocabulary: **root, anchor, plant, transport, water, nutrients**, fibrous roots, taproots, lateral roots, aerial roots,	**Key Vocabulary:** xylem, **transpiration, vessels, plant stems, nutrients, water**	**Key Vocabulary:** **photosynthesis,** functions, distribution, transpiration, **sunlight, energy**, nutrients, **leaves**

Recap & retrieval • Recap parts of plant (recap Y1 & Y2)	**Recap & retrieval** • The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant.	**Recap & retrieval** • The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant. • Water is transported in plants from the roots, through the stem and to the leaves, through tiny tubes called xylem.
Key Knowledge: **Child:** • The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant. • There are two main types of root systems – taproots and fibrous roots. **Teacher:** • In a taproot system, a primary root grows deep into the soil. • Lateral roots covered in tiny root hairs grow out from the sides of the taproot and take in water and nutrients from the soil. • A fibrous root system grows just under the soil's surface from the plant's stem. • Fibrous roots are covered in root hairs and spread far from the plant to take in water and nutrients. • Aerial roots are unusual because they grow above ground.	**Key Knowledge:** **Child:** • Water is transported in plants from the roots, through the stem and to the leaves, through tiny tubes called xylem. • A stem also supports the flowers to attract pollinators and the leaves so they can capture sunlight. **Teacher:** • Vascular plants contain tubes called vessels. • Xylem carry water and nutrients. • Phloem carry food made by the plant's leaves to where it is needed.	**Key Knowledge:** **Child:** • Leaves have two main functions. • Leaves capture energy from sunlight to make food through the process of photosynthesis. • The structure, shape, size and position of leaves help them carry out these functions. **Teacher:** • A prediction is a best guess for what might happen in an investigation based on some prior knowledge • Leaves lose water in a process called transpiration, which causes water and nutrients to enter the root and move through the plant

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LESSON 4	**LESSON 5**	**LESSON 6**
LEARNING INTENTION: To know that a flower has different parts and each part has a function. **Disciplinary Knowledge:** • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. • Report on findings from enquiries, including oral and written explanations. **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	**LEARNING INTENTION:** To know that pollination and seed dispersal is part of plant reproduction. **Disciplinary Knowledge:** • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. • Report on findings from enquiries, including oral and written explanations. **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	**LEARNING INTENTION:** To know that requirements of plants for life and growth can vary from plant to plant. **Disciplinary Knowledge:** • Set up simple practical enquiries, comparative and fair tests, with support. • Gather, record, classify and present data in a variety of ways. • Record findings using simple scientific language, drawings, labelled diagrams and tables. • Use results to draw simple conclusions and raise further questions. **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
Key Vocabulary: **carpel, petal, stamen, sepal, anther**, filament	**Key Vocabulary:** **life cycle, pollination, seed dispersal,** germination, flower production, **seed formation**	**Key Vocabulary:** **air, light, water, nutrients, soil, room, growth**

Recap & retrieval	Recap & retrieval	Recap & retrieval
• The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant. • Water is transported in plants from the roots, through the stem and to the leaves, through tiny tubes called xylem. • Leaves capture energy from sunlight to make food through the process of photosynthesis.	• The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant. • Water is transported in plants from the roots, through the stem and to the leaves, through tiny tubes called xylem. • Leaves capture energy from sunlight to make food through the process of photosynthesis. • The parts of a flower include the sepal, petal, stamen and carpel.	• The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant. • Water is transported in plants from the roots, through the stem and to the leaves, through tiny tubes called xylem. • Leaves capture energy from sunlight to make food through the process of photosynthesis. • The parts of a flower include the sepal, petal, stamen and carpel. • The processes of a plant's life cycle include germination, flower production, pollination, seed formation and seed dispersal.
Key Knowledge: **Child:** • Flowers have one main function – to reproduce. • Flowers are important in the life cycle of flowering plants. • Different parts of a flower have different functions. • The parts of a flower include the sepal, petal, stamen and carpel. **Teacher:** • Sepals protect the flower bud as it grows, bending back when the flower opens. • Petals attract pollinators with their bright colours, scent, and a sweet liquid called nectar. • The stamen is the male part of the plant.	**Key Knowledge:** **Child:** • All plants have a life cycle. • The processes of a plant's life cycle include germination, flower production, pollination, seed formation and seed dispersal. • After pollination, seeds form in the carpel's ovary and are dispersed. **Teacher:** • Pollination is the process where pollen grains are transferred from the stamen of one flower to the carpel of another of the same type. • Insects and the wind can transfer pollen from one plant to another (pollination). • A pollinator is an animal that pollinates flowering plants.	**Key Knowledge:** **Child:** • Most plants take in water and nutrients from soil. • Different plants have different requirements to grow healthily. • This can depend on where they naturally grow. **Teacher:** • Orchids live high up on rainforest plants. • Their roots don't reach the soil, so they take in water and nutrients from the moist, tropical air. • Most plants need a regular supply of water, but cacti thrive in dry places with little rainfall. • Their stems swell and store water when it is available to use in times of drought.

• The male stamen includes the anther and the filament. • The female carpel consists of the stigma, style and ovary. • Male pollen grains are produced at the top of the stamen in the anther. • The carpel is the female part of the plant. • Pollen travels into the carpel to make seeds. • The carpel of some plants can swell into a fruit.	• Some plants are pollinated by the wind. • Animals, wind, water and explosions can disperse seeds away from the parent plant (seed dispersal).	• Many plants need sunny conditions to survive but the hart's tongue fern thrives in the shade. Its leaves are broad and thin to capture as much sunlight as possible.
Assessment Cumulative quiz. Retrieval practice.		