Pioneer Federation
Medium term plan
LKS2- Cycle 2, Term 4
Science

Subject: Science

Key Concept/ Theme:

Prior Learning links:

Year 1	• Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen • Identify and describe the basic structure of a variety of common plants including roots, stem/trunk, leaves and flowers.
Year 2	• 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.

Vocabulary:

Parts of plants – roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs and twigs

Parts of a flower – petal, stamen (anther + filament), carpel (stigma + style + ovary + ovule)

Processes – pollination, fertilisation, germination, seed dispersal, life cycle

School specific areas to cover (where applicable):

	Deeper learning question for the term: Why do all plants grow in different ways? **Prior learning reconnection (year group, cycle & term):** R- T5, Y1- cycle 1 T2 and 6, Year 2 cycle 2 T2 **Enquiry skill: measuring** **LO:** Let's identify and describe the function of the roots. **Activity:** Play the crime scene game to assess knowledge at the start of the lesson Kent planning page 9. Explain that today they will be learning about the roots of a plant. Drama – Be the roots! To help to develop the children's conceptual understanding of surface area, ask a child from each group to be the plant. This child can stand up on large piece of card (the 'water'). The other children can tie different lengths of string ('roots') to his/her ankles. Encourage the children to recognise that the plant can absorb more water when it has more of its roots touching the water. Give the children the graph of root growth and ask them to interpret it explaining their understanding. (Graph below and see page 11 for more information). Set up one plant to grow roots for class to measure and plot on graph over time. **Future learning links:** This will link to living things and their inhabitants
2.	**Deeper learning question:** Why do plants need water? **Reconnection:** Why do plants have roots? **LO:** Let's investigate the ways in which water is transported within plants. Let's identify and describe the function of the stem. **Enquiry skill:** measuring and observing **Activity:**

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	Go for a walk in local area/school, children to find plants and identify what the purpose is with the stem in all their observations. They could use magnifying glasses to look closer and they could drae the stem and the leaves/ flowers attached. When back in the classroom use these observational drawings to add notes to the diagrams to explain their understanding. They could attach a photo taken if ipads taken outside. **How can we prove that stems transport water?** Place a white carnation and a stick of celery into separate containers of water. Add a dark food colouring like red or blue to the water and mark the water level on the container. Over the next several days observe what happens to the plants and the water. You may want to mark the water level each day. As the water level goes down the petals of the carnation and the leaves of the celery will begin to change to the colour of the food colourings. Draw each of the stems before and after they have been placed in the water/dye mixture. The children could also record the height of the water each day. They can explain what they think has happened.
3	**Deeper learning question:** Are all the parts of plant important? **Reconnection:** Why do plants have a stem? **LO:** Let's identify and describe the function of the flower and the function of the leaves. **Enquiry skill:** predicting and sorting classifying **Activity:** Show the children a variety of leaves- the children could do quick observational drawings of a few leaves. Explain the job of the leaves, children to label the leaves and add information to the diagrams. Ask the children now they have this knowledge, "what would happen if we covered up the leaves on a plant?" Ask the children to write a prediction explaining their reasons. Cover up the leaves of one plant you have in your class for the children to observe. Now give the children flower heads. Can they pull the flowers apart and sort the pieces into the different names- photograph evidence for books. Children can cut open an ovary to describe what can be found inside. Show how the pollen from one plant must fertilise the female parts of another plant. Use video links to show this. Find pollen in the flowers. They could investigate some flowers to find out if they can see pollen inside them- daffodils work well for this- the children could use paintbrushes. Can the children now draw their understanding using diagrams and explanations?
4	**Deeper learning question:** How do plants survive? **Reconnection:** Can you name the different parts of the flower? **LO:**. Let's learn about what plants need for life and growth (air, light, water, nutrients from soil). **Enquiry skill:** predict **Activity:** Use the experiment on page 15-16 Kent planning to investigate what happens when changing different variables when growing plants. Class to set up the experiment and children to predict and use drawings to explain their reasoning split up into the four headings: air, light, water and nutrients from soil. Class to record at end of growing- explain what they have found out from experiment.
5	**Deeper learning question:** How does pollination help within the life cycle of a plant? **Reconnection:** Why do plants need nutrients from the soil? **LO:** Let's learn about the stages of a flowers life cycle. **Activity:** Teach the children the stages of the life cycle including: germination, pollination, fertilisation and seed formation, seed dispersal. Children to act out seed dispersal in groups to show the different ways of dispersal. Children to record life cycles and detailed descriptions for each stage showing their understanding. Take photos of acting seed dispersal for books.

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6	**Trip** **LO:** Let's learn about seed dispersal. **Activity:** Visit to Wakehurst to learn more about seed dispersal.

End points:

To understand seed dispersal and how this fits into the life cycle of a plant.

To know the job of the leaves, roots, flower, and stem.

To know that water is transported through the flower.

To understand what plants need for life and growth

To predict, measure, observe, sort and classify wen learning about plants.

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