



## Stage 6: Plant Reproduction

### Learning objectives:

To explore the part that flowers play in the life cycle of flowering plants

### Stage Overview:

In this stage, the children learn about the role that the flower plays in the life cycle of a plant and begin to explore the processes of pollination and fertilisation in flowering plants. After dissecting flowers and closely examining the key parts, the children are asked to build and label a flower sculpture using recycled materials and present their learning to their peers.

### Materials needed:

- 1 flower for each pair (lilies and alstroemerias work well)
- Magnifiers
- Large strips of paper
- A range of recycled materials
- Unlabelled flower diagrams

### Presentation notes:

Slide 2: Parts of a plant and their functions revision	<ul style="list-style-type: none"> <li>- Revise previous learning on the functions of the different parts of the plants.</li> <li>- Ask the flower experts from Stage 1 to remind the class what they found out about the function of the flower.</li> </ul>
Slide 3: Seeds	<ul style="list-style-type: none"> <li>- Use the power point to give the children some questions to start their thinking</li> <li>- Explain that flowering plants reproduce using seeds. Show the children the different types of seeds on the power point. Explain that each of them has the potential to become a brand new plant and today we are going to find out how the seeds are made.</li> </ul>
Slide 4: Parts of a flower	<ul style="list-style-type: none"> <li>- Display the labelled flower diagram and talk through the names of the parts that are involved in reproduction and their functions.</li> </ul>
Slide 5: The stamen	<ul style="list-style-type: none"> <li>- The male part of the flower, the stamen, produces grains of pollen.</li> </ul>
Slide 6: The carpel	<ul style="list-style-type: none"> <li>- The carpel is the female part of the flower. It consists of the stigma, the style and the ovary which produces the ovules.</li> </ul>

Slide 7: Reproduction in plants	<ul style="list-style-type: none"> <li>- Two processes need to take place in the flower for seeds to be made: pollination and fertilisation.</li> </ul>
Slide 8-9: Pollination	<ul style="list-style-type: none"> <li>- Pollination takes place when the pollen from the stamen travels to the stigma of another flower (or the same flower).</li> <li>- This can happen when pollinators, such as insects or birds, brush against the stamen of the first flower when they are drinking its nectar. Grains of pollen brush off the top of the stamen and onto the pollinator.</li> <li>- Then, when the pollinator travels to a different flower, the grains of pollen from the first plant fall off them and stick to the sticky top of second flower's stigma.</li> </ul>
Slide 10: Fertilisation	<ul style="list-style-type: none"> <li>- Once the pollen grain has stuck to the stigma of the second flower, a pollen tube grows through the style of the carpel until it reaches the ovary which contains ovules. Fertilisation takes place when the pollen grain joins together with an ovule in the ovary.</li> <li>- The fertilised ovule will then become a seed which has the potential to grow into a new plant and the plant's lifecycle starts again.</li> </ul>
Slide 11: Practical exploration	<ul style="list-style-type: none"> <li>- Give mixed-ability pairs a flower to examine and dissect. Model identifying the male and female parts and use questioning to reinforce the purpose of each part.</li> <li>- Ask each pair to carefully dissect their flower and examine each part using a magnifier.</li> <li>- Children could then arrange each dissected part of their flower separately on large strips of paper or in their books and label them.</li> <li>- Encourage pairs to discuss the parts they are labelling and how they are involved in pollination and fertilisation while they are working.</li> <li>- When all parts are labelled, you may wish to display the children's posters on the working wall.</li> </ul>
Slide 12: Application of learning	<ul style="list-style-type: none"> <li>- Ask the children to use their learning from the lesson to work in mixed-ability groups to make a flower sculpture using recycled materials.</li> <li>- Ask the children to think carefully about how they will represent the different parts of the flower and label them clearly.</li> <li>- When their models are complete, give groups 5 minutes to plan a short presentation to explain pollination and fertilisation in flowering plants to their peers using their sculpture to demonstrate the processes.</li> <li>- Assess spoken language skills during their presentation.</li> <li>- Alternatively, use the Chatterpix Kids Ipad application to animate their flower model. The children could use the app to take a photo of their model and use the mouth function to explain the process of pollination and fertilisation.</li> </ul>
Slide 13: Vertical relay	<ul style="list-style-type: none"> <li>- Ask the children to use today's learning to complete a Vertical Relay to label a diagram of a flower.</li> <li>- Display several copies of the unlabelled flower diagrams around the classroom (one for each group).</li> <li>- Divide the children into mixed ability groups of no more than 6 children.</li> <li>- Ask then children to stand in a line in front of their group's diagram.</li> <li>- Explain that when you say go, they will be challenged to label the diagrams with any information they can remember from today's learning as quickly as they can.</li> <li>- Each child is allowed to add one piece of information before passing the pen to the next child (like a relay baton) and then moving to the back of the line.</li> </ul>

	<ul style="list-style-type: none"> <li>- Explain that this is a race and they are competing with the other teams to be the first to label the whole diagram correctly with as much information as possible.</li> </ul>
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**Links to the National Curriculum:**

Subject	Topic	Objective
Science	Plants	<ul style="list-style-type: none"> <li>- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> <li>- Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> </ul>
	Working scientifically	<ul style="list-style-type: none"> <li>- Making systematic and careful observations</li> </ul>

