St. John's Gosport Church of England Primary School - Science Knowledge Organiser

Year 4 Plant Reproduction - How do plants reproduce?

Substantive Knowledge

Flowering plants **reproduce** by the process of **pollination**.
Pollination leads to the formation of a **seed** which can grow into a new plant.
Flowering plants have evolved specific parts to carry out pollination and seed growth.
Those parts are **stamen** where pollen is produced, **stigma** where pollen is collected and the **ovaries** which contains the eggs that become a seed when the pollen travels down the stigma and meets the egg.
Flowers have **petals** that are a range of colours, patterns and smells to attract insects.
Plants and flowers look different because the pollinate in different ways.
There are two types of pollination: insect and wind.
Insect pollinated flowers are usually bright coloured and strong scents.
Wind pollinated flowers have less colourful petals and much less scent.
Plants have evolved many different ways to **disperse** their seeds.
Seed dispersal increases the chances of seeds **germinating** and growing into a mature plant.
A seed contains a miniature, undeveloped version of the plant.
They contain a food store for the first stage of growth (until the plant can make its own food).
They are surrounded with a protective coat

Disciplinary Knowledge

Making systematic and careful observations.	
Identifying differences, similarities or changes related to simple scientific ideas and processes.	
Setting up simple practical enquiries, comparative and fair tests.	

Significant Scientists

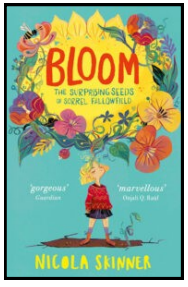
Agnes Arber (1879-1960)

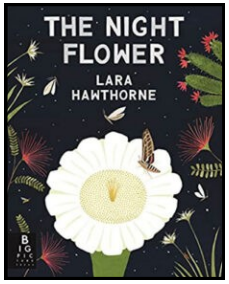
Agnes Arber was a British botanist known for her extensive research on plant anatomy. This advanced our understanding of flowers and plant reproductive structures. As the first woman botanist to be elected as a Fellow of the Royal Society, she broke barriers and paved the way for gender equality in science.

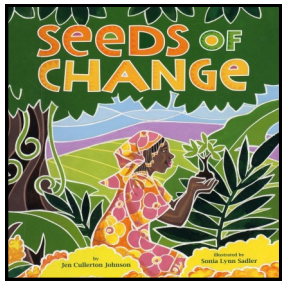
Dr Kate Hardwick (1967-)

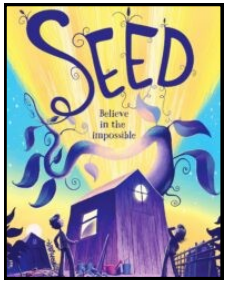
Dr Kate Hardwick is a Conservation Partnership Coordinator working to develop and maintain the Millennium Seed Bank at Kew Gardens. She is involved in several research projects that explore the use of seeds in ecological restoration, with an emphasis on tropical forests.

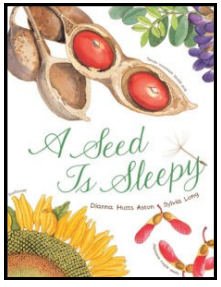
Interesting Books











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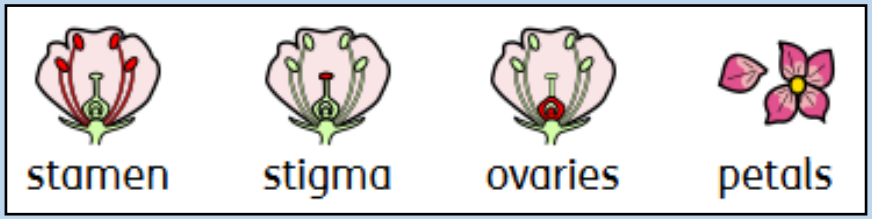
Year 4 Plant Reproduction - How do plants reproduce?

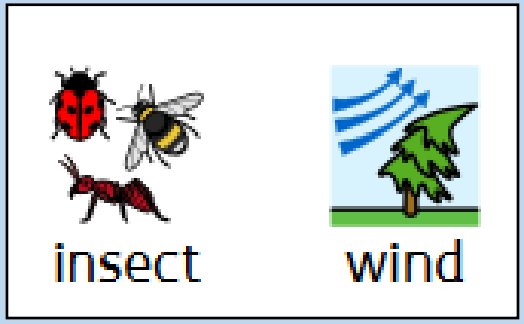
Plant Reproduction



Those parts are stamen where pollen is produced, stigma where pollen is collected and the ovaries which contains the eggs that become a seed when the pollen travels down the stigma and meets the egg.

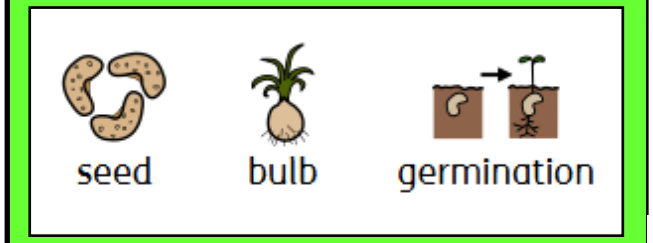
Key Vocabulary	
pollination	The transfer of pollen from one plant to another.
seed	The small, hard part of a plant from which a new plant grows.
stamen	The male part of the flower which contains the pollen.
stigma	The female part of the flower that receives the pollen.
ovaries	A female part of the plant where the pollen must reach to create the
petals	The segments of a flower that are usually brightly coloured.
dispersal	The spreading of seeds in a variety of ways.
germination	The growth of a seed into a young plant or seedling.

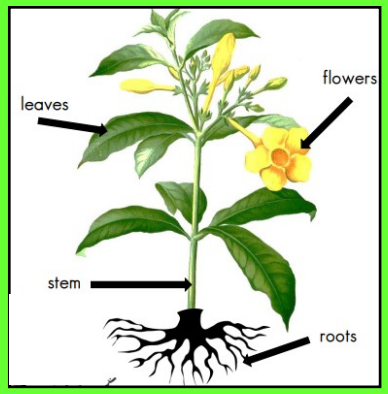
Plant Pollination

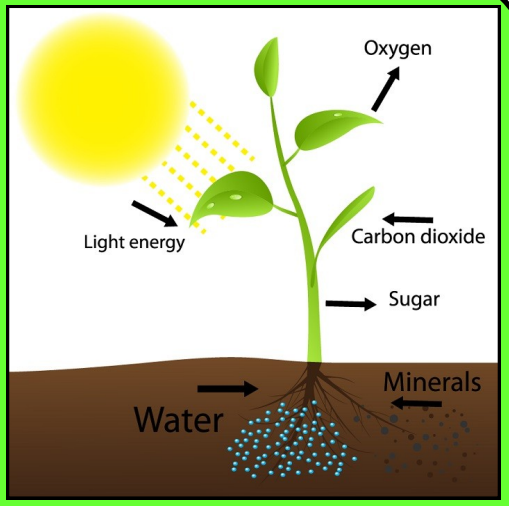


There are two types of pollination: insect and wind.

Prior Knowledge







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To survive plants, need to get water, light, the right temperature and to avoid being eaten.