

Topic:	Year group	Term
Reproduction - Summer 1 and 2	5	Summer

Background knowledge

Children should be familiar with key words such as "offspring" and "foetus". They should be able to recall that the foetus of a mammal grows inside the mother's womb and that other animals, such as birds, fish and amphibians, lay eggs instead of giving birth to live young.

Children should understand that fertilisation is the process by which a male sperm cell and female egg cell join to form a new life. They should also understand that sexual reproduction results in offspring that are not identical to the parents.

Children learn the names and functions of the specific male and female reproductive parts in plants. The female pistil is made up of the stigma, style and ovary and the female sex cells are ovules. The male stamens are made up of the anther and filament and the male sex cells are pollen.

Children should be aware that many plants cannot pollinate themselves and that they rely mainly on pollinators or wind to transfer the pollen to other plants. Once the pollen grain has attached to the stigma, it travels down the style into the ovary and joins with an ovule - this is fertilisation. The fertilised ovule will then turn into a seed, which can then be dispersed to grow into a new plant.

Common misconceptions

- Children may think that the plant part they use will determine the part of the plant that grows. For example, they might think that if they plant a leaf, then a leaf will grow.
- Children may think that reproduction must involve two parents. Explain that asexual reproduction involves just one parent.
- Children may not realise that most flowering plants have both male and female reproductive parts. Encourage them to look at the parts of the plants that they dissected in the previous step to see this.
- Children may think plants are not "alive" and therefore do not reproduce.

- Children may think that life begins once a baby is born.
- Children may think that a foetus grows in the mother's stomach rather than the womb.

What should I already know?

In Year 3, children learnt that the male parts of a flowering plant are called "stamens" and the female parts are called the "pistil".

Children should understand that plants can reproduce sexually through pollination, building on their knowledge from Year 3.

National Curriculum Objectives / Key Skills	The Journey
Describe the life process of reproduction in some plants and animals. <u>Working scientifically</u> Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory). Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts and line graphs. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. Identifying scientific evidence that has been used to support or refute ideas or arguments.	Summer 1 1. Sexual reproduction in mammals 2. Reproduction parts in plants 3. Pollination 4. Asexual reproduction 5. Plan - clone plants 6. Plant - cone plants Summer 2 1. Findings - clone plants 2. Interpret data

Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.

Using test results to make predictions to set up further comparative and fair tests.

Scientific enquiry



Outcomes

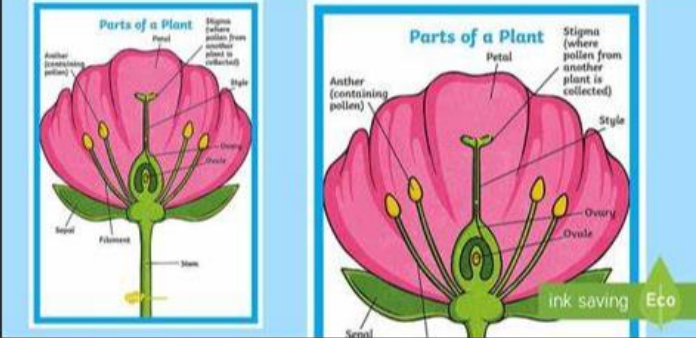
An overview of what children will know / can do

1. Sexual reproduction in mammals
2. Reproduction parts in plants
3. Pollination
4. Asexual reproduction

Working towards: I know what about reproduction in mammals. I know what plant reproduction is, naming some of the parts plants. I know what pollination is.

Expected: I can explain what reproduction in mammals is. I can explain what plant reproduction is, naming all of the parts plants. I can explain what pollination is.

Exceeding: I can explain what reproduction in mammals is, giving examples. I can explain what plant reproduction is, naming all of the parts plants. I can explain what pollination is and offer a detailed explanation with examples.

Key Vocabulary	Timeline / Diagrams
Fertilisation - the joining of a male and female sex cell to create new life Embryo - the earliest stage of development after fertilisation Sperm cells - the male sex cell that are produced in the testes Egg cells - the female sex cell that develop in the ovaries Sexual reproduction - a process of making non-identical offspring which requires two parents Anther - contains the pollen Filament - holds up the anther Ovule - the female sex cell found in the ovary of plants Stigma - the sticky part of the style, to catch pollen Style - a tube from the stigma to the ovary Ovary - contains ovules Pollen - tiny grains which carry the male sex cells in plants Stamen - the male parts of a flowering plant Pistil - the female parts of a flowering plant Pollination - the transfer of pollen from the anther of a flowering plant to the stigma of a flowering plant Clone - a plant or animal that was produced asexually and is identical to its parent	

Runner - a stem that grows horizontally along the ground and produces new clone plants Tuber - a thick stem that grows underground that produces new clone plants Bulb - a part of a plant with layers which stores food and produces new clone plants Asexual reproduction - the production of identical offspring from only one parent Cutting - a section of a plant that has been cut off a parent plant Parent plant - the plant from which offspring are grown Compost - a material containing nutrients to help plants grow	
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Key people / places

STEM scientist

Assessment questions / outcomes

