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| **Naseby Primary Academy - Science** |
| **Topic: Living things and their habitats** | **Year: 5/6** | **Strand: Biology** |



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| **What will I know by the end of the unit?** |
| What is**reproduction?** | * **Reproduction** is when an animal or plant produces one or more individuals similar to itself:
	+ Sexual **reproduction**:
		- requires two parents with **male and female gametes (cells)**
		- will produce **offspring** that is similar to but not identical to the parent
	+ Asexual **reproduction**:
		- will produce **offspring** that is identical to the parent
		- requires only one parent
 |
| How do **plants reproduce?** | * Male **gametes** can be found in the **pollen.**
* Female **gametes** can be found in the **ovary** (they are called **ovules).**
* **Pollination** occurs when **pollen** from the **anther** is transferred to the **stigma** by bees and other insects.
* The **pollen** then travels down and meets the **ovule**. When this happens, **seeds** are formed - this is called **fertilisation**.
* **Seeds** are then **dispersed** so that **germination** can begin again.
* Some **plants,** such as daffodils and potatoes, can also produce **offspring** using asexual **reproduction**
 |
| What areexamples of**life cycles**? | * The **life cycles** of mammals, birds, amphibians and insects have similarities and differences.
* One difference is that amphibians and insects go through the process of **metamorphosis.** This is when the structure of their bodies changes

significantly as they grow (for example, from tadpole to frog or caterpillar to butterfly). |

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| **What should I already know?** |
| * Animals can be grouped into **vertebrates** (and then further into fish, reptiles, amphibians, birds and mammals) and **invertebrates**
* Some examples of **life cycles** (including those of **plants** and humans)
* The processes of **dispersal, fertilisation** and **germination**
* **Reproduction** is one of the seven life processes.
* Parts of a **plant**, their features and what their **functions** are.
* The work of David Attenborough.
* The word **metamorphic** means ‘a change of form’ (in the context of rocks)
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| **Vocabulary** |
| anther | the part of a **stamen** that produces and releases the **pollen** |
| bulb | a [root](https://www.collinsdictionary.com/dictionary/english/root) shaped like an onion that grows into a **flower** or **plant** |
| cell | the smallest part of an animal or plant that is able to **function**independently |
| dispersed | [scattered,](https://www.collinsdictionary.com/dictionary/english/scatter) separated, or [spread](https://www.collinsdictionary.com/dictionary/english/spread) through a large area |
| dissect | to carefully cut something up in order to examine it scientifically |
| embryo | an unborn animal or human being in the very early stages ofdevelopment |
| fertilisation | male and female [**gametes**](https://www.collinsdictionary.com/dictionary/english/gamete) meet to form an **embryo** or **seed** |
| flower | the part of a **plant** which is often brightly coloured and grows at the end of a [**stem**](https://www.collinsdictionary.com/dictionary/english/stem) |
| flowering | **trees** or **plants** which produce **flowers** |
| function | a useful thing that something does |
| gamete | the name for the two types of male and female **cell**that join together to make a new creature |
| germination | if a **seed germinates** or if it is **germinated**, it [starts](https://www.collinsdictionary.com/dictionary/english/start) to grow |
| life cycle | the series of changes that an animal or **plant** passes through from the beginning of its life until its death |
| mature | When something **matures**, it is fully developed |
| metamorphosis | a person or thing develops and changes into something completely different |
| ovary | a female organ which produces eggs |
| ovule | a small egg |
| petal | [thin](https://www.collinsdictionary.com/dictionary/english/thin) coloured or white parts which form part of the **flower** |
| plant | a living thing that grows in the earth and has a **stem, leaves**,and **roots** |
| pollen | a fine [powder](https://www.collinsdictionary.com/dictionary/english/powder) produced by **flowers**. It [**fertilises** other **flowers** o](https://www.collinsdictionary.com/dictionary/english/fertilize)fthe same [species](https://www.collinsdictionary.com/dictionary/english/species) so that they produce [**seeds**](https://www.collinsdictionary.com/dictionary/english/seed) |
| pollination | To **pollinate** a plant or tree [means](https://www.collinsdictionary.com/dictionary/english/mean) to [**fertilise**](https://www.collinsdictionary.com/dictionary/english/fertilize) it with **pollen**.This is often [done](https://www.collinsdictionary.com/dictionary/english/do) by [insects](https://www.collinsdictionary.com/dictionary/english/insect) |
| reproduction | when an animal or plant produces one or more individualssimilar to itself |
| seed | the small, hard part from which a new **plant** [grows](https://www.collinsdictionary.com/dictionary/english/grow) |
| stigma | the [top](https://www.collinsdictionary.com/dictionary/english/top_1) of the centre part of a **flower** which takes in **pollen** |
| structure | the way in which something is built or made |



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| **Investigate!** |
| * **Dissect** a **flower** and identify the different parts of it. Label the different parts and explain their **functions**.
* Grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs.
* Compare the **life cycles** of mammals, amphibians, insects and birds. What is similar about their **life cycles**? What is different?
* Observe **life cycle** changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment.
* Compare the **life cycles** of **plants** and animals in the local environment with other **plants** and animals (in the rainforest, in the oceans, in desert areas and in prehis- toric times), asking pertinent questions and suggesting reasons for similarities and differences.
* Observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.
* Compare what you already know about David Attenborough, and compare his work to that of Jane Goodall’s.
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| Question 5: Place these events of reproduction of a flower in order from 1-4. One has been done foryou. | Start of unit: | End of unit: |
| bees and other insects fly to another flower and transfer the pollen to the stigma |  |  |
| the pollen travels down the ovule |  |  |
| bees and other insects collect pollenfrom the anther |  |  |
| fertilisation happens with the pollenmeets the ovule |  |  |

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| Question 2: Place these events in the life cycle of a plant (1-4). Onehas been done for you. | Start of unit: | End of unit: |
| fertilisation |  |  |
| pollination |  |  |
| germination |  |  |
| seed dispersal |  |  |

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| Question 9: Label where male and femalegametes can be found in the flower. | Start ofunit: | End ofunit: |
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| Question 4: Seed dispersal is part of a life process. Which life process is it a part of? | Start of unit: | End of unit: |
| respiration |  |  |
| nutrition |  |  |
| reproduction |  |  |
| excretion |  |  |

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| Question 3: The life cycles of amphibians and insects are similarbecause….(tick two) | Start of unit: | End of unit: |
| they both give birth to live young |  |  |
| the offspring hatch out of eggs |  |  |
| they usually both undergometamorphosis |  |  |
| they can both fly |  |  |

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| Question 1: Asexual reproductionoccurs when….(tick two) | Start ofunit: | End ofunit: |
| there is only one parent |  |  |
| there are two parents |  |  |
| the offspring is identical to theparent |  |  |
| the offspring is similar but notidentical to the parent |  |  |

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| Question 7: Pollen transfer from insects is one example of how pollination happens. Name another. | Start of unit: | End of unit: |
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| Question 8: You conduct an experiment toinvestigate if some seeds germinate quicker than others. Name one thing you will do tomake the test fair. | Start of unit: | End of unit: |
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| Question 10: Explain how fertilisation occursin a plant. | Start ofunit: | End ofunit: |
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| Question 6: Which of these areexamples of metamorphosis? | Start ofunit: | End ofunit: |
| teenager to adult |  |  |
| caterpillar to butterfly |  |  |
| tadpole to frog |  |  |
| chick to hen |  |  |