

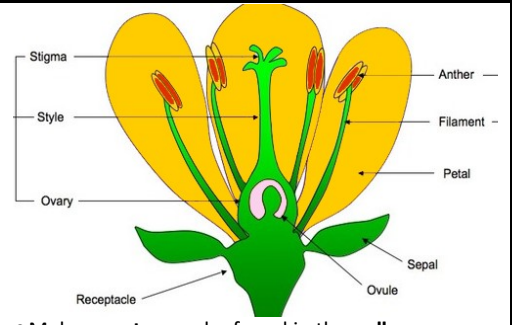
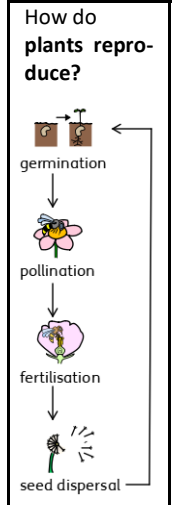


**Topic: Living things and their habitats**      **Year: 5**      **Strand: Biology**

- 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)

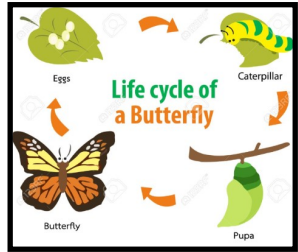
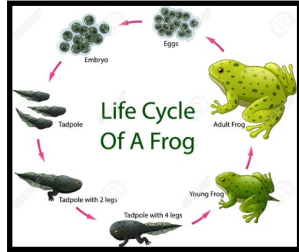
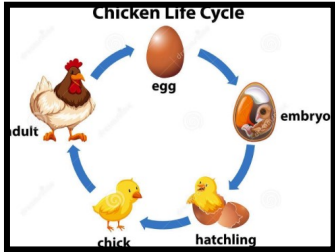
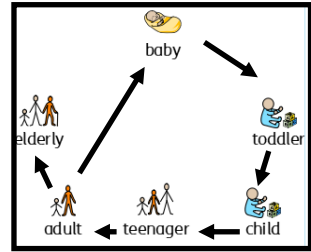
| Vocabulary    |  |
|---------------|--|
| anther        | the part of a <b>stamen</b> that produces and releases the <b>pollen</b>   |
| bulb          | a root shaped like an onion that grows into a <b>flower</b> or <b>plant</b>  |
| cell          | the smallest part of an animal or plant that is able to <b>function</b> independently  |
| dispersed     | scattered, separated, or 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 of development  |
| fertilisation | male and female <b>gametes</b> meet to form an <b>embryo</b> or <b>seed</b>  |
| flower        | the part of a <b>plant</b> which is often brightly coloured and grows at the end of a <b>stem</b>  |
| flowering     | <b>trees</b> or <b>plants</b> which produce <b>flowers</b>   |
| function      | a useful thing that something does   |
| gamete        | the name for the two types of male and female <b>cell</b> that join together to make a new creature  |
| germination   | if a <b>seed germinates</b> or if it is <b>germinated</b> , it starts to grow  |
| life cycle    | the series of changes that an animal or <b>plant</b> passes through from the beginning of its life until its death                         |
| mature        | When something <b>matures</b> , 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 coloured or white parts which form part of the <b>flower</b>  |
| plant         | a living thing that grows in the earth and has a <b>stem</b> , <b>leaves</b> , and <b>roots</b>  |
| pollen        | a fine powder produced by <b>flowers</b> . It <b>fertilises</b> other <b>flowers</b> of the same species so that they produce <b>seeds</b> |
| pollination   | To <b>pollinate</b> a plant or tree means to <b>fertilise</b> it with <b>pollen</b> . This is often done by insects                        |
| reproduction  | when an animal or plant produces one or more individuals similar to itself   |
| seed          | the small, hard part from which a new <b>plant</b> grows   |
| stigma        | the top of the centre part of a <b>flower</b> which takes in <b>pollen</b>   |
| structure     | the way in which something is built or made  |

- 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



- **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 are examples 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).



**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 prehistoric 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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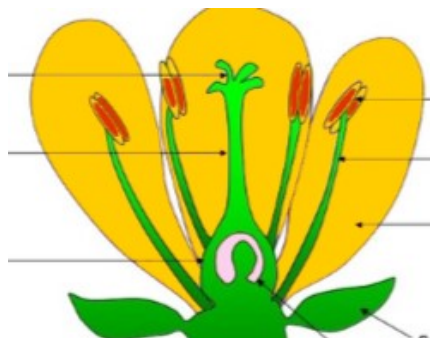
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| Question 1: Asexual reproduction occurs when....(tick two) | Start of unit: | End of unit: |
| there is only one parent                                   |                |              |
| there are two parents                                      |                |              |
| the offspring is identical to the parent                   |                |              |
| the offspring is similar but not identical 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 2: Place these events in the life cycle of a plant (1-4). One has been done for you. | Start of unit: | End of unit: |
| fertilisation   |                |              |
| pollination   |                |              |
| germination   |                |              |
| seed dispersal  | 1              |              |

|   |                |              |
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| Question 8: You conduct an experiment to investigate if some seeds germinate quicker than others. Name one thing you will do to make the test fair. | Start of unit: | End of unit: |
|   |                |              |

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

|  |                |              |
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| Question 9: Label where male and female gametes can be found in the flower.          | Start of unit: | End of unit: |
|  |                |              |

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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 5: Place these events of reproduction of a flower in order from 1-4. One has been done for you. | 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 pollen from the anther  | 1              |              |
| fertilisation happens with the pollen meets the ovule  |                |              |

|   |                |              |
|---|----------------|--------------|
| Question 10: Explain how fertilisation occurs in a plant. | Start of unit: | End of unit: |
|   |                |              |

|   |                |              |
|---|----------------|--------------|
| Question 6: Which of these are examples of metamorphosis? | Start of unit: | End of unit: |
| teenager to adult   |                |              |
| caterpillar to butterfly                                  |                |              |
| tadpole to frog   |                |              |
| chick to hen  |                |              |