Oughterside Foundation School - Science

Topic: Living things and their habitats	Year: A	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

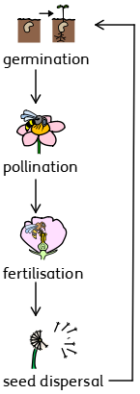
anther	the part of a **stamen** that produces and releases the **pollen**
bulb	a root shaped like an onion that grows into a **flower** or **plant**
cell	the smallest part of an animal or plant that is able to **function** independently
dispersed	scattered, separated, or spread through a large area
dissect	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 **gametes** 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**
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 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 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 produced by **flowers**. It **fertilises** other **flowers** of the same species so that they produce **seeds**
pollination	To **pollinate** a plant or tree means to **fertilise** it with **pollen**. 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 **plant** grows
stigma	the top of the centre part of a **flower** which takes in **pollen**
structure	the way in which something is built or made

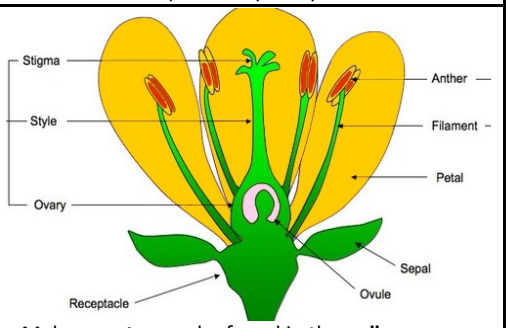
What will I know by the end of the unit?

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

How do **plants reproduce?**

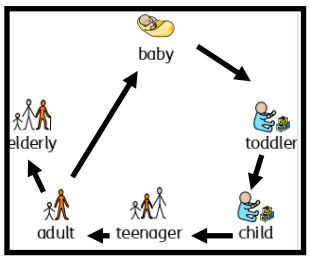


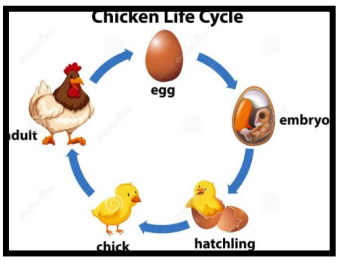


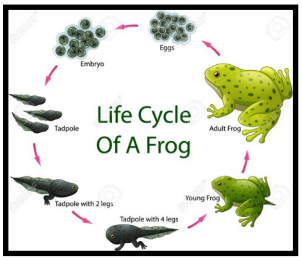
- Male **gametes** can be found in the **pollen.**
- Female **gametes** can be found in the **ovary** (they are called **ovules).**
- **Pollination** occurs when **pollen** from the **anther** is transferred to the **stigma** by bees and other insects.
- The **pollen** then travels down and meets the **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**

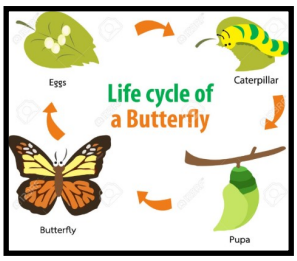
What are examples of **life cycles**?

- 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.

Oughterside Foundation School - Science

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

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		

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	

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		

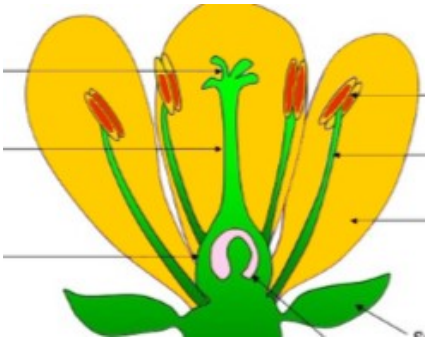
Question 4: Seed dispersal is part of a life process. Which life process is it a part of?	Start of unit:	End of unit:
respiration		
nutrition		
reproduction		
excretion		

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 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		

Question 7: Pollen transfer from insects is one example of how pollination happens. Name another.	Start of unit:	End of unit:

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:

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

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