Science Knowledge Organiser - Year 5

Unit: How do the life cycles of living things differ?

Key Vocabulary:

asexual reproduction	**Asexual reproduction** is when only one parent is needed to create an offspring, which is an exact copy of the parent.
fertilisation	**Fertilisation** is the fusing of the male and female sex cells in order to develop an egg.
gamete	**Gametes** are an organism's reproductive cells, also known as 'sex cells'.
gestation	The **gestation** period is the length of a pregnancy between conception and birth.
life cycle	A **life cycle** is the journey of changes that take place throughout the life of a living thing, including birth, growing up and reproduction.
metamorphosis	An abrupt and obvious change in the structure of an animal's body and their behaviour is called **metamorphosis**.
monotreme	**Monotremes** are the only mammals that lay eggs.
pollination	**Pollination** is the transfer of pollen to a stigma to allow fertilisation to occur.
reproduction	The process of new living things being made is called **reproduction**.
sexual reproduction	**Sexual reproduction** is when two parents are needed to make offspring which are similar (but not identical) to either parent.

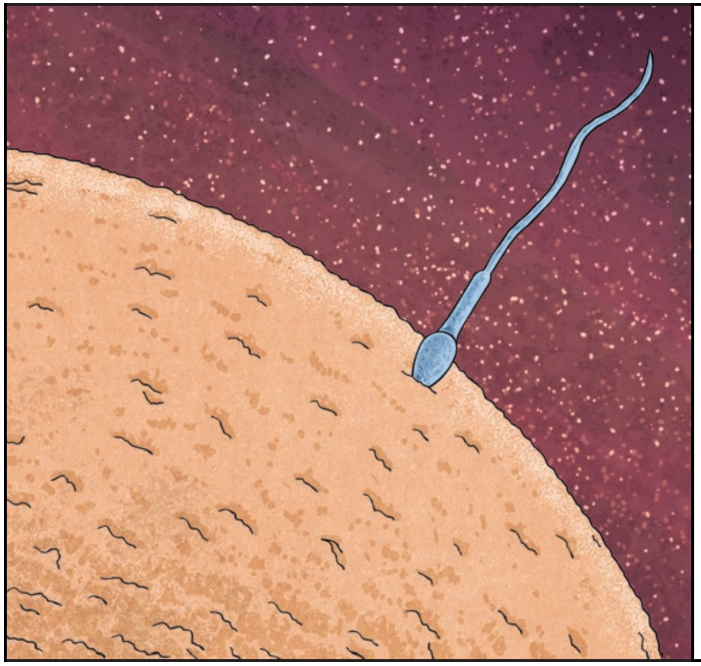
Science Skills:

- **Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.**
- **Describe the life process of reproduction in some plants and animals.**
- Report and present findings from enquiries, including conclusions, causal relationships and explanations of a degree of trust in results, in oral and written forms such as displays and other presentations.
- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Key Facts:

- Mammals can be split into three different groups: placentals, monotremes and marsupials.
- Platypuses and echidnas are examples of **monotremes**. While they lay eggs (like reptiles and birds), they feed their babies milk.
- Some living things, such as plants, contain both male and female **gametes**. Others, such as humans, contain either the male or female **gamete**.

Reproduction in Mammals



Mammals use **sexual reproduction** to produce their offspring.

- The male **gamete**, called the sperm, **fertilises** the female **gamete**.
- The **fertilised gamete** divides into different cells and forms a baby with a beating heart.
- The baby develops inside the female until the end of the **gestation** period, when the baby is born.

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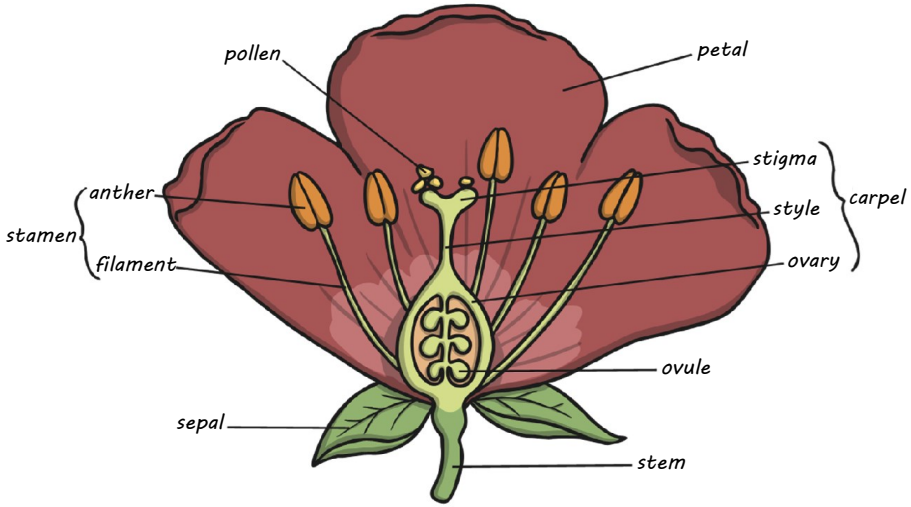

Most plants contain both the male **gamete** (pollen) and the female **gamete** (ovules), but most plants can't **fertilise** themselves. Wind and insects help to transfer pollen to a different plant. The pollen from the stamen of one plant is transferred to the stigma of another. It then travels down a tube through the style and fuses with an ovule.

Some plants, such as strawberry plants, potatoes, spider plants and daffodils use **asexual reproduction** to create a new plant. They are identical to the parent plant.

Humans develop inside their mothers and are dependent on their parents for many years, until they are old enough to look after themselves.

Amphibians, such as frogs and toads, are laid in eggs. Once hatched, they go through many changes, until they become an adult.

Some animals, such as butterflies, go through **metamorphosis** to become an adult, resulting in a conspicuous change to the structure of their body.

Birds are hatched from eggs and are looked after by their parents, until they are able to live independently.