Science Knowledge Organiser

Living things and their habitats	Year	5	Main Foci:	Biology

Year 5 Spring 2

What will I know by the end of the unit?

Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	• I know that some animals go through complete and incomplete **metamorphosis**. • I can explain the life cycle of a mammal, an amphibian, an insect, and a bird. • I know who Dame Jane Goodall was and can explain some of the work and research she undertook.
Describe the life process of reproduction in some plants and animals.	• I know that **reproduction** is one of the 7 life process. • I can explain how some mammals reproduce. • I can explain how some birds reproduce. • I can explain how some plants reproduce.

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).

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 I should already know:

- Identify and name a variety of common plants and their structure.
- Identify and name a variety of common animals.
- Explore and compare the differences between things that are living, things that are dead and things that have never been alive.
- Identify common habitats and microhabitats.
- Identify and describe functions of different parts of flowering plants.
- Explore the requirements of plants for life and growth, and how water is transported.
- Life cycle of plants, including pollination, seed formation and dispersal.
- Recognise how living things can be grouped.