Topic: **Evolution and Inheritance**	Year: 6	Strand: **Physics**

What should I already know?

- Pupils may know that cacti grow in dry regions and giraffes have long necks so it can reach the highest leaves—**EYFS**
- Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant **Y3 Plants**
- Recognise that environments can change and that this can sometimes pose dangers to living things **Y4- Living Things and their Habitats**
- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, **conductivity (electrical and thermal),** and response to magnets. **YR 5 - Properties and Changes of Materials**

What will I know by the end of the unit?

What is evolution?	**Evolution** is a process of change that takes place over many **generations**, during which species of animals, plants, or insects slowly change some of their physical **characteristics**. This is because **offspring** are not identical to their parents. It occurs when there is competition to **survive**. This is called **natural selection**. Difference within a species (for example between parents and offspring) can be caused by **inheritance** and **mutations**. **Inheritance** is when **characteristics** are passed on from generation to the next. **Mutations** in **characteristics** are not **inherited** from the parents and appear as new characteristics.
How do we know about evolution?	Evidence of **evolution** comes from **fossils** -these are compared to living creatures from today, palaeontologists can compare similarities and differences. Other evidence comes from living things - comparisons of some species may reveal common ancestors.
What is adaptation?	**Adaptation** is when animals and plants have evolved so that they have **adapted** to **survive** in their **environments**. For example, polar bears have a thick layer of blubber under their fur to survive the cold, harsh environment of the Arctic whereas giraffes have long necks to reach the leaves on trees. Some **environments** provide challenges yet some animals and plants have **adapted** to **survive** there. Sometimes **adaptations** can be disadvantageous. One example of this can be the dodo, which became **extinct** as it lost its ability to fly through **evolution**. Flying was unnecessary for the dodo as it had lived for so many years without predators, until its native island became inhabited. When **adaptations** are more harmful than helpful, these are called **maladaptation.**

Vocabulary

adaptation	a change in structure or function that improves the chance of survival for an animal or plant within a given environment
breeding	the process of producing plants or animals by reproduction
characteristics	the qualities or features that belong to them and make them recognisable
evolution	all the circumstances, people, things, and events around them that influence their life
environment	a process of change that takes place over many generations, during which species of animals, plants, or insects slowly change some of their physical characteristics
extinct	no longer has any living examples
fossil	the hard remains of a prehistoric animal or plant that are found inside a rock
generation	the act or process of bringing into being; through reproduction, especially of offspring
inherit	If you inherit a characteristic you are born with it, because your parents or ancestors also had it.
mutation	characteristics that are not inherited from the parents or ancestors and appear as new characteristics
natural selection	a process by which species of animals and plants that are best adapted to their environment survive and reproduce, while those that are less well adapted die out
offspring	a person's children or an animal's young
palaeontology	the study of fossils as a guide to the history of life on Earth
reproduction	when an animal or plant produces one or more individuals similar to itself
species	a class of plants or animals whose members have the same main characteristics and are able to breed with each other
survive	continue to exist
theory	a formal idea or set of ideas that is intended to explain something
variation	a change or slight difference

Investigate!

Investigate the adaptation to moths in their environments due to pollution.

Investigate the characteristics of parents and those they pass to their offspring. Use this knowledge to create insects using pipe cleaners/ pom-poms selecting characteristics from the parent insects.

Investigate characteristics of offspring of Mr Men and Little Miss as parents.

Research the work of Charles Darwin and his mockingbirds.