## Knowledge Organiser **Evolution and Inheritance**

| Key Vocabulary |                         |   |
|----------------|-------------------------|---|
| 1              | fossil                  | the remains of a living thing embedded in rock. These are often used to<br>find out about things that have lived in the past, particularly those that<br>are extinct.                   |
| 2              | species                 | a group of living things that have been classified in the same family because of their shared basic characteristics   |
| 3              | variation               | differences between living things in the same species   |
| 4              | extinct                 | when a species has not been able to reproduce and so has died out   |
| 5              | environment             | a place where things live. It may contain different habitats  |
| 6              | adaptations             | a characteristic a living thing has that means it is able to survive in its environment   |
| 7              | offspring               | the young produced by living things   |
| 8              | traits                  | the characteristics passed on to a living thing by its parents  |
| 9              | inheritance             | things passed on from our parents. We inherit our traits  |
| 10             | hereditary              | a trait which has been passed on to offspring   |
| 11             | genes                   | the scientific word for the building blocks that make us who we are.<br>They hold our traits  |
| 12             | evolution               | the changes to the traits/characteristics of a species overtime. This is a result of adaptations  |
| 13             | natural<br>selection    | a term used to describe the process where only living things in a species<br>that are adapted well enough to their environment will survive and pass<br>on their traits/characteristics |
| 14             | artificial<br>selection | where humans choose which traits they want to pass on to the offspring of a living thing  |
| 15             | Charles Darwin          | two scientists who discovered the Theory of Evolution   |
|                | Alfred Wallace          |   |

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## Genetics

Genetics is the study of what offspring inherit from their parents.

Genes are the building blocks that are passed on to living things from their parents. They contain the recipe, or code, that decides which traits a living thing will have.

In humans, genes are found in all of our cells. Inside each of the tiny cells that make up every part of our bodies are even smaller structures called chromosomes. Our genes are found inside these **chromosomes** as a special genetic code, our recipe, in something called **DNA**.







| tat  | Adaptation  |
|------|---|
| ert  | To store water: needles in-<br>stead of leaves, thick stems,<br>large root systems.                 |
| lic  | To stay warm: Thick skin,<br>layer of blubber, black skin,<br>double layer of fur.                  |
| ctic | To swim – wings shaped like<br>flippers, waterproofing oil<br>on feathers, powerful<br>webbed feet. |

Some people think evolution happens very quickly or that a species chooses to evolve. This is not true.

Evolution is a process that happens over hundreds of thousands or even millions of years. It is a gradual process resulting from the living things best adapted to their environment surviving to produce offspring which will inherit these adaptations.