YEAR 6 SCIENCE KNOWLEDGE ORGANISER

EVOLUTION AND INHERITANCE

Big Question: How do living things change over time and how are characteristics passed on?

KEY VOCABULARY

Word	Meaning
Evolution	The process by which living things change over many generations.
Inheritance	When characteristics are passed from parents to their offspring.
Characteristic	A feature or quality of a living thing.
Adaptation	A characteristic that helps an organism survive in its environment.
Species	A group of living things that can breed together to produce fertile offspring.
Fossil	The remains or imprint of a living thing from millions of years ago.
Environment	The surroundings or conditions in which a living thing lives.
Offspring	The young of a plant or animal.
Variation	The differences between individuals of the same species.
Natural selection	The process where the best adapted survive and pass on their genes.
Gene	The part of DNA that carries information about a characteristic.
DNA	The material in cells that contains genetic information.

KEY KNOWLEDGE

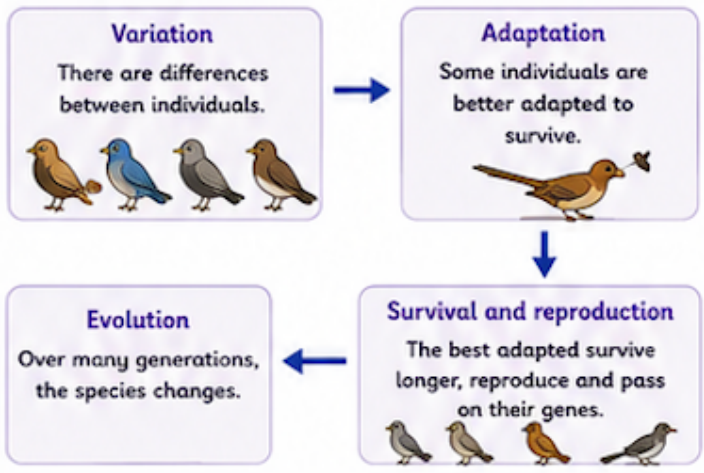
1. Changes over time

Fossils give us evidence that living things have changed over millions of years. Evolution explains how and why these changes happen.

Fossil of a dinosaur → Early bird (Archaeopteryx) → Modern bird

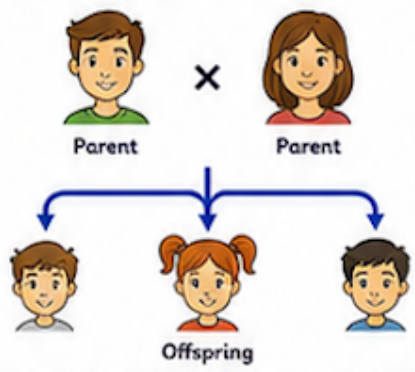
2. How evolution happens

Evolution happens when the environment changes and some individuals are better adapted. They survive, reproduce and pass on their characteristics.



3. Inheritance

Characteristics are passed from parents to offspring through genes.



Offspring inherit a mix of characteristics from both parents.

4. Variation

Offspring are similar to their parents but not identical. This is because of variation.

All these dogs are the same species but have variations in size, colour, coat type and shape.

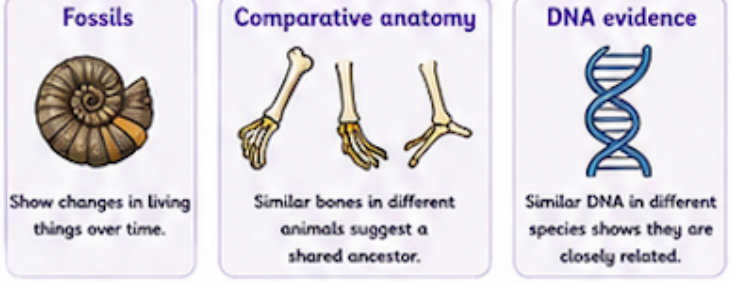
5. Adaptation

Adaptations help living things to survive in their environment.

Thick fur keeps polar bears warm. | Spines reduce water loss in cacti. | Webbed feet help ducks to swim.

6. Evidence for evolution

Scientists use different types of evidence to support evolution.



REMEMBER THESE FACTS

- Fossils show that living things have changed over time.
- Evolution happens when the environment changes.
- Best adapted survive, reproduce and pass on their genes.
- Inheritance is when characteristics are passed from parents to offspring.
- Offspring are similar to their parents but not identical.
- Variation means there are differences between individuals.
- Adaptations help living things survive in their environment.

WORKING SCIENTIFICALLY

During this unit I will:

- ✓ Research using secondary sources.
- ✓ Observe and compare characteristics.
- ✓ Look for patterns in how living things have changed.
- ✓ Use evidence to explain ideas.
- ✓ Identify, classify and group living things.
- ✓ Ask scientific questions.
- ✓ Record and present findings.

CAN YOU ANSWER THESE?

1. What is evolution?
2. How do fossils provide evidence for evolution?
3. What is inheritance?
4. Why are offspring not identical to their parents?
5. What is an adaptation? Give one example.
6. How does natural selection work?

NATIONAL CURRICULUM LINKS

By the end of Year 6, I can:

- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

STAY SAFE

When researching or observing living things, follow your teacher's instructions, handle fossils and specimens carefully and respect living organisms and habitats.