

Living Things & Habitats

Life cycles & reproduction



1. Our Big Question: what is the difference between the life cycle of an insect and a mammal?

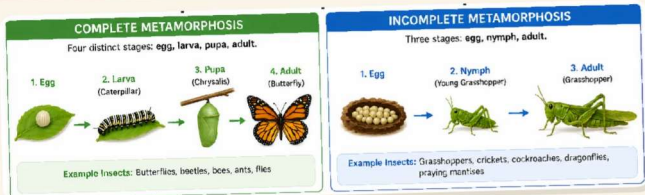
We **research** a chosen insect and mammal, then compare their life cycles.

- This is a **research enquiry** — we gather evidence, not run a fair test.
- Mammals give birth to live young; insects hatch from eggs.

3. What's the difference between complete and incomplete insect metamorphosis?

Complete metamorphosis has a pupa stage (like a butterfly); **incomplete** does not (like a grasshopper).

- Butterfly: egg → caterpillar → pupa (chrysalis) → adult.
- Grasshopper: egg → nymph (looks like a small adult) → adult, with no pupa.



5. How do naturalists research living things?

Naturalists like David Attenborough and Jane Goodall observe and record living things carefully over time.

- We plan our research the same way: decide what to find out, then look it up carefully.
- Good researchers record their evidence clearly as they go.

6. Greater Depth: why do life cycle lengths vary so much between species?

A mayfly can live for a day as an adult; an elephant can live for decades.

- Smaller, faster-reproducing animals often have shorter life cycles.
- Comparing life cycle length across species reveals this pattern.



2. What is metamorphosis in an amphibian's life cycle?

A frog goes through **metamorphosis**: egg → tadpole → froglet → adult frog.

- Its body shape changes dramatically at each stage.
- Amphibians usually start life in water, then move onto land as adults.

4. What's the difference between sexual and asexual reproduction?

Sexual reproduction needs two parents; **asexual reproduction** needs only one.

- Offspring from sexual reproduction vary; asexual offspring are identical to the parent.
- Both plants and animals can reproduce in either way, depending on the species.

ANIMAL RESEARCH: The Lion
Scientific Name: *Panthera leo*

OVERVIEW
Lions are large, carnivorous mammals known as the "king of the jungle." They live in groups called prides and are highly social animals.

Habitat: Grasslands, savannas, and open woodlands in Africa, and a small population in India.

Diet: Carnivore (primarily deer, zebras, wildebeest, and buffalo).

Lifespan: 10–14 years in the wild.

PHYSICAL FEATURES

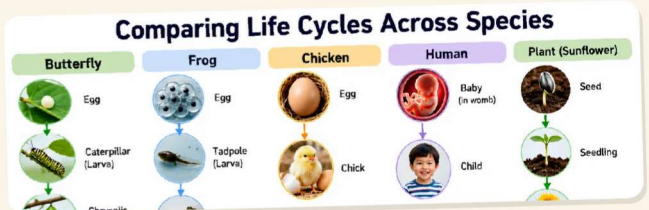
- Large, muscular
- Males have thick manes
- Sharp claws for hunting
- Long tail with a tuft

BEHAVIOR AND DIET

- Lions live in groups called prides, usually with related females, their cubs, and a few males.
- Lionesses do most of the hunting while males protect the pride's territory.

FUN FACTS

- Lions can be heard roaring up to 8 km (5 miles) away!
- Cubs are born with spots that fade as they grow.
- Lions are an important part of the ecosystem.



7. TAPS: How do we write up our life-cycle comparison report?

RESEARCH

Our TAPS task: **what is the difference between the life cycle of an insect and a mammal?** This is a **research report** — we compare our researched insect and mammal.

- Question → decide what to research → find & record evidence.
- Research → compare findings → write our comparison → **conclusion**.

All living things go through a life cycle. A life cycle is the series of changes an organism goes through from birth to the production of offspring or to the end of its life. Insects and mammals are both animals, but their life cycles are very different. This report compares the life cycles of an insect (butterfly) and a mammal (dog).

Insect Life Cycle: Butterfly

Butterflies go through a process called **complete metamorphosis**. This means they have four distinct stages in their life cycle. Each stage looks very different and has a specific job to do.

Mammal Life Cycle: Dog

Dogs, like other mammals, do not go through metamorphosis. They are born looking similar to their parents and grow bigger over time.

KEY VOCABULARY

life cycle metamorphosis complete / incomplete sexual reproduction asexual reproduction naturalist research evidence compare conclusion

SKILLS I'LL USE

- Plan & carry out research
- Sequence a life cycle diagram
- Compare using evidence
- Write a comparative report
- GD: explain why life cycle length varies between species