Summer Block 2

Growing up

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Small steps

Step 1	Parent and offspring
Step 2	Life cycle of humans
Step 3	Life cycles of different mammals
Step 4	Life cycle of amphibians
Step 5	Life cycle of a butterfly
Step 6	Are there patterns between the life cycles of different animals?

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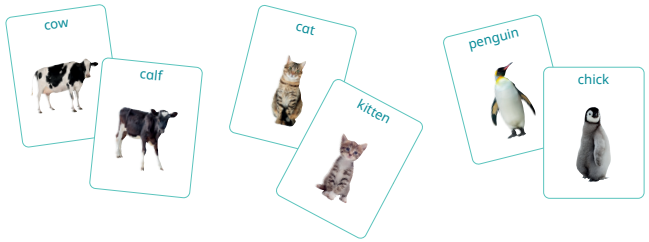
Key resources

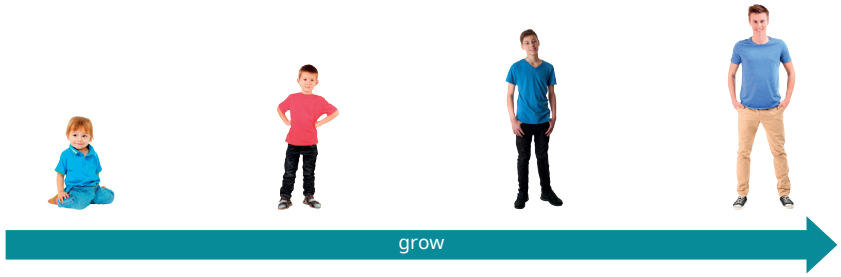
Step 1 – Parent and offspring

- images of adult animals
- images of animals' offspring
- cards for matching game



Step 2 – Life cycle of humans

- images of humans in key stages of life cycle
- labels of each stage

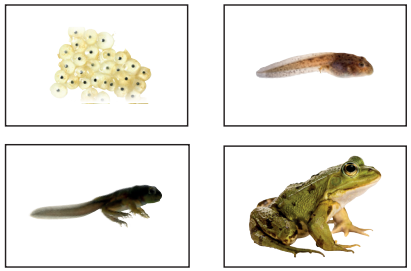


Step 3 – Life cycles of different mammals

- images of mammals at different life cycle stages, such as dogs, cats, mice, whales and elephants

Step 4 – Life cycle of amphibians

- hand lenses
- images of frogs at different stages in the life cycle



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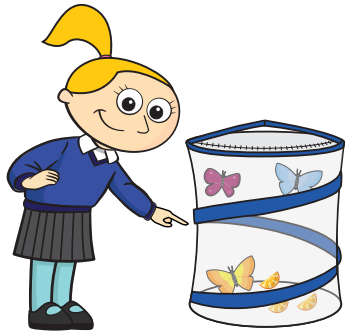
Key resources

Step 5 – Life cycle of a butterfly

- reusable butterfly hatching kit
- fresh fruit



Step 6 – Are there patterns between the life cycles of different animals?

- cards with images of different animals at different life cycle stages

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Parent and offspring

Notes and guidance

In this block, children are introduced to the processes of growth in animals. This small step introduces the term "offspring" for the first time. Children should identify that "offspring" refers to an animal's young.

Children may be familiar with some names of animal offspring, however, the specific names for the range of animal's offspring should be taught in this step. Humans and their offspring should also be introduced. Children should be able to identify an animal and its offspring through sorting and matching activities.

Use this step to recap the animal groups explored in Autumn Block 1 (mammals, birds, fish, amphibians and reptiles). Children do not need to understand or use the term "reproduction" within this step.

Key questions

- What is "offspring"?
- What is the name for the offspring of a _____?
- Which animal gives birth to a _____?
- Which animal groups lay eggs?
- Which animal groups give birth to live offspring?
- Which animals give birth to a calf?
- Which animals give birth to a pup?
- What is the name of human offspring?
- What do we call the mother of a _____?

Things to look out for

- Children may think that all animals give birth to live young. However, some animals are born from eggs.
- Offspring of different animals can share the same name. For example, a calf is the name for offspring from cows, whales, elephants and camels.

National curriculum links

- Notice that animals, including humans, have offspring which grow into adults.
- **Working scientifically** – Identifying and classifying.

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Parent and offspring

Key vocabulary

- **offspring** – the young of a living thing

- **growth** – when a living thing gets bigger

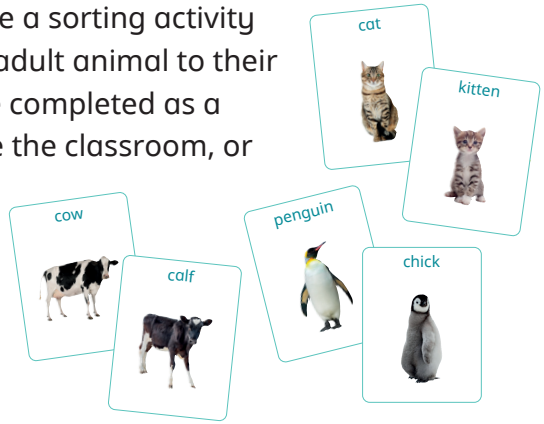
- **egg** – contains the offspring of birds, amphibians, reptiles and most insects

- **adult** – the stage when a living thing is fully grown

- **parent** – an adult that has offspring

Practical ideas

- Provide children with a selection of images of the offspring of various animals. Ask children to group the offspring, based on their characteristics. Children could group the offspring in multiple ways, such as by the name, if they are born live or from an egg, or by animal group.
- Children could complete a sorting activity where they match the adult animal to their offspring. This could be completed as a scavenger hunt outside the classroom, or as a matching game.



Factual knowledge

- Most mammals give birth to live young. These are their offspring.
- Reptiles, amphibians and birds and most insects lay eggs. These are their offspring.
- The offspring of many animals have a different name to the adult.

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Life cycle of humans

Notes and guidance

In the previous small step, children defined "offspring" as the young of a living thing, and identified the names of offspring for different animals. In this small step, children look at a life cycle for the first time and explore the stages in the life cycle of a human. Children should recap the key characteristics of a mammal and be reminded that humans are mammals.

Children are introduced to a simple human life cycle, including baby, child, teenager and adult. They should identify simple changes that occur within each life stage. Changes related to puberty do not need to be discussed, because these will be taught in Year 5

In this step, children are introduced to the enquiry question for this block. In the following steps, children explore the life cycles of different animals. In the final step, children will be asked to spot patterns between the different life cycles.

Key questions

- What is the first stage of the human life cycle?
- How is a child different to a baby?
- How is an adult different to a child?
- What changes does a child go through?
- Which stages of the human life cycle need a care-giving adult?
- Which stage of the human life cycle is usually the longest?

Enquiry question

- Are there patterns between the life cycles of different animals?

Things to look out for

- Children may think that humans are not animals. Highlight the similarities in characteristics between humans and other mammals (they give birth to live offspring, produce milk and have hair).

National curriculum links

- Notice that animals, including humans, have offspring which grow into adults.
- **Working scientifically** – Asking simple questions and recognising that they can be answered in different ways.

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Life cycle of humans

Key vocabulary

- **baby** – the stage after birth

- **child** – the stage after a baby and before a teenager

- **teenager** – the stage before becoming an adult human

- **adult** – the stage when a living thing is fully grown

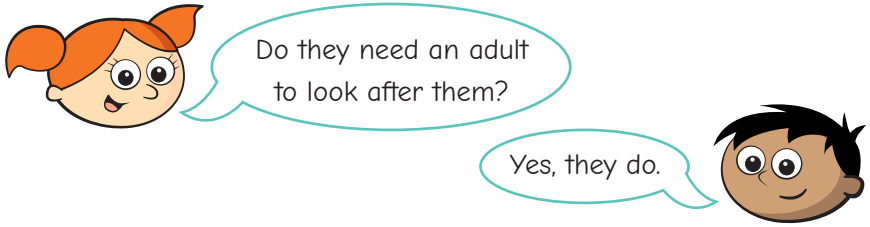
- **life cycle** – the stages a living thing goes through

Practical ideas

- In groups, ask children to order images of the key stages of the human life cycle, before adding labels to identify each stage.

  This activity could be completed with cards or photographs that the children and staff have provided.

- Ask a child or teacher to choose a phase of the human life cycle. The other children should ask yes/no questions about the life cycle, with a focus on what humans are able to do at each stage and the key changes throughout the life cycle.



Factual knowledge

- Humans are mammals.
- Humans give birth to live young.
- Humans follow these stages of the life cycle – baby, child, teenager and adult.
- The body changes and grows throughout the life cycle.

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Life cycles of different mammals

Notes and guidance

In this small step, children build on their knowledge of the human life cycle from Step 2 to explore simple life cycles of a range of mammals. Children should compare the life cycle of humans with other mammals, noticing patterns, similarities and differences. Emphasise that as humans are mammals, their life cycles are similar. Children should be introduced to the term "adolescent" rather than "teenager" when describing other mammals.

By the end of this step, children should be able to describe familiar mammals' life cycles. They should identify that baby mammals need milk from their mother before they learn to eat solid food, move and play. As adolescents, mammals gain independence. Most mammals become adults in less time than humans.

Key questions

- What is the first stage of the life cycle of a mammal?
- How is an adult mammal different to a baby mammal?
- In which stage does a mammal need milk?
- In which stages of the life cycle does the offspring need its mother?
- In which stage does a mammal start its own family?
- How are the life cycles of mammals similar or different?

Enquiry question

- Are there patterns between the life cycles of different animals?

Things to look out for

- Most mammals have species-specific names for the first stages of the life cycle, such as puppy, rather than baby.
- Children may think that humans are not mammals. Make clear the similarities in characteristics (they give birth to live offspring, produce milk and have hair).

National curriculum links

- Notice that animals, including humans, have offspring which grow into adults.
- **Working scientifically** – Record and communicate their findings in a range of ways and begin to use simple scientific language (non-statutory).

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Life cycles of different mammals

Key vocabulary

- **mammal** – an animal with fur or hair on its body, which gives birth to live young and feeds its young on milk

- **life cycle** – the stages a living thing goes through

- **baby** – the stage after birth

- **adolescent** – the stage before becoming an adult mammal

- **adult** – the stage when a living thing is fully grown

Practical ideas

- Provide children with cards showing familiar mammals at different stages of their life cycle. Then they could place the cards in order of the life cycle for each mammal, allowing them to make direct comparisons between life cycles.
- Provide images of mammals at different life cycle stages, but with a stage removed. Children could then draw what they think the animal would look like in the missing stage.

Factual knowledge

- A mammal is an animal with fur or hair on its body, which gives birth to live young and feeds its young on milk.
- Different mammals have different life cycles.
- Most mammals grow up quicker than humans and become adults sooner.

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Life cycle of amphibians

Notes and guidance

In this small step, children develop their understanding of life cycles by exploring the simple life cycle of a frog. Children may need to recap the characteristics of adult amphibians before exploring how frogs grow. These include being able to live on land and in water, not having scales and laying eggs.

By the end of this step, children should be able to identify the life stages of a frog as frogspawn (eggs), tadpole, young frog (froglet) and adult frog. If possible, create an area to attract frogs, so that children can observe the life cycle directly. Making simple comparisons between the life cycle of amphibians and the life cycle of mammals will prepare children to answer the enquiry question at the end of this block.

Key questions

- Is a _____ an amphibian? How do you know?
- What features do amphibians have?
- Where might you find frogspawn?
- Where might you find tadpoles?
- Where might you find adult frogs?
- How does a tadpole change as it grows into a froglet?
- How does a froglet change when it grows into an adult frog?

Enquiry question

- Are there patterns between the life cycles of different animals?

Things to look out for

- Children may not think of frogspawn as being an egg. Comparing examples of different eggs may help children to identify any similarities and differences.
- Children may think that tadpoles are fish, because of their shape and behaviour, rather than a stage in a frog's life cycle.

National curriculum links

- Notice that animals, including humans, have offspring which grow into adults.
- **Working scientifically** – Identifying and classifying.

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Life cycle of amphibians

Key vocabulary

- **life cycle** – the stages a living thing goes through

- **amphibian** – an animal that can live on land and in water

- **frogspawn** – frog eggs

- **tadpole** – the stage after hatching from an egg, and has a long tail

- **froglet** – the stage after tadpole, and has a tail and legs

Practical ideas

- If possible, children could observe frogspawn, tadpoles and frogs directly if provided with a tank in the classroom, or if there is access to a pond.

Children should take extra care near ponds.

Children could draw diagrams of what they see and describe the changes in simple sentences.

- Provide children with images of frogs at different stages in the life cycle.

Ask children to identify familiar features, such as the tail or legs, before arranging the images in order.

Factual knowledge

- Frogs are amphibians. This means that they can live on land and in water.
- Frogs lay eggs.
- A frog's life cycle is eggs (frogspawn), tadpole, young frog (froglet) and adult frog.

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Life cycle of a butterfly

Notes and guidance

In this small step, children explore the simple life cycle of a butterfly. They learn that a butterfly is an insect. Children looked at the general definition of an insect in Autumn Block 1, and this is explored in more detail in Year 4. They should also learn that the life cycle of a butterfly is egg, caterpillar, pupa and butterfly.

Give children the opportunity to observe the life cycle of a butterfly directly with a reusable butterfly kit. This allows them to observe how a caterpillar changes and develops over time. It will also be useful later this term, where children produce a butterfly diary. There are many cost-effective options available to purchase online. Ensure there is a small supply of fresh fruit for the butterflies to feed on.

Things to look out for

- As caterpillars and butterflies look so different, children may think that these are two separate animals.
- The hatching process takes approximately four weeks. Ensure enough hatching time is provided before reviewing the findings in Summer Block 4
- Hatching kits should be placed where children can observe but not touch, because this may impact on the hatching process.

Key questions

- What is the first stage of the life cycle of a butterfly?
- What happens to the caterpillar?
- Where does the butterfly come from?
- How long does a pupa take to turn into a butterfly?
- How long does the pupa stage take?
- How long does the life cycle take?
- Is this similar/different to other animals?

Enquiry question

- Are there patterns between the life cycles of different animals?

National curriculum links

- Notice that animals, including humans, have offspring which grow into adults.
- **Working scientifically** – Observing closely, using simple equipment.

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Life cycle of a butterfly

Key vocabulary

- **life cycle** – the stages a living thing goes through

- **egg** – contains the offspring of birds, amphibians, fish, reptiles and most insects

- **caterpillar** – the stage after hatching from an egg

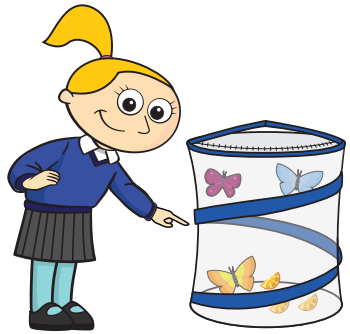
- **pupa** – the stage when the caterpillar forms a hard case and changes into an adult

- **butterfly** – the stage when the butterfly is a fully grown adult

Practical ideas

- Children can observe the stages of a life cycle directly, using a hatching kit in the classroom. They will revisit this in Summer Block 4 later this term, where they complete a diary.

While children wait for the eggs to hatch and observe the changes over time, they could act out the life cycle (this may be familiar to the children from popular children's books). This could also be done as an ordering activity to prepare them for Summer Block 4



Factual knowledge

- Butterflies lay eggs (usually on a leaf), which hatch into caterpillars.
- Once a caterpillar has grown, it will change into a pupa and form a hard case to protect itself.
- The pupa will change into a butterfly.
- Once the butterfly is fully formed, it will hatch from its casing.
- Once the butterfly has hatched, it is ready to fly and start the life cycle again.

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Are there patterns between the life cycles of different animals?

Notes and guidance

In this small step, children look at the life cycles of all the different animal groups explored throughout the block and will provide an answer for the enquiry question. They should be encouraged to spot patterns, as well as similarities and differences, based upon the observations that they have made.

Throughout this step, children should be referring to all the life cycles taught and should be encouraged to identify "offspring". Children should recognise that offspring are born in different ways, such as live young for most mammals and eggs for other animal groups. They may also notice that each life cycle lasts for a different length of time.

Encourage children to group images or provide verbal or written responses to highlight any similarities and differences between animal life cycles.

Things to look out for

- Some offspring look different to the parent. Children may think that these are two different animals.
- Children should be encouraged to look at the similarities and differences in characteristics throughout the steps of the life cycle.

Key questions

- Which animal groups start their life cycle in an egg?
- Which animal group gives birth to live young?
- What do you notice about the life cycles of mammals and humans?
- What do you notice about the life cycles of frogs and butterflies?
- Which animals have the longest life cycles?

Enquiry question

- Are there patterns between the life cycles of different animals?

National curriculum links

- Notice that animals, including humans, have offspring which grow into adults.
- **Working scientifically** – Using their observations and ideas to suggest answers to questions.

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Are there patterns between the life cycles of different animals?

Key vocabulary

- **life cycle** – the stages a living thing goes through

- **egg** – contains the offspring of birds, amphibians, fish, reptiles and most insects

- **amphibian** – an animal that can live on land and in water

- **mammal** – an animal with fur or hair on its body, which gives birth to live young and feeds its young on milk

- **compare** – to see how two or more things are similar or different

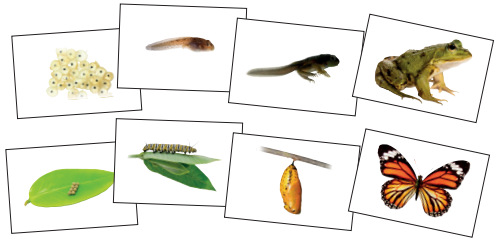
Practical ideas

- Children should provide an answer to the enquiry question. They could group animal cards based on the stages of the life cycles. Children should choose one feature at a time to compare the life cycles.

  Use sentence stems such as:

  - _____ start with an egg.
  - They all have _____ .

  Children may find it easier to have all the life cycles in front of them. They could be provided with cards to place in order, before they then complete the comparison.



Factual knowledge

- Most animal life cycles share similarities.
- Most mammals grow up much quicker than humans and become adults much sooner.
- Some animals give birth to live young, and some lay eggs.

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