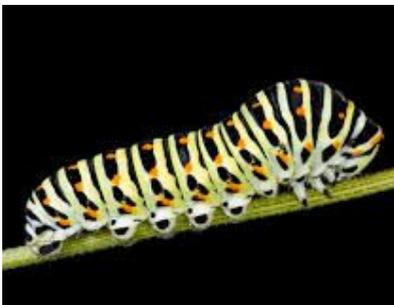


# The Nature Diary



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Year 2 - Summer 1

Name: \_\_\_\_\_

Class: \_\_\_\_\_

# DRIVING QUESTION: How important is the migration and life cycle of the butterfly?

## LESSON ONE: THE INSECT LIFE CYCLE

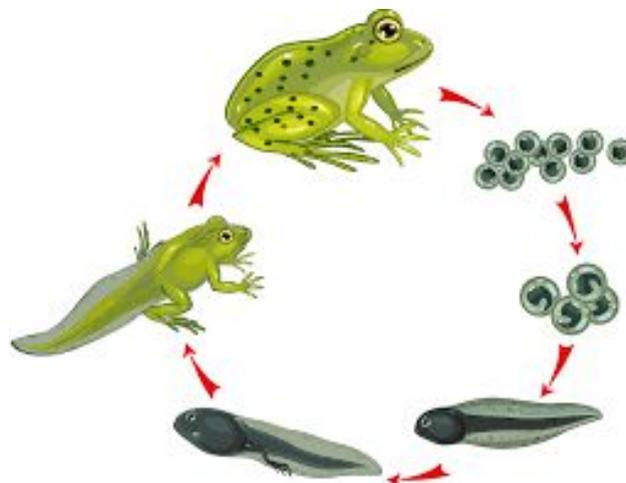
Date: \_\_\_\_\_

**Key Question: What is a life cycle of a butterfly?**

Glossary	
<i>Life cycle</i>	The series of changes in the life of an organism including reproduction.
<i>Chrysalis / Pupa</i>	A chrysalis is a butterfly or moth in the stage between a larva and an adult.
<i>Larva</i>	A young wingless form of many insects that hatches from an egg.
<i>Metamorphosis</i>	The process of transformation from an immature form to an adult form.
<i>Migrate</i>	Seasonal movement of animals from one region to another.

### Life Cycles

All animals, including humans, are born, they get older and bigger and some will go on to have children. In the end, all animals die. We call this a life cycle.



Animals are small when they start life. Over time they grow bigger and their bodies change. When they are grown up, they might reproduce and have young animals of their own. These children will get older and may eventually also have children too, and so the life cycle keeps going!

### What is a life cycle?

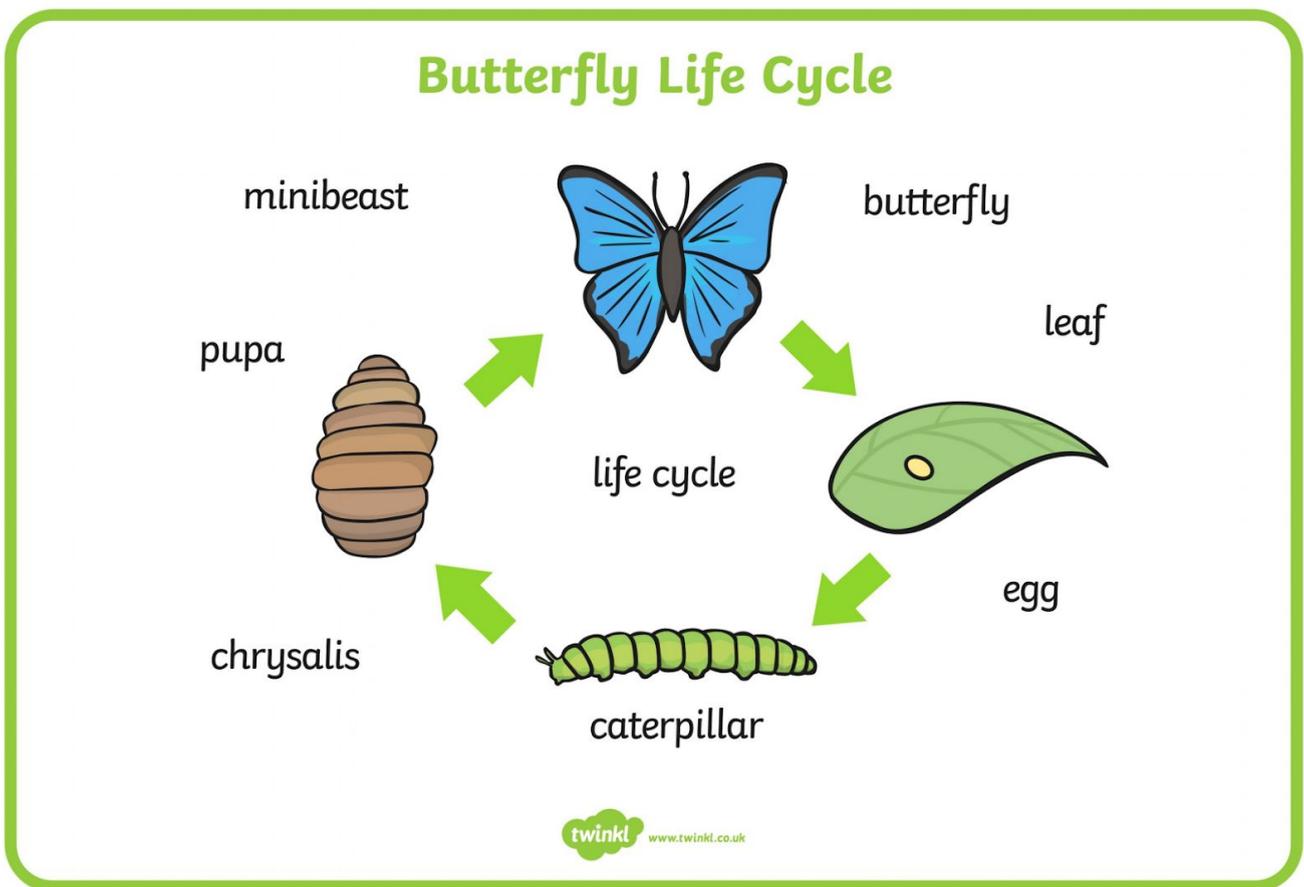
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As animals grow older, how they look will change and one of the most amazing changes in nature is the life cycle of a butterfly.



## Butterfly Life cycle

The life cycle starts when a butterfly lays eggs onto a leaf or a stem of a plant. The caterpillar egg can be round, oval or cylindrical.



The larva (caterpillar) hatches and works on eating the plant it was born on in order to grow. Caterpillars eat lots of leaves and grow very quickly. As the caterpillar eats more and more, it gets bigger and this means that the caterpillar needs to shed its skin because it becomes too tight. The caterpillar will shed its skin four or five times. When the caterpillar is fully grown it changes itself into a chrysalis.



The caterpillar undergoes a process called metamorphosis inside its chrysalis or pupa, it is rapidly changing into a butterfly. This is the stage that

happens after it is a caterpillar but before it becomes a butterfly.



When the butterfly is ready, the chrysalis splits open and the butterfly crawls out. The butterfly cannot fly straight away because its wings are soft, wet and wrinkled. The butterfly needs to wait until its wings are dry before it can fly.

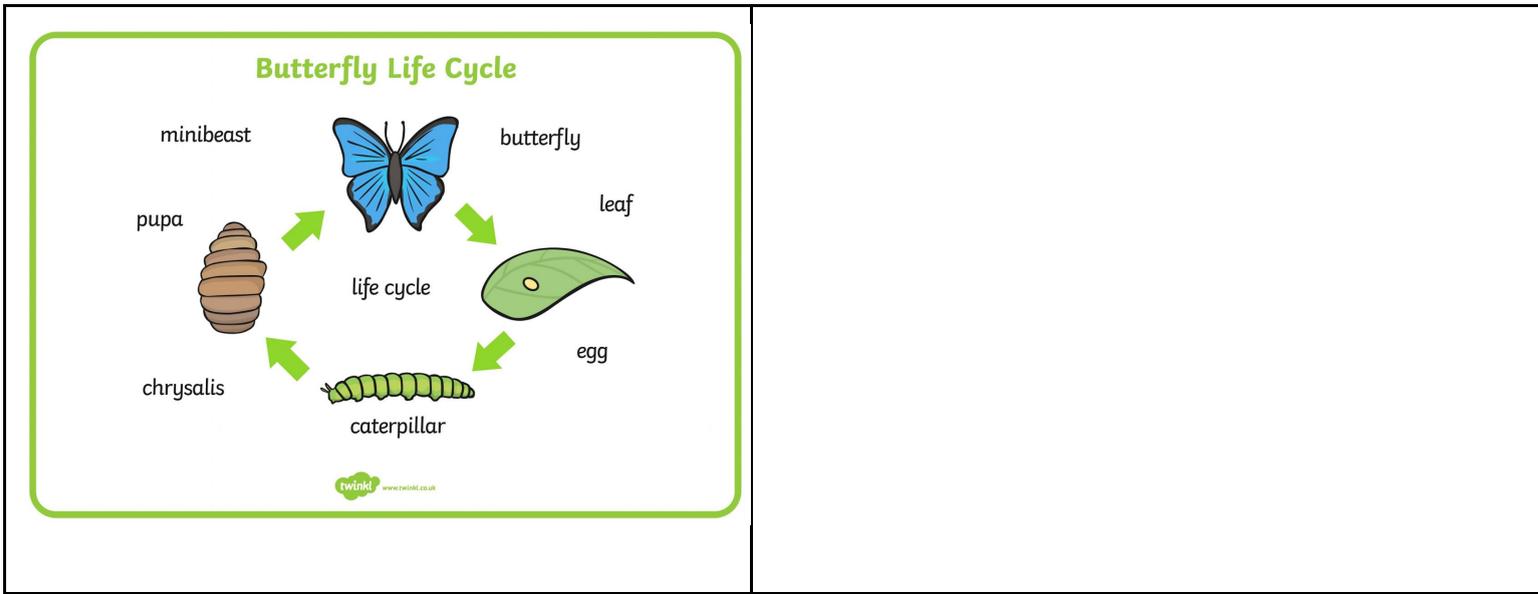
When the fully formed butterfly emerges it will spend its time feeding from the nectar of flowers, drinks water and liquid from fruit. The butterfly will look for a mate and the whole life cycle will begin again. They tend to live for around 2-4 weeks after emerging from their chrysalis.



Order the life cycle of a butterfly. (1-4)

The larva (caterpillar) hatches and works on eating the plant it was born on.	
The caterpillar undergoes a process called metamorphosis.	
The butterfly lays eggs onto a leaf.	
The fully formed butterfly emerges from its chrysalis.	

Draw and label the life cycle of a butterfly. Use key vocabulary.



**Challenge:** Describe the life cycle of the butterfly, use key vocabulary in your answer. Why is it important?

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### Butterfly Migration

Animals try to find somewhere that is warm and has a good food supply to spend the winter. Some animals travel very far and other animals travel only short distances. The **Monarch Butterfly** is known in North America for its migrations to overwintering sites in Mexico. In Australia, the butterfly also migrates from cooler areas to the warmer coast.

Why do butterflies migrate?

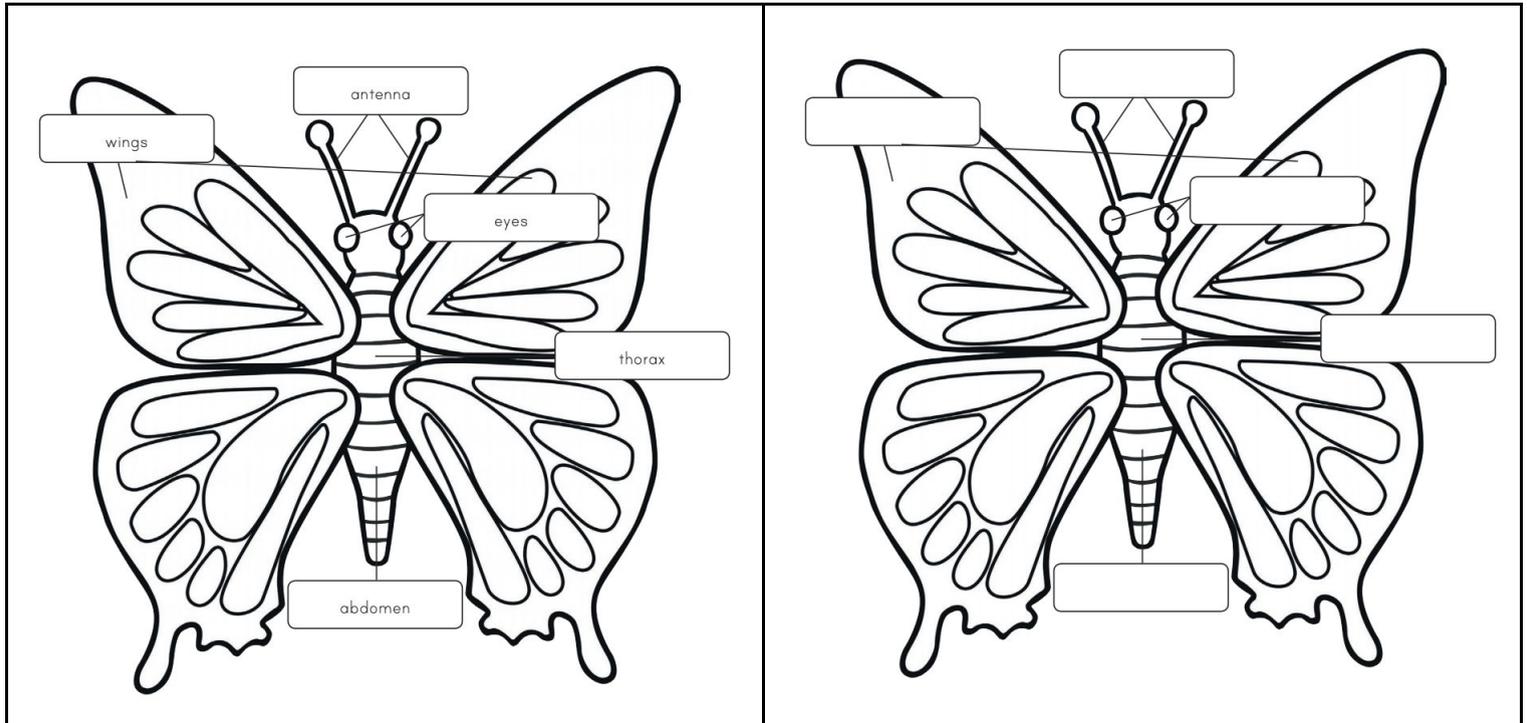
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Label the parts of a butterfly



Exit Ticket: Tick the correct statements



The caterpillar egg can be round, oval or cylindrical.

Butterflies taste with their feet.

Butterflies are cold blooded

Butterflies only live for 24 hours.

The caterpillar egg can be round, oval or cylindrical.	
Butterflies taste with their feet.	
Butterflies are cold blooded	
Butterflies only live for 24 hours.	

## LESSON TWO: THE AMPHIBIAN LIFE CYCLE

Date: \_\_\_\_\_

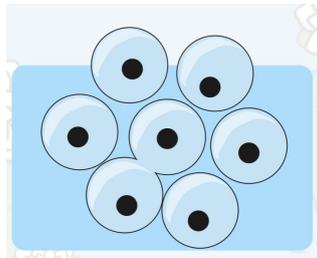
### Key Question: What is the life cycle of a frog?

Glossary	
<i>Amphibian</i>	A cold blooded vertebrate animal which has an aquatic gill.
<i>frogspawn</i>	The eggs of a frog which are surrounded by transparent jelly.
<i>tadpole</i>	The tailed aquatic larva of an amphibian breathing through gills and lacking legs until the later stages of its development.
<i>froglet</i>	A tailless amphibian with a short squat body, moist smooth skin and very long hind legs for leaping.

### Eggs

Frog eggs also known as frogspawn are laid in a group in the water by a frog.

After about 6-21 days, these eggs hatch into tadpoles.

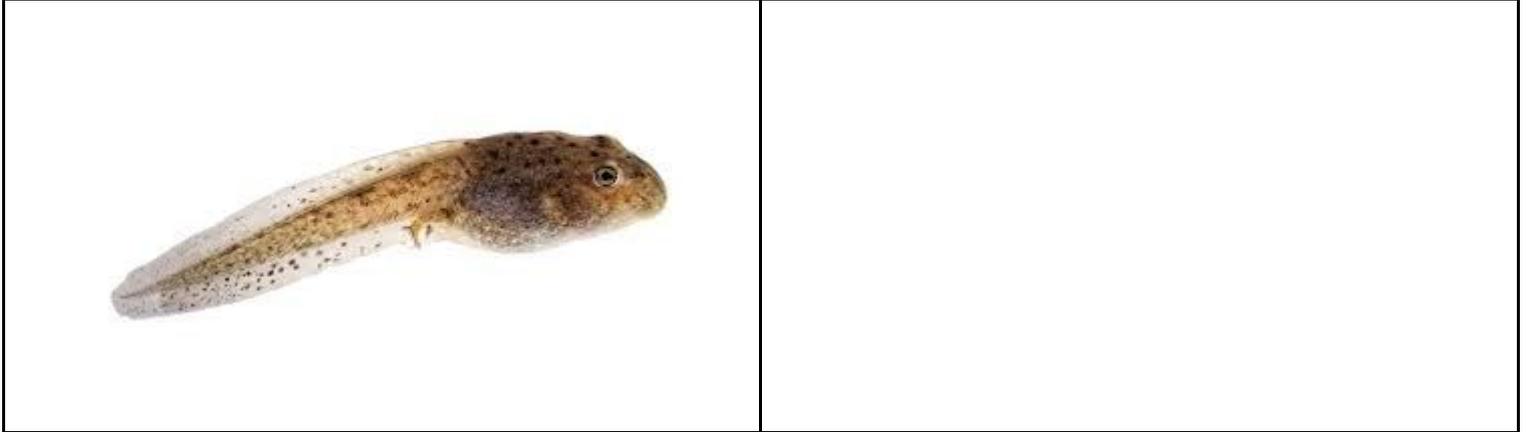


### Tadpoles

Tadpoles are small creatures that grow and change into frog or toads. The tadpole spends its time swimming in the water, eating and growing. Tadpoles have a long, wiggly tail for swimming with and a large head. They have gills to help them breathe underwater. They are usually dark brown, black or grey. They eat algae and water plants. It usually takes them 6-9 weeks to fully develop as a tadpole, however some types of frogs may take much longer.



Draw and label a picture of a tadpole.



How long does it take for a tadpole to fully develop?

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Around week 12, the tadpole sprouts legs (and then arms), has a longer body, and has a bigger head. It breathes under the water and still has a tail.



An adult frog breathes air and has no tail. This growth cycle, from egg to frog takes between 12 to 16 weeks. Frogs are amphibians. This means they live in water and on land. Although frogs spend most of the time on land, they need to be near water to keep their skin moist.



What is an amphibian?

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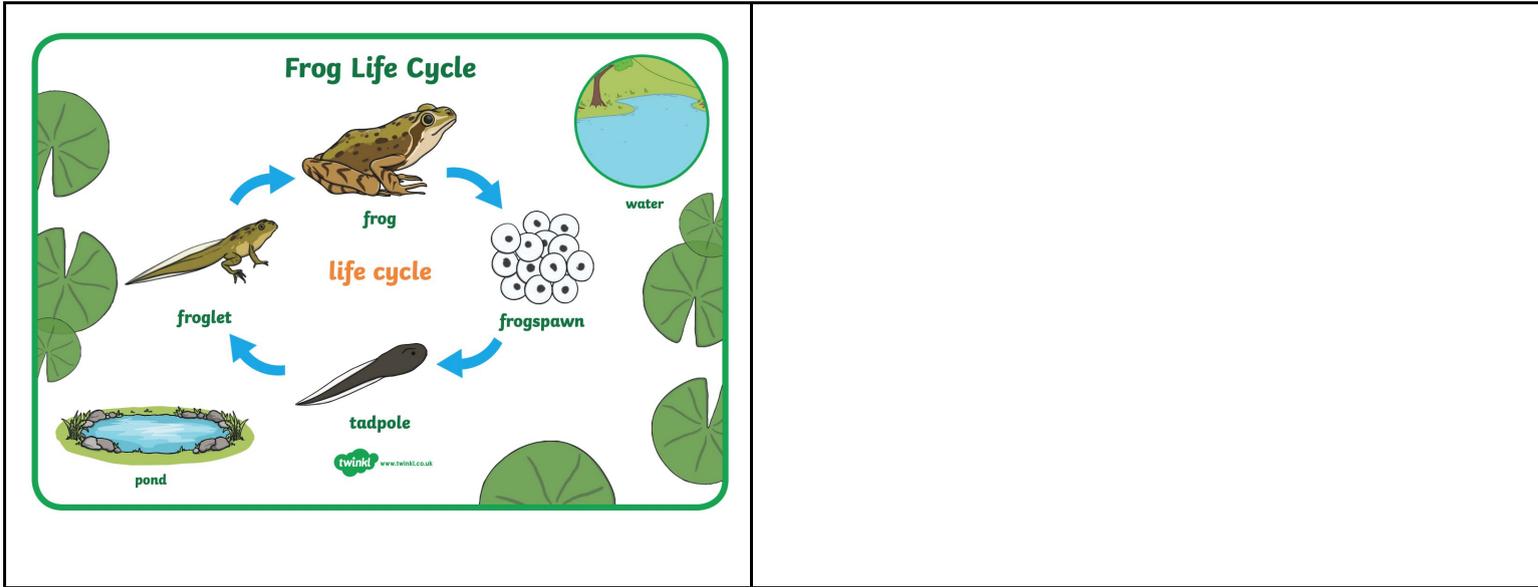
Order the life cycle of a frog. (1-4)

The tadpole spends its time swimming in the water, eating and growing.	
An adult frog breathes air and has no tail.	
Frog eggs also known as frogspawn are laid in a group in the water by a frog.	
Around week 12, the tadpole sprouts legs.	

Frogs have a long, sticky tongue near the front of their mouth. They use this to catch food. They have large eyes that usually stick out a little way from their heads. This means they can see forwards, upwards and sideways at the same time.

	Draw a picture of a frog. Label with noun phrases.

Draw and label the life cycle of a frog. Use key vocabulary.



Read the story The Princess and the frog.

With a partner, act out the story. Make a video and upload to SeeSaw.

**Challenge:** Describe the life cycle of a frog, use key vocabulary in your answer.

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Exit Ticket: True or False?



An amphibian is an animal who only lives in water.	
An amphibian is an animal who lives on both land and water.	

An amphibian is an animal who lives only on land.

## LESSON THREE: THE LIFE CYCLE OF A BEE

Date: \_\_\_\_\_

### Key Question: What is the life cycle of a Bee?

Glossary	
<i>Honeycombe</i>	A structure of hexagonal cells of wax made by bees to store honey and eggs.
<i>Nectar</i>	A sugary fluid secreted within flowers to encourage pollination by insects and other animals, collected by bees to make into honey.
<i>larvae</i>	The active immature form of an insect, especially one that differs greatly from the adult and forms the stage between egg and pupa.
<i>Pupa</i>	An insect in its inactive immature form between larva and adult, e.g. a chrysalis.
<i>Eva Crane 1912-2007</i>	A researcher and author on the subject of bees and beekeeping.

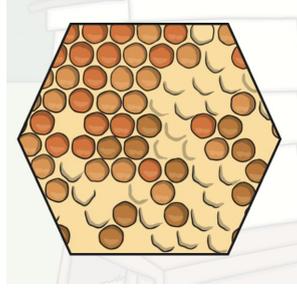
In a beehive, there are three different types of bee.



### Egg

The first stage in the life of a bee is when the queen bee lays an egg in a cell of the honeycombe. The queen is the only female bee able to produce eggs. She can lay fertilised eggs, which become worker bees, or unfertilised eggs, which become drones. The workers are all female and they collect nectar for

the colony. The drones are male and their job is to mate with the queen to fertilise the eggs. A cell is a small hole in the honeycomb. The honeycomb is made by the worker bees. The egg is long, thin and white.



Name three different types of bee

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

The larvae

After around three days, the egg hatches into a larvae. The larvae looks like a white worm. The larvae is fed royal jelly, which is made by the worker bees.

This is like a white liquid.



Then the larvae is fed bee bread. This is a mixture of honey and pollen. This is called the Pupa stage. After a few days, the cell is sealed by the worker bees with a lid of wax.

What is bee bread?

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## The Pupa

The Pupa grows but is no longer fed. The pupa spins a cocoon and begins to change. Its legs, eyes and wings grow in the cocoon. After 21 days from being a new egg, the pupa has become an adult bee.



## The Adult Bee

The fully grown adult bee bites the lid off the cell and climbs out. It is a light grey colour. It stays in the hive for 21 days. At 22 days old, the bee becomes a forager bee. This means it will fly to flowers and look for pollen. An adult bee can live for up to six weeks in the summer.



Retell the life cycle of a bee. Record yourself and upload to

SeeSaw. Use key vocabulary. (Queen Bee, Worker Bee, Drone Bee, Larvae, Pupa).

Draw and label the life cycle of a bee. Use key vocabulary.

### Life Cycle of a Bee

The diagram illustrates the four stages of a bee's life cycle within a honeycomb structure. Stage 1 (egg) is shown as a small white oval in a cell. Stage 2 (larvae) is shown as a segmented, worm-like creature in a cell. Stage 3 (pupa) is shown as a white, segmented pupa in a cell. Stage 4 (adult) is shown as a fully developed bee in a cell. The stages are numbered 1 through 4 in small circles next to their respective labels.

Blank space for drawing and labeling the life cycle of a bee.

# Eva Crane



Eva Crane was born in 1912 in London. She was originally a physicist and completed a PhD in nuclear physics. She married James Crane in 1942 and as a wedding present the couple were given a beehive. The person who gave them the present intended them to use the honey from the hive as a way to supplement their wartime rations. Eva Crane became so interested in bees that she started to research their behaviour and their life cycle.

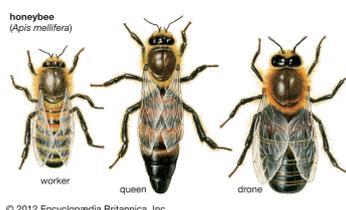
What did Eva Crane do?

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Between 1960 and 2000, Crane visited many different countries to research different ways of caring for bees and the differences between species of bees. She wrote several books about her discoveries, including two encyclopedias that are still considered to be the most important books about beekeeping.



What are the four main stages of a life cycle of a bee?

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In 1989, Crane reported that some species of bees were dying out. Since then, populations have continued to decline. The adult bees from the hive have disappeared, leaving behind the queen, the eggs and the larvae. They cannot survive without the other adult bees to care for them so the entire hive dies.



Go outside and look for bees. Keep a tally of how many you see.

Make a bee bath using a bath, pebbles and a sugar and water solution.

**Challenge:** Why do you think is it important to protect the bees?

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Exit Ticket: Draw and label a picture of a bee.

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## LESSON FOUR: THE BIRD LIFE CYCLE

Date: \_\_\_\_\_

**Key Question: What is the life cycle of a chicken?**

Glossary	
<i>Fertilized egg</i>	Only when a hen has mated with a cockerel and layed an egg can an egg be fertilized to produce a chick.
<i>Chick</i>	A young bird, especially one newly hatched.
<i>Hen</i>	A female bird.
<i>Cockerel</i>	A male bird.
<i>Breed</i>	Cause an animal to produce offspring.
<i>Flock</i>	A number of birds of one kind feeding, resting or travelling together.



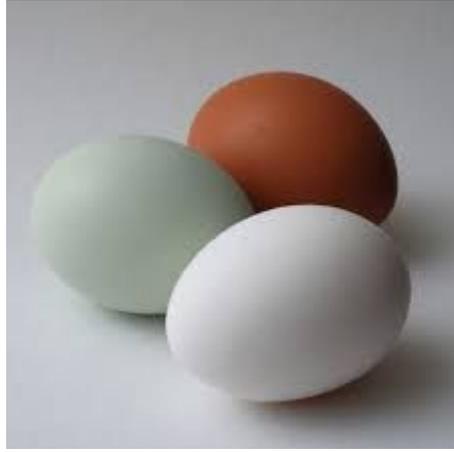
Chickens are the most common bird on earth. Chickens live in groups called flocks. There are about 60 breeds. Chickens eat worms, insects, seeds, grains, fruits and vegetables.

Write a list of food chickens like to eat, you should use commas in a list.

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# Egg



During the first stage of a chicken's life cycle, the hen lays an egg. Chicken eggs can be brown, white, blue, bluish green and pink. Only if the egg is fertilized by a cockerel, can it become a chick. The hen keeps the eggs warm by sitting on them.

True or false?



Chickens are the most common birds on earth.	
Chicken eggs can be red, green, orange and purple.	
A cockerel is a male chicken, a female is called a hen.	

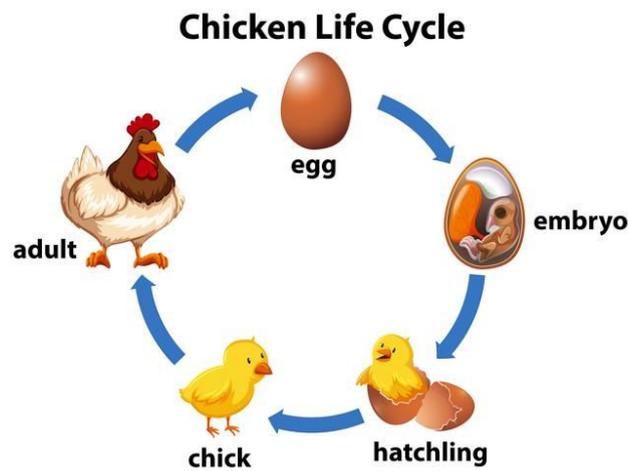
# Chick



The baby chickens are called chicks, the chick hatches from an egg. It pecks a hole in the shell with its egg tooth. They are covered in tiny, soft, fluffy feathers called down to keep them warm.

### Hen or cockerel

The chick grows up and changes over time into a chicken. Chickens can live between 10 and 15 years. Chickens are raised for their meat and eggs. Female chickens are called hens and male chickens are called cockerels. Cockerels are bigger and more colourful than hens. They do a little dance to impress the hens. Hens can lay around 300 eggs every year.



Draw the life cycle of a chicken, label with key vocabulary.



Retell the life cycle of a chicken. Record yourself and upload to

SeeSaw. Use key vocabulary. (egg, fertilised, hen, cockerel, chick)



Describe what a cockerel looks like using noun phrases.

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**Challenge:** What would happen if a piece of the chicken's life cycle was missing?

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**Exit Ticket:** Name the three stages of a chicken's life cycle.

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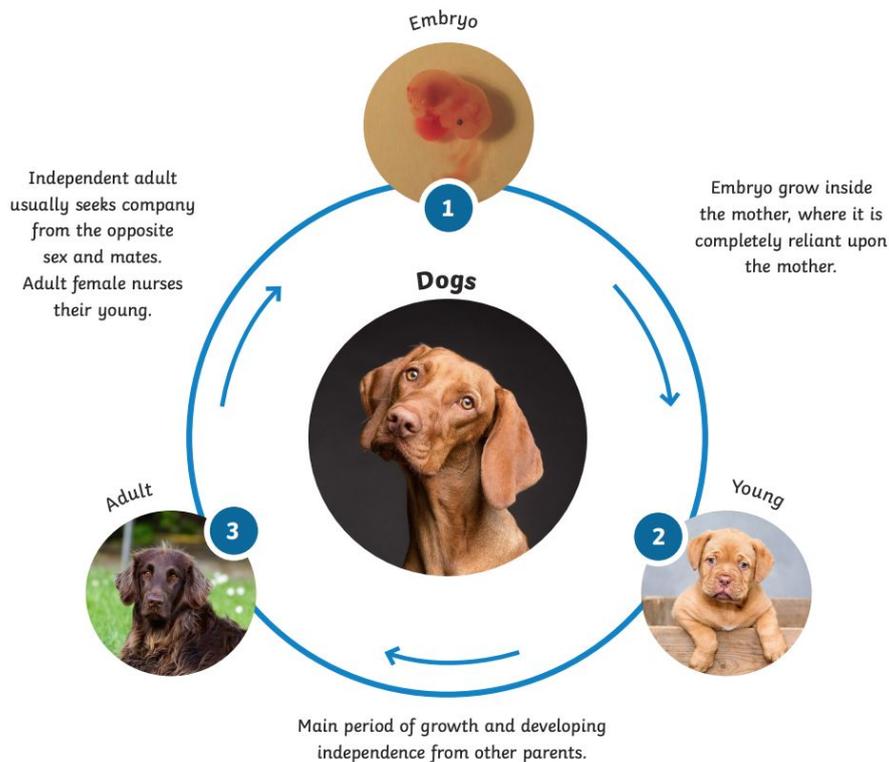
# LESSON FIVE: THE MAMMAL LIFE CYCLE

Date: \_\_\_\_\_

## Key Question: What is the life cycle of a human?

Glossary	
<i>Mammal</i>	A warm blooded vertebrate animal of a class that is distinguished by the possession of hair or fur, females give birth to live young.
<i>Baby</i>	A very young child.
<i>Toddler</i>	A toddler is a small child 12 to 36 months old.
<i>Adolescent / Teenager</i>	A young person in the process of developing from a child into an adult.
<i>Independent child</i>	Capable of doing lots of things successfully without adult help.

## The Mammal Cycle



### Other Mammals



Just like other animals, humans have a life cycle.

## The human life cycle



## Baby



The human life cycle starts with the baby stage. When babies are born, they can't do anything for themselves. Up until they are six months old, babies don't eat normal food, they only drink milk. It isn't like the milk you might put on your cereal, it has all the things a baby needs to grow properly.

Babies need lots of sleep. They don't usually sleep all the way through the night but they will often sleep during the day as well.

Babies can't talk, when something is wrong, they will let people know by crying.



Pretend you are holding a baby. Show how you would carry the

baby to keep it safe. Take a photo and upload it to SeeSaw.

## Toddler

The toddler stage is when a child is starting to toddle, which means wobbly walking. The toddler stages are from ages 1 to 3.

As well as learning to walk, toddlers go through lots of other changes.

- Their teeth start to grow.
- They start learning to talk.
- Toddlers start learning to eat lots of food and to feed themselves.

Toddlers still can't do many things for themselves and need lots of help from their grown-ups.

Write down three things that happen during the toddler stage?

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**Challenge:** What is the difference between a baby and a toddler?

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## Child



This is the stage you are at now. You are learning to be independent, which means there are more things you can do on your own.

**Talking point:** What can you do on your own now that you used to need help with?

An important part of this stage is starting school. This stage is full of lots of changes and children learn to do lots of things such as:

- Reading
- Writing
- Counting
- Riding bike
- Swimming

Write a list of all the things you can do independently. Remember to use commas in a list.

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True or False? Tick the correct answers.

The human life cycle starts with the baby stage.	
The toddler stages are from ages 1 to 3.	
The toddler stages are from ages 30 to 40.	

## Teenager



The teenage stage is from ages 13- 19. Teenagers are getting ready to be adults and are becoming independent. Teenagers' bodies change a lot during this stage. They get taller and start to look more like adults. These changes are because of things called hormones. Hormones are things inside your body that make your body change.

Because they are growing so quickly, some teenagers eat a lot. Many teenagers like to sleep for a very long time. Some teenagers can be a bit grumpy at times!

Do you know any teenagers? What are they like?

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## Adult



Being an adult is also called being a grown-up. There are lots of things that grown-ups can do. A lot of adults get jobs and live on their own, with friends or with a partner. At some point, many adults have children of their own, which starts the human life cycle again.

What job would you like to do when you are an adult?

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## Old age



Old age is the later stage of being an adult. Older people retire, which means they stop working. This means they have plenty of time to enjoy themselves. They may find a new hobby or spend extra time with their grandchildren.

Some old people have grey or white hair. Sometimes old people might move more slowly because their joints and muscles ache. Older people's eyes might not work as well so they might need glasses for reading or seeing far away.

When you are older and your children have become grown-ups and they have children, you become a grandparent.

What is the life cycle of a human?

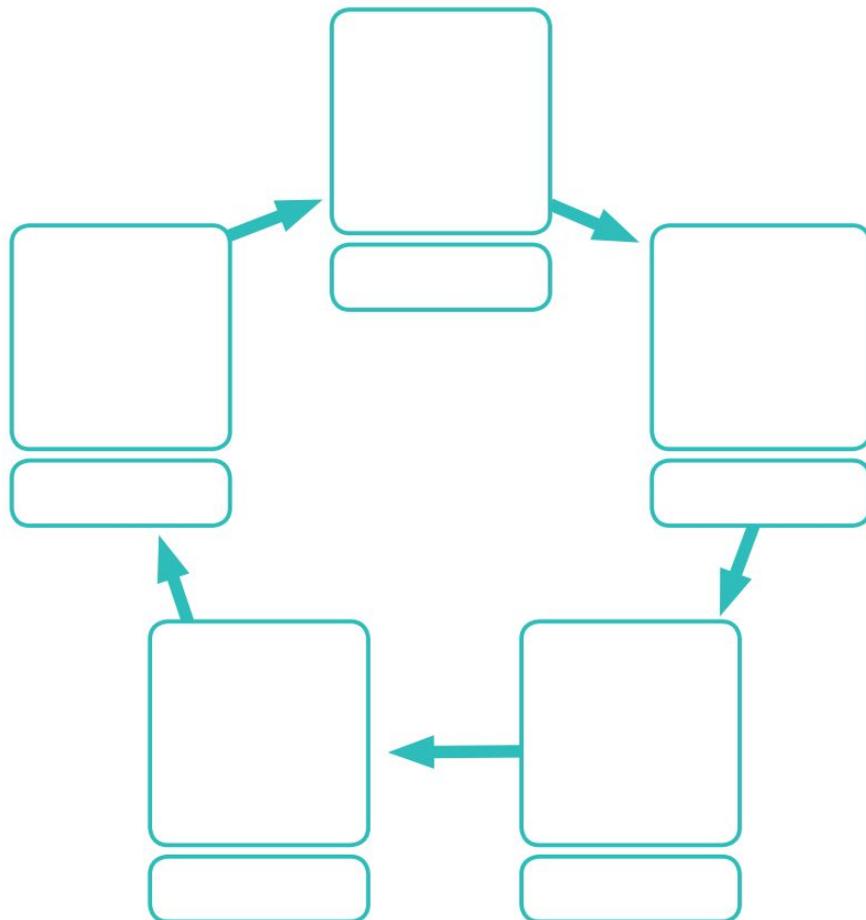
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Exit Ticket: Draw the life cycle of a human. (Baby, toddler, child, teenager, adult)



## LESSON SIX: LIFE CYCLES

Date: \_\_\_\_\_

**Key Question: What similarities and differences are there between different life cycles?**

Write a nature diary about different life cycles.  
Include facts about insect, amphibian, bird and mammal life cycles.  
Stick your nature diary into your booklet

**INSERT NATURE DIARY**

Write down one fact you learnt about life cycles that you didn't know before.

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**Challenge:** What is similar and different to the mammal life cycles and the insect life cycles?

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**Exit Ticket:** design and make a bug hotel using natural resources to support the insect life cycles.

Take a photo, upload to SeeSaw and insert here