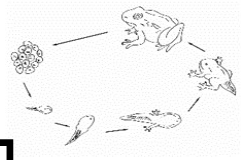
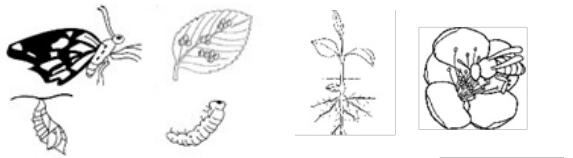
ok

In this unit we will



Life Cycles



1. Review and revise the stages in plant life cycles
2. Compare & contrast insect and amphibian life cycles
3. Study the life cycle of birds
4. Look at mammal life cycles and how they can differ from one another
5. Study the different stages of the human life cycle
6. Learn about the changes that occur in human development, including puberty

Science Skills that we will develop:

Explaining Science

1. I use complex science words correctly
2. I use a science model to describe and explain
3. I draw & annotate diagrams to help describe/explain

Data, tables & Graphs

I use a frame to construct a graph and begin to scale axes

ok

Revise the life cycle of amphibians & insects

Make comparisons between amphibian & insect life cycles

Learn about the life cycle of birds and the development of an egg

Draw & annotate the bird life cycle

Diary entry of a developing chick

ok

amphibian – vertebrates that are typically four-limbed and cold-blooded (body temperatures are regulated by their surroundings); spend part of their lives living in water and part of it on land.

metamorphosis – the way some insects and amphibians change in their life. Rather than just growing bigger, they actually change form, like butterflies.

gills – the organs that fish, amphibians, and some other animals use to breathe in water. They absorb oxygen dissolved in water into the animal's blood, and allow carbon dioxide to move out.

tadpole – a young frog that breathes and lives in the water.

spawn – a mass of eggs released into water by a female fish or amphibian.

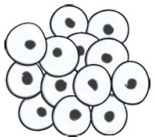
The Life Cycle of a Frog

How many parts of the life cycle can you remember?

ok

The Life Cycle of a Frog

Eggs are laid in clumps (spawn) in water, often in shallow areas. Spawn appears in spring, usually in February or March



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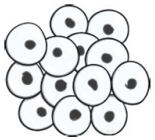

Over 7 to 9 days, embryos develop inside the eggs. These develop and hatch into tadpoles.

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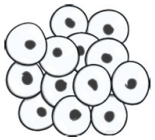

Over 7 to 9 days, embryos develop inside the eggs. These develop and hatch into tadpoles.

The tadpoles develop gills – feathery organs that absorb dissolved oxygen in the water. Carbon dioxide passes out of the tadpole's bloodstream through the gills.

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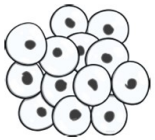

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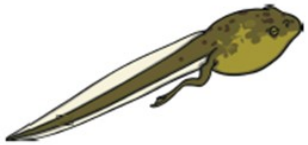

Over the next 14 weeks, the tadpole eats plants and develops, growing two hind legs

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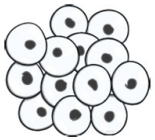

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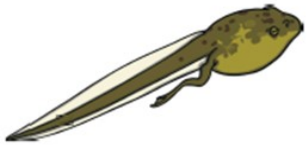

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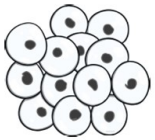

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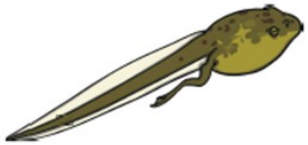

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Once the tail has shrunk to just a stub and the lungs have replaced the gills, the froglet leaves the water and can live on land. It continues to grow in size until it becomes and adult frog.

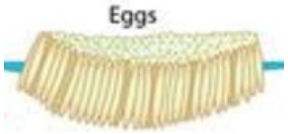
ok

Life Cycle of the Mosquito - complete metamorphosis

Can you remember the four stages?

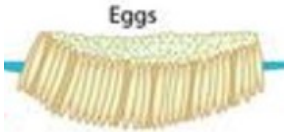
ok

laid in a 'raft' on water surface

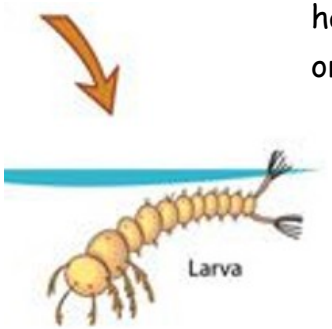


ok

laid in a 'raft' on water surface



hatches out and eats micro-organisms in the water.



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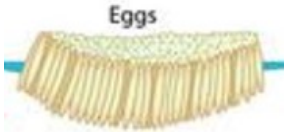

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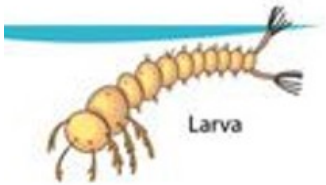
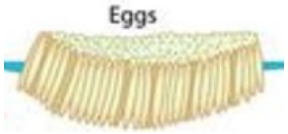
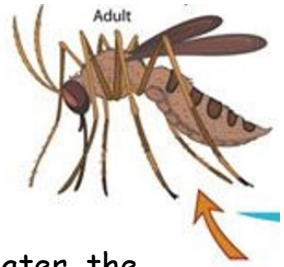


After growing and shedding its skin four times, it becomes a pupa. Metamorphosis occurs.

ok

laid in a 'raft' on water surface





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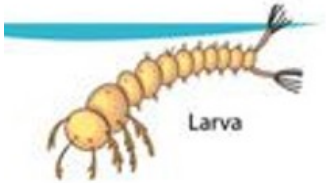


Only four days later, the adult emerges and rests on the water surface until its wings dry and harden.

After growing and shedding its skin four times, it becomes a pupa. Metamorphosis occurs.

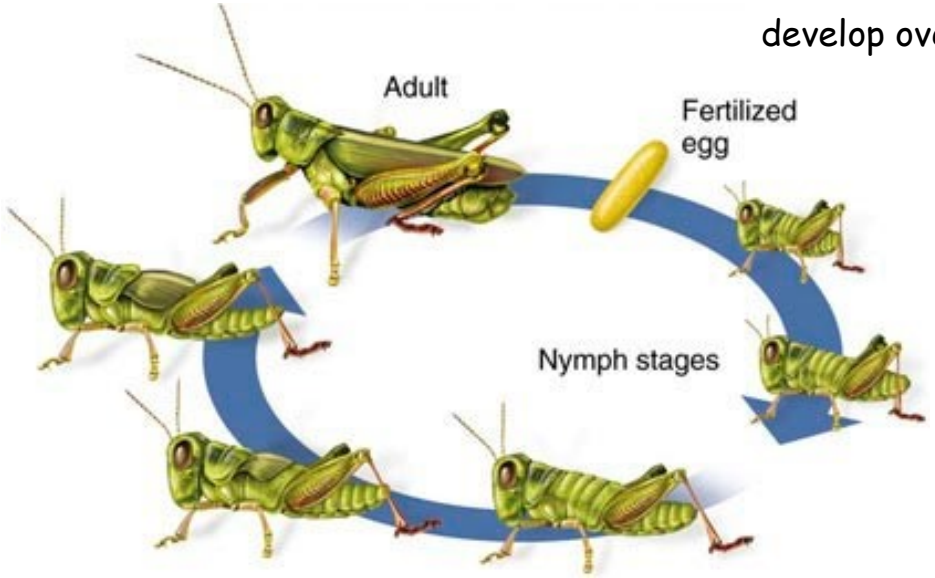
ok

Incomplete metamorphosis - the life cycle of a cricket.

Tell your partner the different stages.

ok

The female lays up to 100 eggs in soil or on a plant. Embryos develop over 14 days



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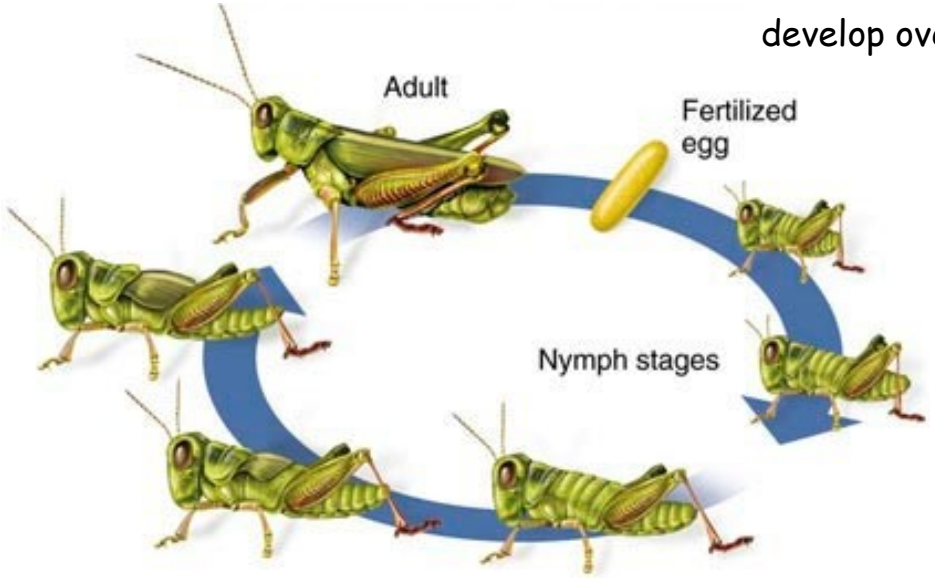

The nymph crickets are very small when they emerge - about 3mm in length. They look like adults, but are not fully developed and have no wings.

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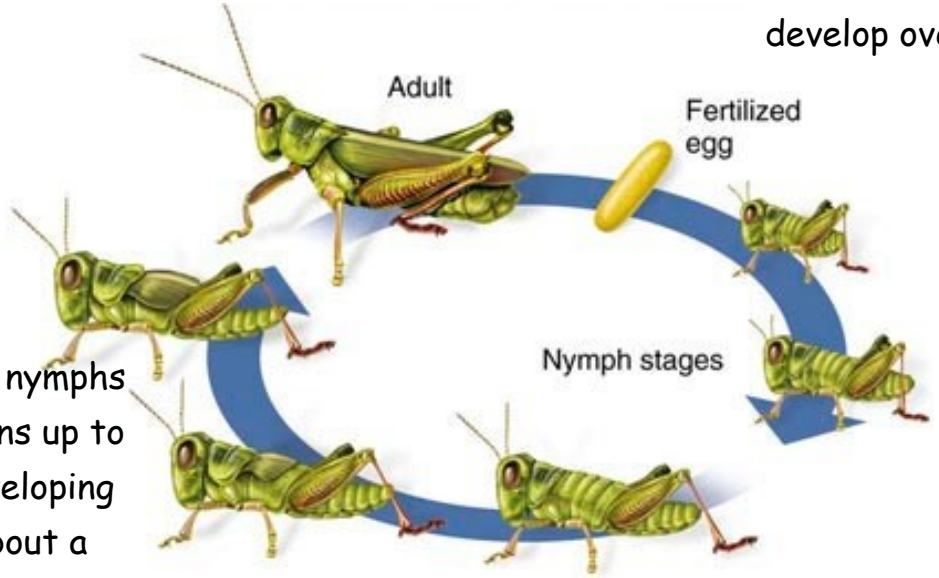

The nymph crickets are very small when they emerge - about 3mm in length. They look like adults, but are not fully developed and have no wings.

As they grow, nymphs shed their skins up to ten times, developing wings after about a month.

Adult crickets measure about 25mm in length

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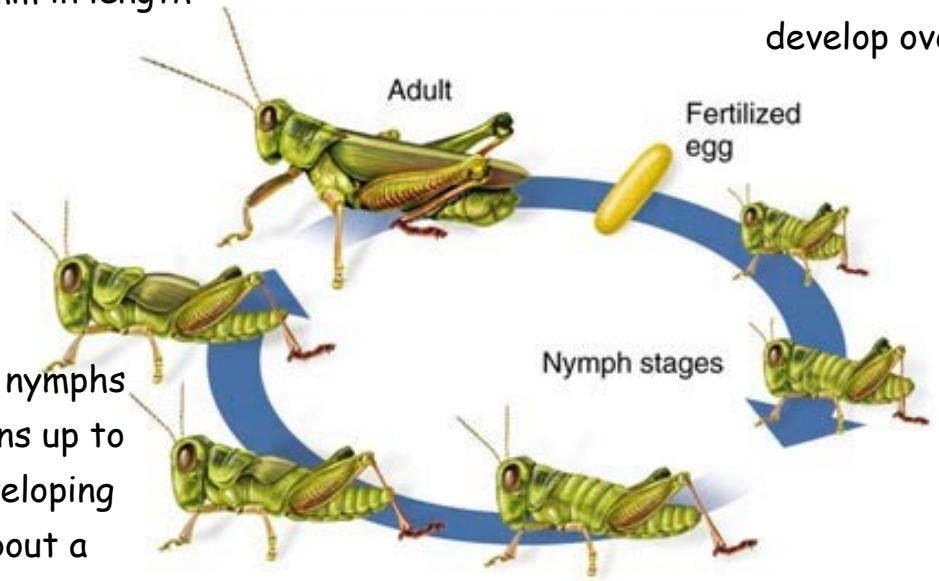

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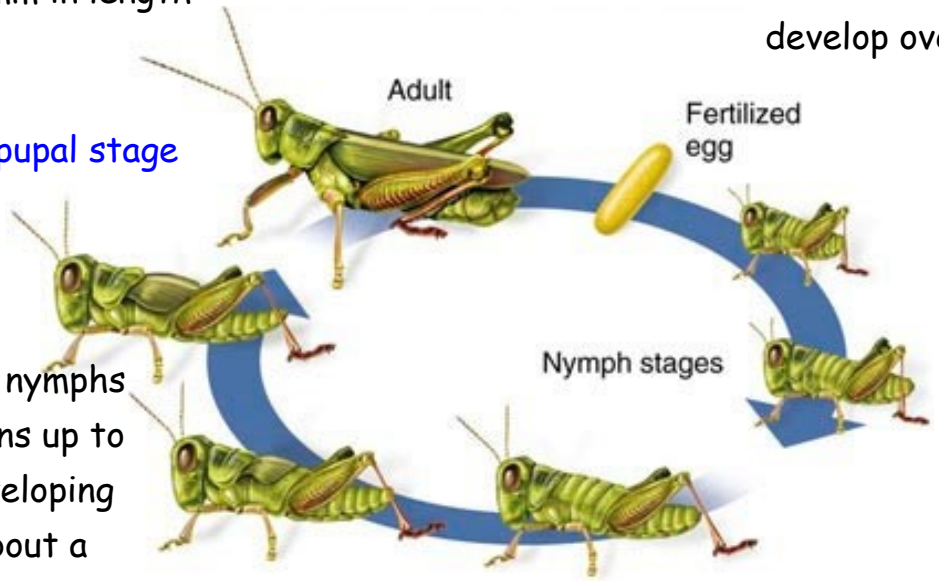
There is no pupal stage



There is no larval stage

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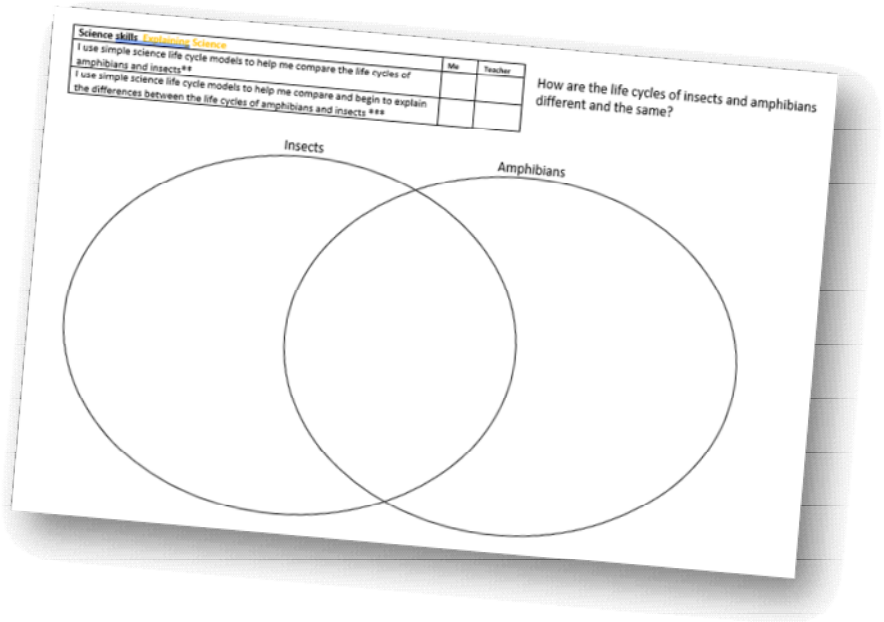
As they grow, nymphs shed their skins up to ten times, developing wings after about a month.

Discuss with a partner: what are the main differences between amphibian and insect life cycles? Are there any similarities?

ok

Science skills Explaining Science	Me	Teacher
I use simple science life cycle models to help me compare the life cycles of amphibians and insects**		
I use simple science life cycle models to help me compare and begin to explain the differences between the life cycles of amphibians and insects ***		

Use your Venn diagram sheet to compare the life cycles of amphibians and insects. Think about the similarities as well as the differences.



ok

L.O. Understand the main stages and features of the bird life cycle.

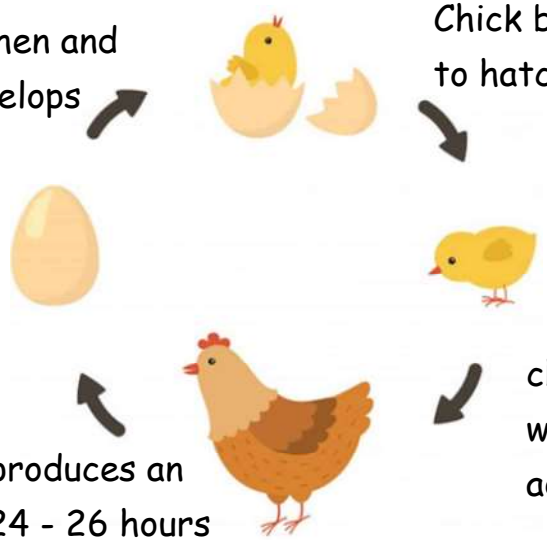
Can you say what the defining features of all birds are?
Discuss with your partner.

Birds are a group of warm-blooded (able to keep their own body temperature steady) animals. They are vertebrates (have backbones), and are characterised by feathers, toothless beaked jaws, the laying of hard-shelled eggs, a four-chambered heart, and a strong yet lightweight skeleton.

Birds live worldwide and range in size from the 5.5 cm bee hummingbird to the 2.8 m ostrich. There are about ten thousand living species.

A bird's life cycle is fairly straightforward (no metamorphosis) - adult bird lays an egg; embryo develops; chick hatches and grows into adult.

If the egg is fertilised after hen and rooster mate, the embryo develops over 21 days



Chick breaks through shell (the 'pip') to hatch - can take up to 18 hours

chick takes about 16 - 24 weeks to become a mature adult

Adult hen produces an egg every 24 - 26 hours

ok

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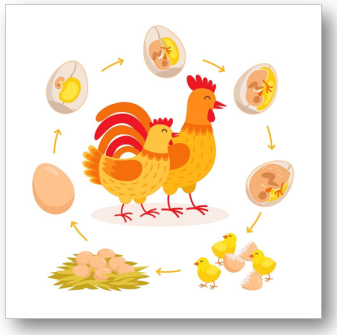

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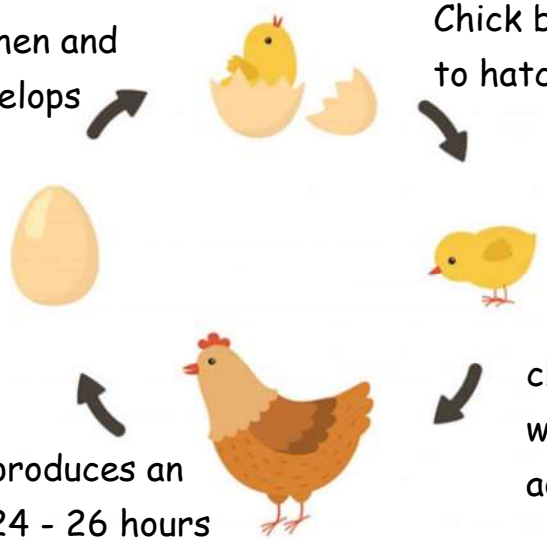
Use this screen to annotate your version



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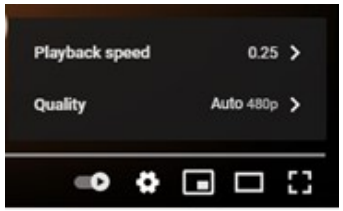
chick takes about 16 - 24 weeks to become a mature adult

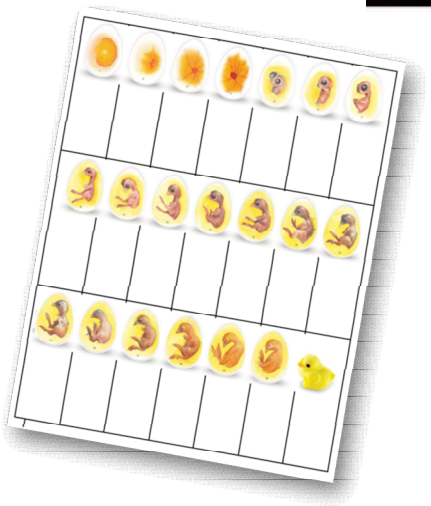
Adult hen produces an egg every 24 - 26 hours

The really interesting part of the life cycle, however, is the one we cannot usually see: the development of the embryo within its shell into a chick. Watch this short video, noting how quickly different parts of the chick develop.

ok

Now watch the video again at a quarter speed:





As it plays, make short notes about the different stages on this sheet - you will need these notes for other parts of the lesson, but they will not be kept in your books.

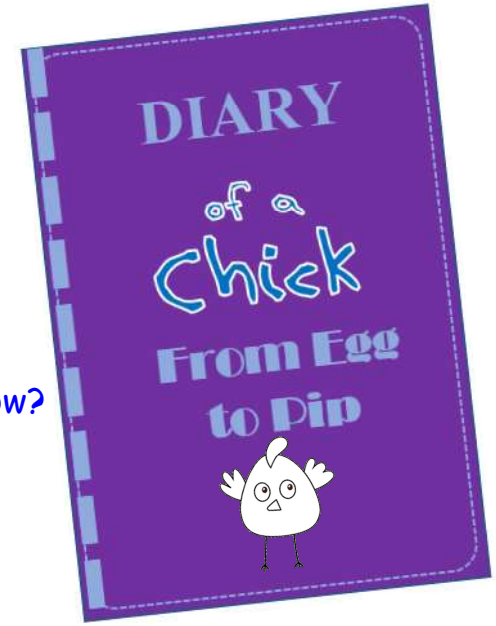
Did you find out anything surprising from the video? Is there any part of the development of the chick embryo that you find particularly interesting? Why?

Now use your notes to annotate the rest of this life cycle diagram in your book. For the embryo development, choose any four facts that fit the pictures.

ok

Science skills Explaining Science	Me	Teacher
I use simple science words correctly to describe the development of a chick *		
I begin to use some complex science words correctly to describe the development of a chick in more detail **		
I use complex science words with confidence to describe in detail the development of a chick ***		

Imagine that your are a newly-hatched chick; it's been quite a journey over the last 21 days, but you've made it out safe and well. How might you feel at this point? What would you remember about your time inside the egg? Which bits did you enjoy the most (or least)? What are you looking forward to now?



Your task is to write a **diary entry**, describing what it has been like as a chick, up to the point of hatching out. You will need to show how much you have taken in from this lesson, by writing about different stages of your development from embryo to chick.

ok

Science skills Explaining Science	Me	Teacher
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I begin to use some complex science words correctly to describe the development of a chick in more detail **		
I use complex science words with confidence to describe in detail the development of a chick ***		

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Day 21

I've made it! It took me almost seventeen hours to 'pip' through my shell with my special egg tooth, so I'm exhausted, but my feathers are drying out nicely. Ever since my heart started beating on day two, it's been an exciting journey, especially the time when...