Science Task

To compare the life cycles of two different animals.

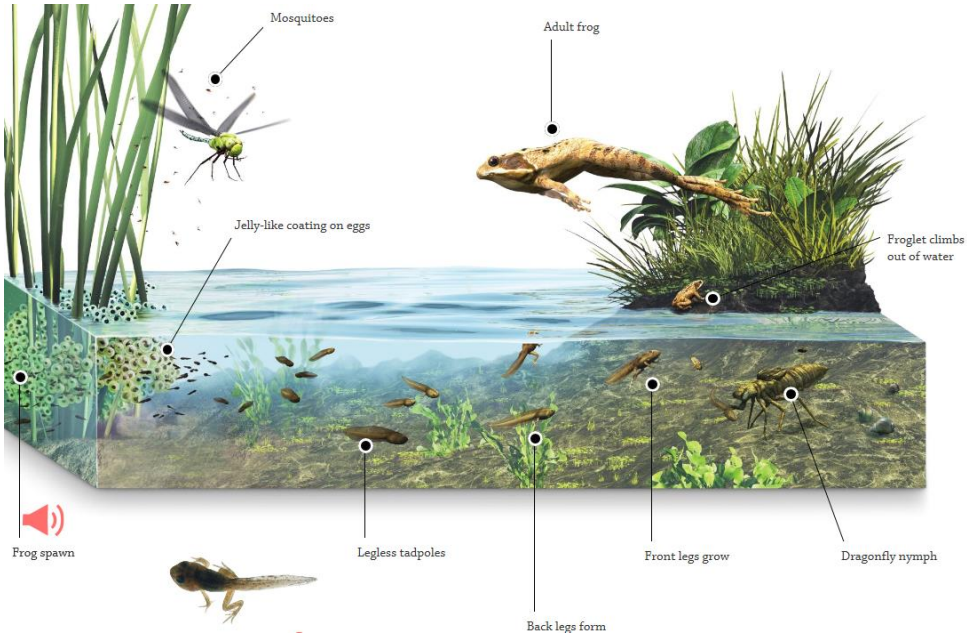
Like we learnt last week, all living things follow a life cycle specific to their species. Some are as short as a few hours or days while others last for hundreds of years. Because it is a cycle, there is no start or end point, but rather a continuous flow. Some species produce offspring that are very similar to the adult form, such as most mammals, birds and reptiles. Others produce a larval form that undergoes a complete metamorphosis before emerging as an adult form that is capable of reproduction.

Your task is to explain the life cycle of two different animals of your choice and to then compare them. Consider how you will present it so that it is clear that it is an ongoing cycle. You must include illustrations as well as detailed explanation with scientific vocabulary. You then need to comment on the similarities and differences between the two life cycles.

Make sure the two animals you choose are from different groups of animals to make them easier to compare e.g. insect, amphibian, bird etc. You can use your own knowledge or research as well as the information on the following pages.

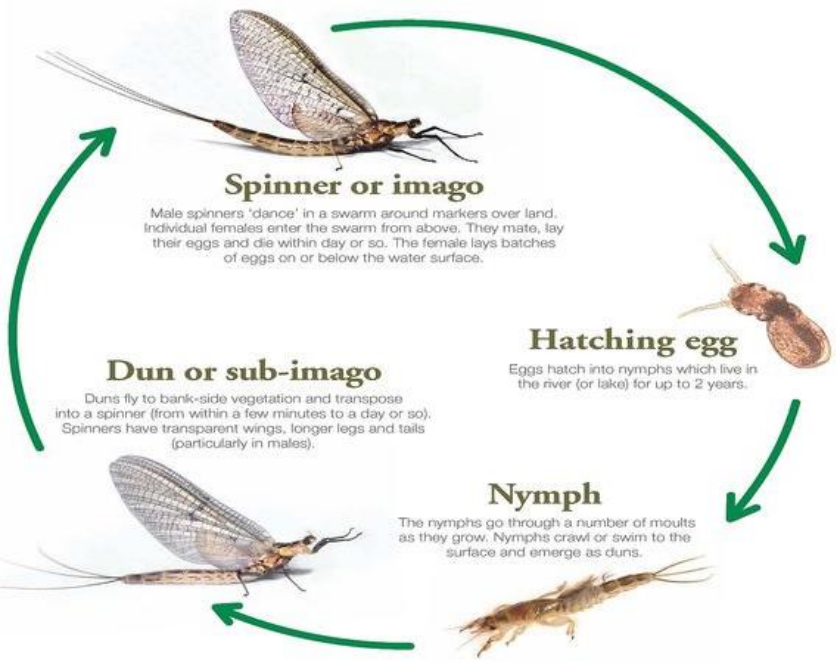
You must include:

- Two labelled diagrams of different life cycles
- Additional information related to both of the life cycles
- Scientific vocabulary
- An explanation of the similarities and differences between the two



The Mayfly Life Cycle

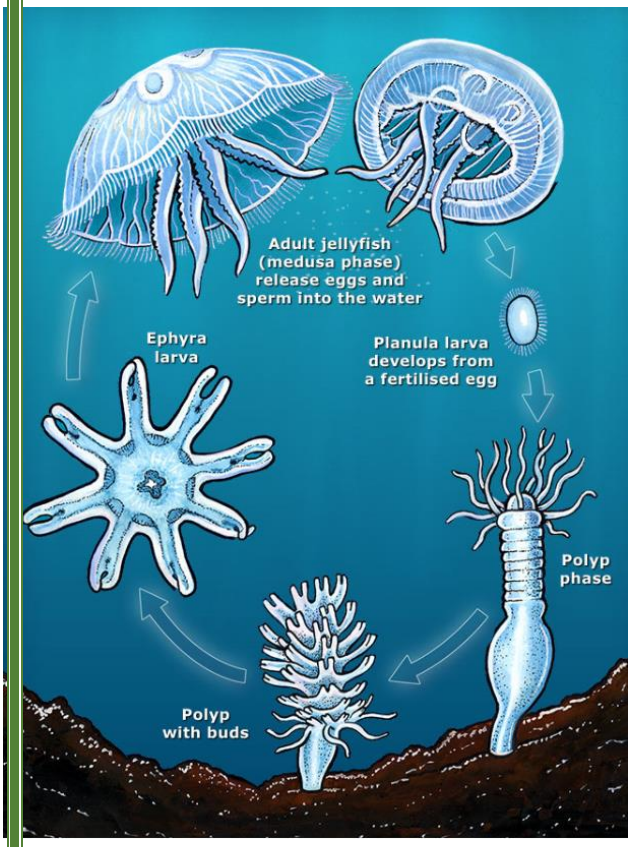
Mayflies are amongst the most ancient type of insect still alive today. They were here about 100 million years before the dinosaurs. There are over 3000 types of mayfly. Mayflies are so primitive that they are the only insect still around today that has two stages to the adult part of its life cycle. These are called sub-imago and imago. Mayflies have four stages to their lifecycle – egg, nymph, sub-imago and imago.



Male mayflies form a swarm just above the water, females fly into the swarm to mate. After mating in flight, the female falls onto the surface of the water and lays her eggs. They are often eaten by passing fish as she lies on the water. The male goes off to nearby land to die.

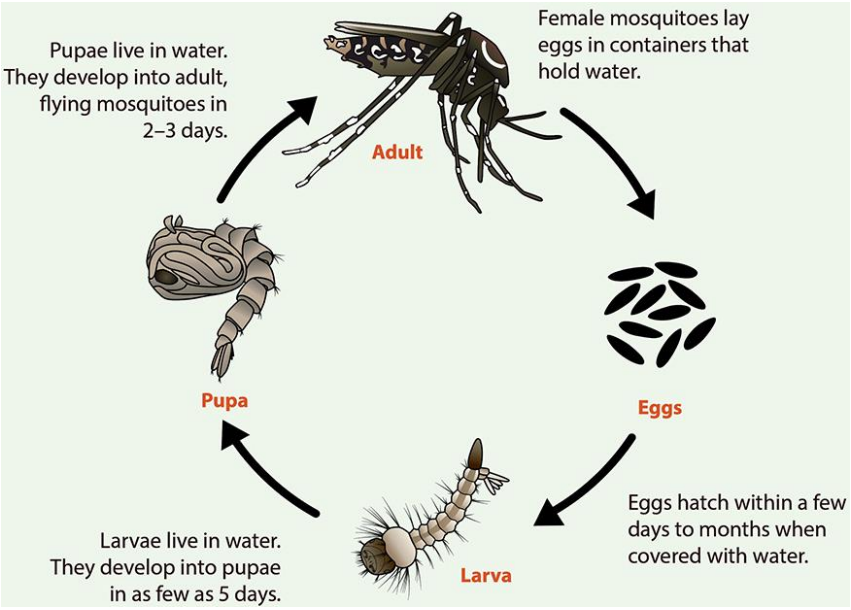
The eggs sink to the bottom of the river where they stick to plants and stones. They take between a few days and a number of weeks to hatch. When they hatch into nymphs, they can spend up to 2 years at the bottom of the river before finding their way to the surface to emerge as adult mayflies.

The sub-imago pulls itself up on plants and dries its wings. It then sheds again and becomes an imago and starts the cycle again.



The Jellyfish Life Cycle

Jellyfish have a stalked (polyp) phase, when they are attached to coastal reefs, and a jellyfish (medusa) phase, when they float among the plankton. The medusa is the reproductive stage; their eggs are fertilised internally and develop into free-swimming planula larvae. After a brief period floating about in surface waters, the larvae settle to the sea floor, attaching themselves at one end. There they develop into polyps and begin to feed and grow. In spring, some of the polyps start to bud off immature jellyfish known as ephyra larvae. These grow into mature jellyfish.



The Mosquito Life Cycle

Stage 1 – Egg
This is the first stage where a female mosquito, after drinking the blood of a living being, lays 40 to 400 tiny eggs on stagnant or extremely slow moving water. Most eggs hatch into larvae within 48 hours while others might withstand subzero winters before hatching.

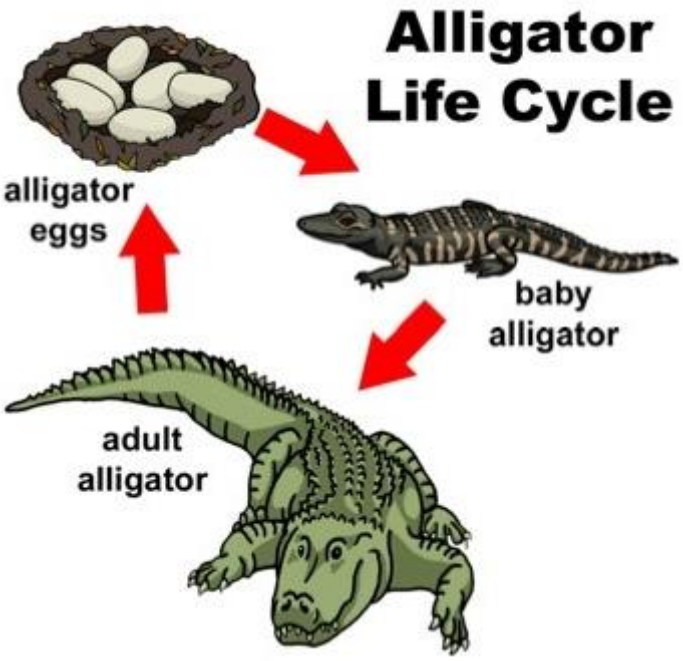
Stage 2 – Larva
The larvae (plural) poke a tube on the surface of the water to breathe air. They shed their own skin or molt four times and grow larger with every shed. They feed on microorganisms or organic matter found in the water.

Stage 3 – Pupa This is the resting and non-feeding stage of development. But this is a mobile stage where the pupae respond to light changes, turn upside or move to a shelter. At this stage the pupa changes into an adult just like the metamorphosis happens when a caterpillar changes into a butterfly. The pupal skin splits and out comes an adult mosquito.

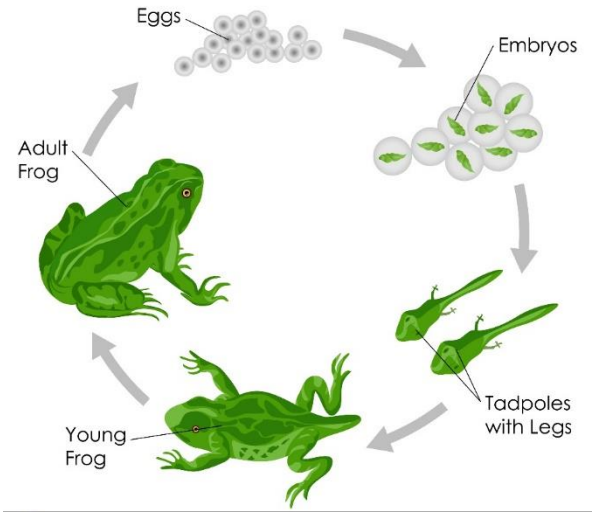
Stage 4 – Adult
For a short while the new adult stays on the surface of the water to allow its body parts to harden. Its wings also become dry and strong before it can fly, feed on blood and mate. An adult has a life span of 2 weeks to 6 months depending on the surrounding temperature.

The Alligator Life Cycle

Alligators have a life cycle like every other living thing. The alligator's life starts in its egg. It uses its egg tooth to break out of the egg. Then it crawls out and hunts for food. The alligator will stay with its mom for a year then it will live on its own. When the baby alligator grows up it could live to be 50 to 80 years old. During its lifetime the female alligator will build a nest then cover it with mud and put its eggs inside. The female may lay up to 10 to 70 eggs. When the eggs hatch the life cycle starts over.



The Frog Life Cycle



Many species lay their eggs in calm water among vegetation, where the eggs can develop in relative safety. The female frog lays numerous eggs in masses that tend to clump together in groupings known as spawn. As she deposits the eggs, the male releases sperm onto the eggs and fertilizes them.

In many species of frogs, the adults leave the eggs to develop without further care. But in a few species, parents remain with the eggs to look after them as they develop. As the fertilized eggs mature, the yolk in each egg splits into more and more cells and begins to take the form of a tadpole, the larva of a frog. Within one to three weeks, the egg is ready to hatch, and a tiny tadpole breaks free.

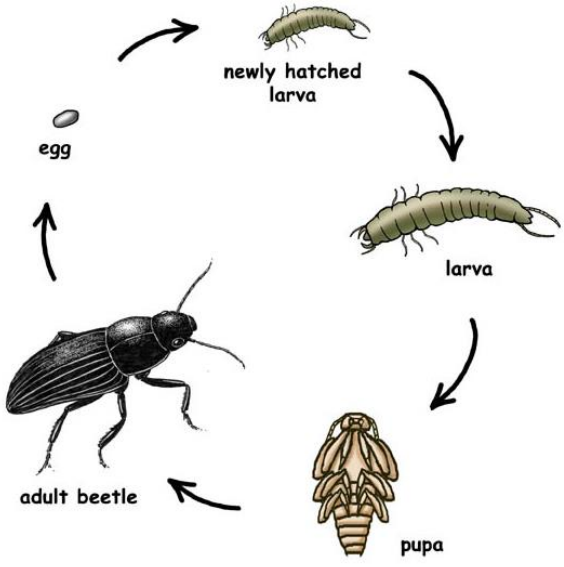
Tadpoles, frogs' larvae, have rudimentary gills, a mouth, and a long tail. For the first week or two after the tadpole hatches, it moves very little. During this time, the tadpole absorbs the remaining yolk left over from the egg, which provides much-needed nourishment. After absorbing the yolk, the tadpole is strong enough to swim on its own.

Most tadpoles feed on algae and other vegetation, so they are considered herbivores. They filter material from the water as they swim or tear away bits of plant material. As the tadpole continues to grow, it begins to develop hind limbs. Its body elongates and its diet grows more robust, shifting to larger plant matter and even insects. Later in development, front limbs grow and tails shrink. Skin forms over the gills.

At approximately 12 weeks of age, the tadpole's gills and tail have been fully absorbed into the body, meaning that the frog has reached the adult stage of its life cycle. It is now ready to venture out onto dry land and, in time, repeat the life cycle.

The Common Ground Beetle Life Cycle

Eggs: It begins with the female beetle laying hundreds of tiny, oval white or yellow eggs, usually on a leaf or in rotten wood. (Some female beetles keep their eggs inside of them and give birth to live larvae). It usually takes from 4 – 19 days for the eggs to hatch. They then enter into the 'larval stage'.



Larvae: At this stage, they will eat a tremendous amount of food and continue to grow, shedding its exoskeleton many times while it grows. Most beetles pass through 3 – 5 stages during the larval period and some can even have up to 30 stages whereas other beetles can have only 1 stage as larvae.

Pupa: It then enters into the 'pupal stage' which can take up to 9 months and usually happens over the winter period. After pupating, an adult emerge, and there you have your beetle.

Adult Beetle: This beetle will then feed, mate and if it is a female, she will lay eggs for the beginning of another generation.