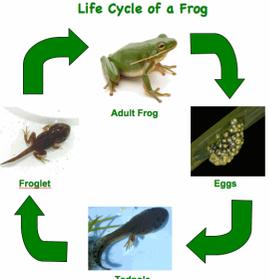
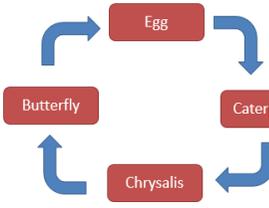


River Bank Primary Knowledge Organiser		Year 5 Science	Summer 1	Circle of Life
		<b>Life cycles involving metamorphosis</b>		<b>Fertilisation</b>
reproduction	the action or process of copying something.	<p><b>Life Cycle of a Frog</b></p>  <p>Frogs start off life as a big mass of eggs called frogspawn. The eggs then hatch into tadpoles. The tadpoles gradually grow a set of back legs, and then a set of front legs. They lose their gills, and their tail shrinks. They can now begin to live on land.</p> <p>A butterfly starts its life cycle as an egg. This hatches into a caterpillar. Eventually, the caterpillar forms a chrysalis around itself. Inside the chrysalis, it changes dramatically, undergoing <b>metamorphosis</b>, before emerging from the chrysalis as an adult butterfly.</p> 		Male animals produce sperm.
bulb	a rounded underground storage organ present in some plants, lying dormant over winter.			These have half of the information needed to make a whole new animal.
pollination	the transfer of pollen to a stigma, ovule, flower or plant to allow fertilisation.			Female animals produce eggs. These also have half of the information needed to make a whole new animal.
fertilisation	the action or process of fertilising an egg (in a plant or animal) involving the fusion of male and female cells to form a whole new offspring.			When a sperm meets an egg they join together.
sexual reproduction	the production of new living organisms by combining information from two individuals of different sexes.			The egg now has all the information needed to make a new baby animal.
asexual reproduction	a type of reproduction where the offspring obtain all of their information from just one individual (one parent).			This is called fertilisation
larva	the active, immature form of an insect.			
gestation	the process of developing inside the womb between conception (fertilisation) and birth.			
metamorphosis	the process of transformation from an immature form to an adult form in two or more distinct stages (in insects and amphibians).			
sperm	cells inside the male reproductive fluid, semen, which contain one half of the information required to make a new offspring of that species.			
ovum / egg	the cell inside a female containing half of the information required to make a new offspring of that species.			
life cycle	the series of changes in the life of an organism including reproduction.			
<b>Plant sexual reproduction</b>		<b>Internal fertilisation</b>		<b>Fertilisation in mammals</b>
<p>The stamen is the male part of the flower which holds pollen - this contains one half the information needed for making a new plant.</p> <p>The carpel is the female part of the flower which contains eggs. Eggs contain one half of the information needed for making a new plant.</p> <p>Pollen travels from the anthers of one flower to the stigma of another, pollination. <i>Some plants rely on bees or other insects to carry their pollen while some pollen floats in the wind.</i></p> <p>After pollination, the pollen grain and the egg join together, fertilisation. <i>The egg now has all the information needed to make a new plant.</i></p> <p>The fertilised egg will develop into a seed. The wall of the ovary will swell up and become a fruit.</p>  <p>Apples, cucumbers, peppers and tomatoes are all fruits.</p>		<p>Chickens, like all birds, lay eggs. Inside an egg that has been fertilised, a chick will grow and eventually hatch.</p> <p>The eggs of female birds, mammals and most reptiles (plus some species of fish) are fertilised inside the female's body.</p> <p>The fertilised eggs are laid, where they are guarded in a nest or left buried under the ground to be kept safe from predators.</p> <p>Birds often sit on and turn the fertilised eggs to keep them warm.</p> <p><b>Fun fact:</b> reptile eggs must not be turned; they instead must be kept in the same position in which they were laid.</p> <p><b>External fertilisation</b></p> <p>Fish and amphibians both fertilise the eggs with sperm (as with all other animals) but this is conducted outside of the body.</p> <p>At a co-ordinated time, often decided by environmental factors (such as phase of the moon, time of the year, or temperature), the male of the species release sperm from their bodies and the females of the species release eggs from their body.</p> <p>The sperm are able to fertilise the eggs and the eggs are gathered and kept as safe as possible from predators while the young animals grow inside the egg until ready to hatch fully formed.</p>		<ul style="list-style-type: none"> <li>In mammals the fertilised egg stays inside the mother.</li> <li>It develops in a special area, in a female of the species, called the womb. The baby is called an embryo while it is still very young.</li> <li>The embryo is joined to the mother by a placenta, and it gets its food and oxygen through this.</li> <li>The air breathed in by the mother, is passed to the baby through the placenta.</li> <li>Similarly, the food eaten by the mother is absorbed in the mother's digestive system and passed to the baby through the placenta.</li> <li>Once the baby is developed enough, it is ready to be born.</li> <li>In most mammals, the baby is born able to stand, move and feed for themselves within hours.</li> <li>However, human children have much more development to undergo before they are ready for this.</li> </ul>
<b>Plant asexual reproduction</b>				
<p><b>Plant cuttings:</b></p> <p>Some plants stems can grow roots if they are planted in the correct conditions.</p> <p>Gardeners do this to make lots of copies of the same plant, without having to grow them from seeds. This is one form of asexual reproduction in plants.</p> <p><i>Plants like geraniums are good for growing from a cutting.</i></p> <p><b>Runners:</b></p> <p>Some plants, like strawberry plants or spider plants, grow runners which have new plants on the end. These plants are an exact copy of the parent plant from which they have grown, another form of asexual reproduction in plants.</p>  <p><b>Bulbs:</b></p> <p>Some plants (onions, daffodils, garlic and tulips) produce bulbs which will grow if they are planted. The bulbs form under the soil. This helps the plant to survive through the winter then grow again in spring. One bulb can split into two to make a new plant. This makes an exact copy of the original bulb - another form of asexual reproduction in plants.</p> 				

**Quiz**

**Question 1**

Reproduction is ...

- A. the series of changes in the life of an organism.
- B. the process of developing inside the womb between conception and birth.
- C. the action or process of copying something.
- D. the process of transformation from an immature form to an adult form in two or more distinct stages

**Question 2**

Gestation is ...

- A. the production of new living organisms by combining information from two individuals of different sexes.
- B. the process of developing inside the womb between conception (fertilisation) and birth.
- C. transfer of pollen to a stigma, ovule, flower or plant to allow fertilisation.
- D. the fusion of male and female cells to form a whole new offspring.

**Question 3**

Which of the following would not require pollination to reproduce?

- A. Dandelion
- B. Sunflower
- C. Honey bee
- D. Grass

**Question 4**

Which of the following would not have undergone metamorphosis?

- A. Lizard
- B. Frog
- C. Butterfly
- D. Wasp

**Question 5**

Which of the following would not have eggs fertilised internally?

- A. Elephant
- B. Human
- C. Chicken
- D. Newt

**Question 6**

Which of the following plant types does not undergo asexual reproduction?

- A. Strawberry
- B. Geranium
- C. Apple
- D. Tulip