Amphibian Classification

Kingdom: Animalia

Phylum: Chordata

Subphylum: Vertebrata

Superclass: Tetrapoda

Class: Amphibia

Amphibian

- Amphibians are live the first part of their lives in the water and the last part on the land, have skin does not contain the scales. When they hatch from their eggs, amphibians have gills so they can breathe in the water. They also have fins to help them swim, just like fish. Later, their bodies change, growing legs and lungs enabling them to live on the land. The word "amphibian" means two-lives, one in the water and one on land.
- Like fish and reptiles, amphibians are cold-blooded. This means their bodies don't automatically regulate their temperature. They must cool off and warm up by using their surroundings.

Growing up from Egg to Adult

- Begins his life with water most amphibians hatch from the eggs, which is placed in the water or wetland. And begin their life cycle in the form of larvae live in water.
- Through a gradual process known to **FORM** these young larvae turn into phases, which often vary in shape for the larvae, and the form is continue some amphibians live in water, but spends most of his life on land, and most of them back almost to the water for mating and reproduction.

- They can grow lungs to breathe air and limbs for walking on the ground. The transformation isn't the same in all amphibians, but they all go through some sort of metamorphosis.

What's the difference between

FROGS & TOADS

Marsh Frog

Cane Toad

Frogs

- The Frogs often have long legs that are good for hopping, the skin is smooth and moist, and special pads on their toes that help them climb.
- Frogs are found in many areas of the world, the frogs range in size from less than 0.5 inches in species in Brazil and Cuba to the over 1-foot (33 cm) long goliath frog of Cameroon, which can weigh up to 7 pounds


Brazil frog


Cameroon Frog

Toads

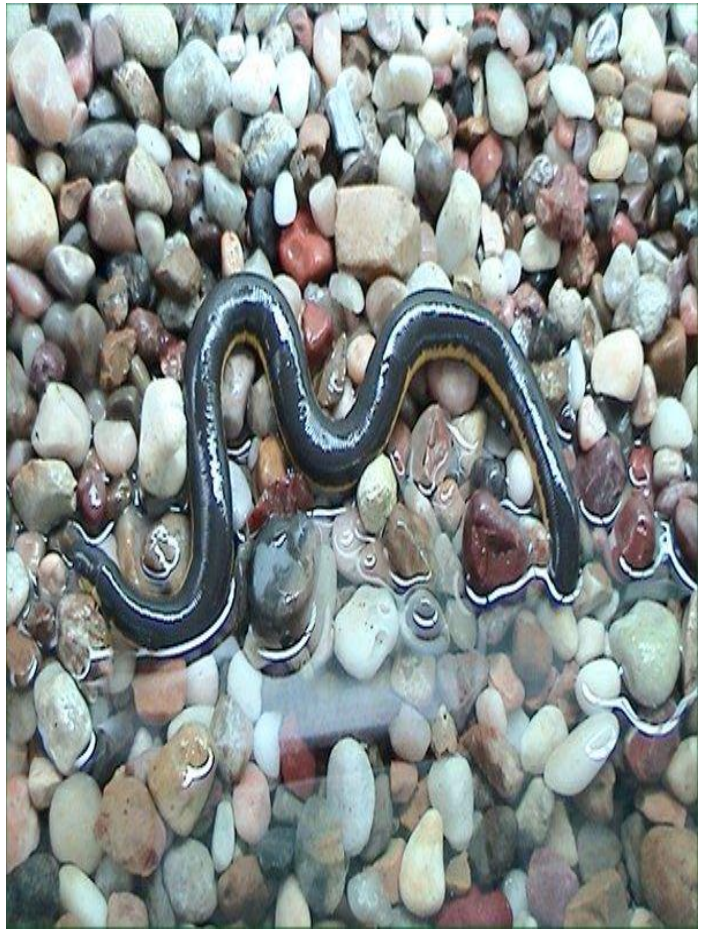
- T**oad** are characterized by dry, short legs and usually have drier skin, often with warty-looking bumps.

2. salamanders with long tails and four legs

- Salamanders look a bit like lizards. They have skinny bodies, short four legs, and long tails. Salamanders can re-grow lost limbs and other body parts. They like wet, moist areas like wetlands such as a newt is a type of salamander.

3. Caecilians

- Caecilians are amphibians that don't have legs or arms. They look a lot like snakes or worms. Some of them can be long and reach lengths of over 4 feet. They have a strong skull and a pointed nose to help them burrow through dirt and mud.



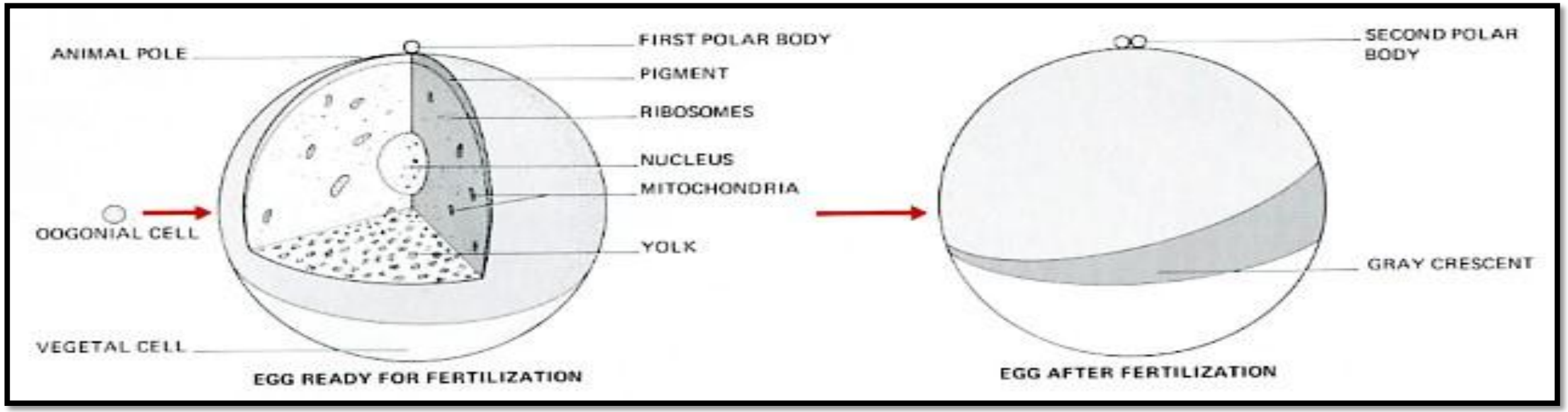
Reproduction in frogs

- Frogs typically lay their eggs in ponds, or lakes. Their larvae, or tadpoles, have gills, a tail, but no legs, and need to live in water. If fact, they are quite similar to a fish.
- Tadpoles develop into adult frogs in water (Figure below). During this transformation, they develop lungs, lose their tails and form their four legs.
- When a female presence with a male whose release the eggs. The male then fertilizes the eggs and, in some species, also guards them.
- Frogs first begin life in the water. Some female frogs may lay as many as six thousand eggs. Each egg is in a ball of jelly. In 6-21 days the egg will hatch and the tadpole will wiggle out of the jelly ball.

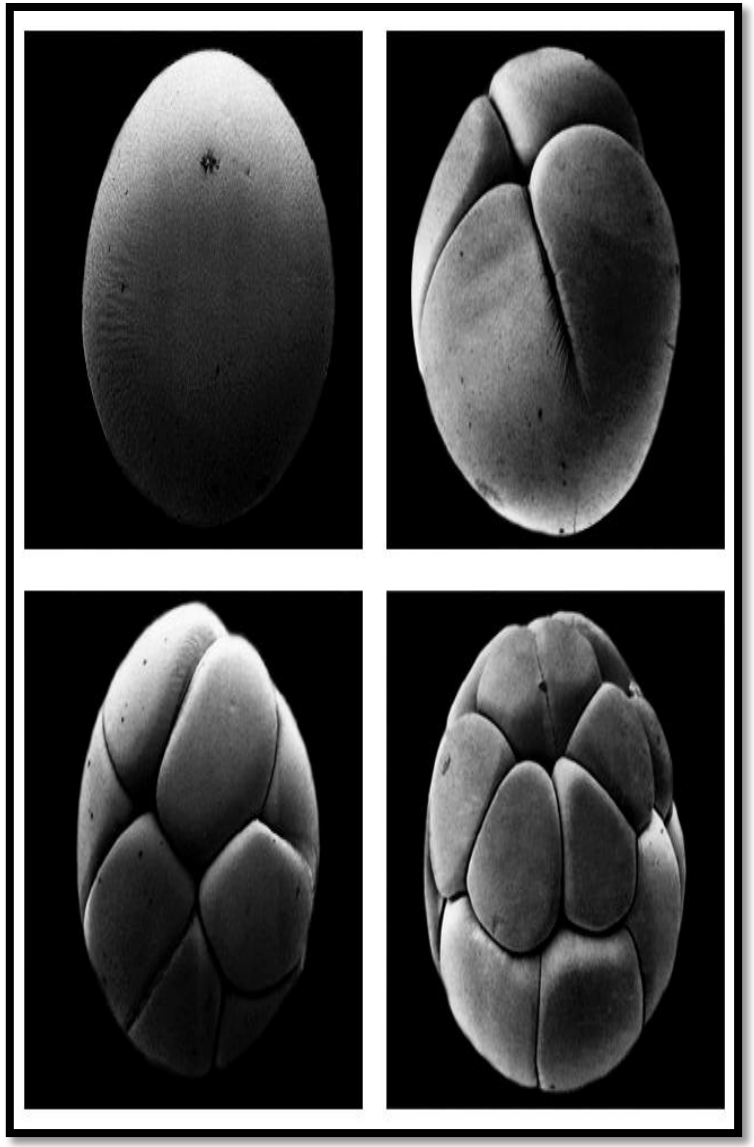
Frog (Spawn) Embryology

The Egg

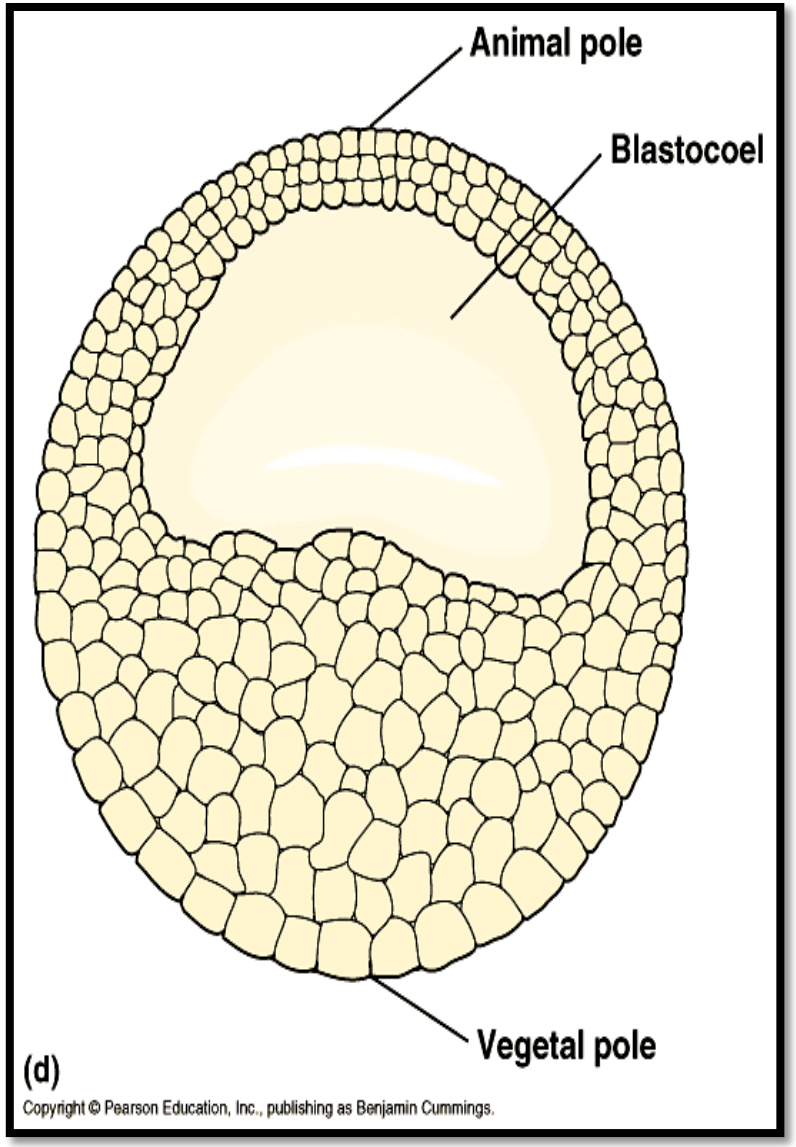
- The frog egg is a huge cell; its volume is over 1.6 million times larger than a normal frog cell. During embryonic development, the egg will be converted into a tadpole containing millions of cells but containing the same amount of organic matter.
- The upper hemisphere of the egg — the **animal pole** — is dark.
- The lower hemisphere — the **vegetal pole** — is light.
- When deposited in the water and ready for fertilization, the haploid egg is at metaphase of meiosis II



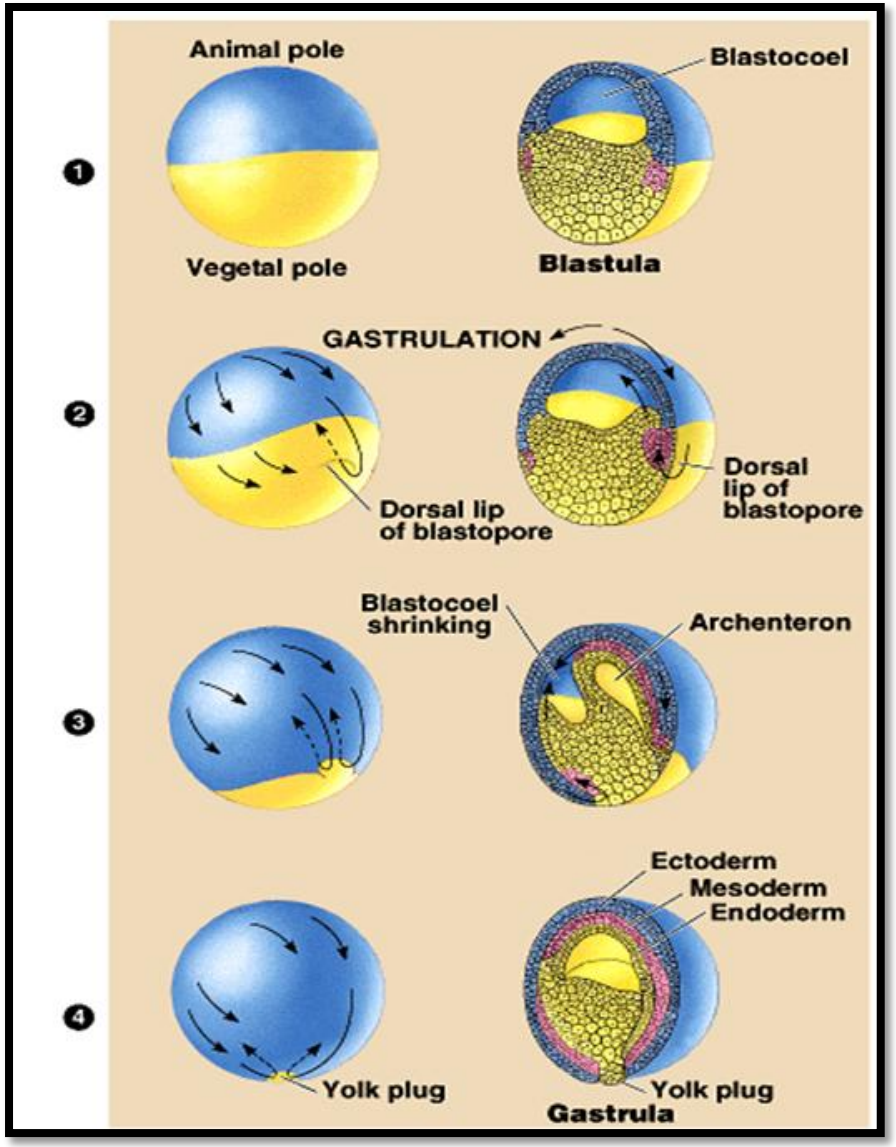
Cleavage in a frog embryo



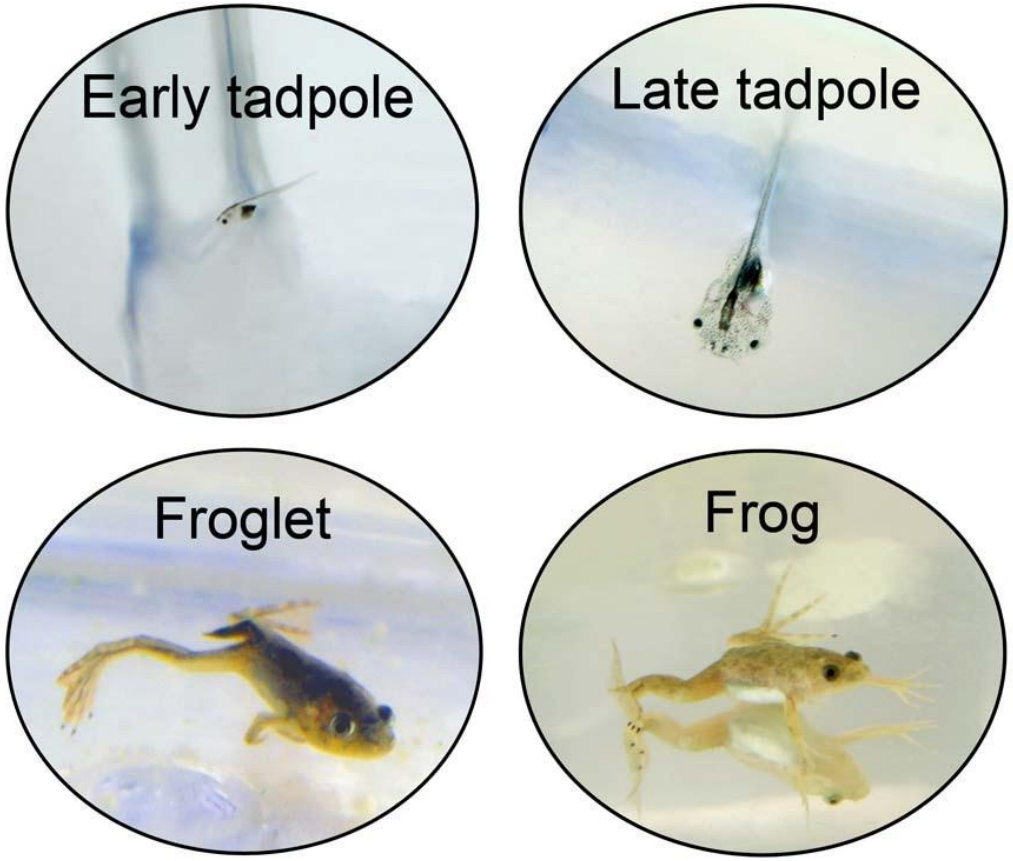
Cross section of a frog blastula



Gastrulation in a frog embryo



Life cycle of a frog



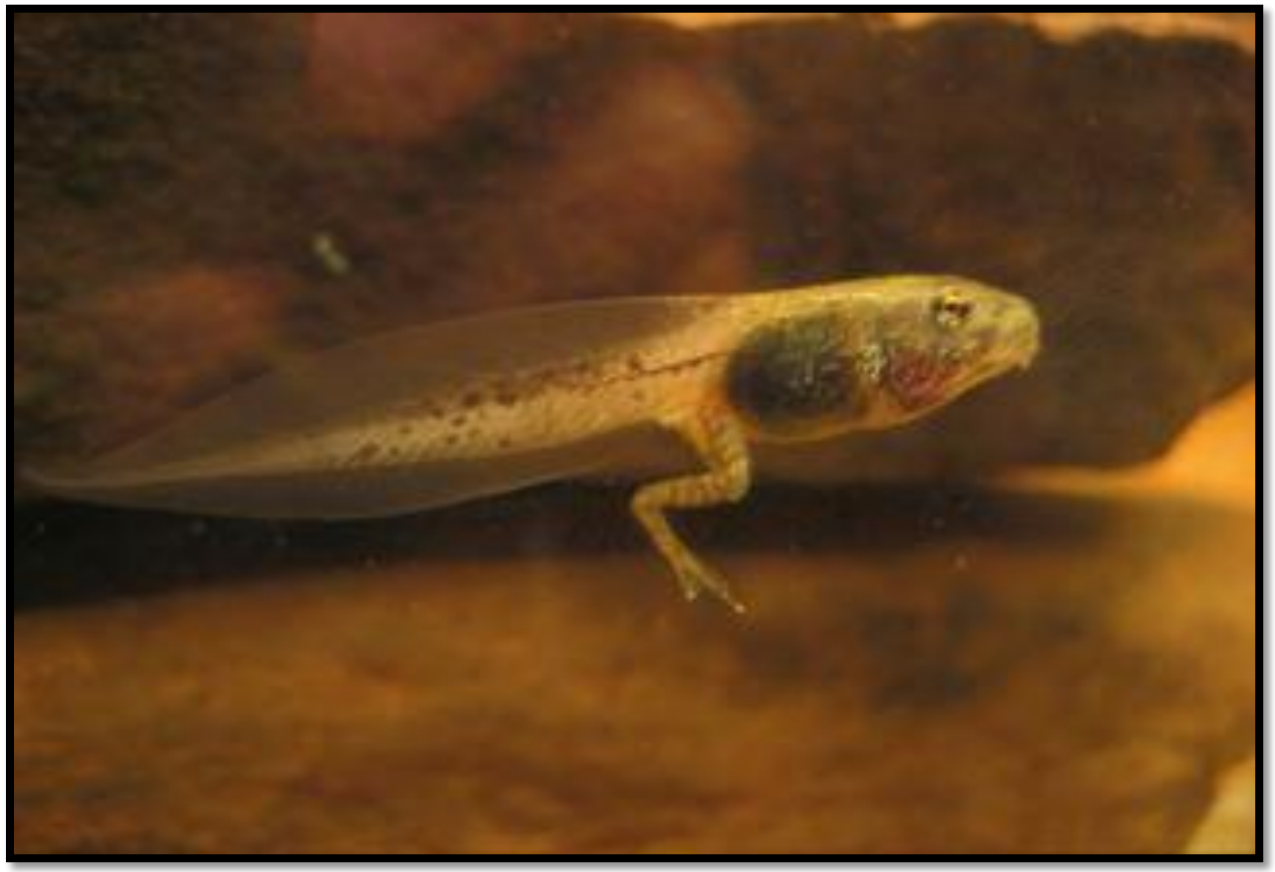
1. Growth of tadpole

Fertilization-egg: **7-10 days**: Fertilized egg feed on remaining yolk which is in its gut. Their gills, mouth and tail have poorly developed. Begin to swim and feed on algae. At the time the tadpole hatches, it is a fully-formed organism. It gains additional molecules with which it can increase the number of cells that make up its various tissues.

- The Tadpole has a long tail and it lives in the water. Tadpoles breathe through gills on the outside of their bodies for about five weeks.
- **(3-4 weeks):**A layer of skin grows over gills. Teeth begin to appear. A coiled gut start to develop. This is aid in digestion;

2. Tadpole with Legs

- **(6-9 weeks):** The head is more distinct, Start to eat insects. Arms begin to grow, while the back legs begin to appear and its outside gills begin to disappear. In about a week after the back legs have appeared the tadpole develops lungs and now breathes air.



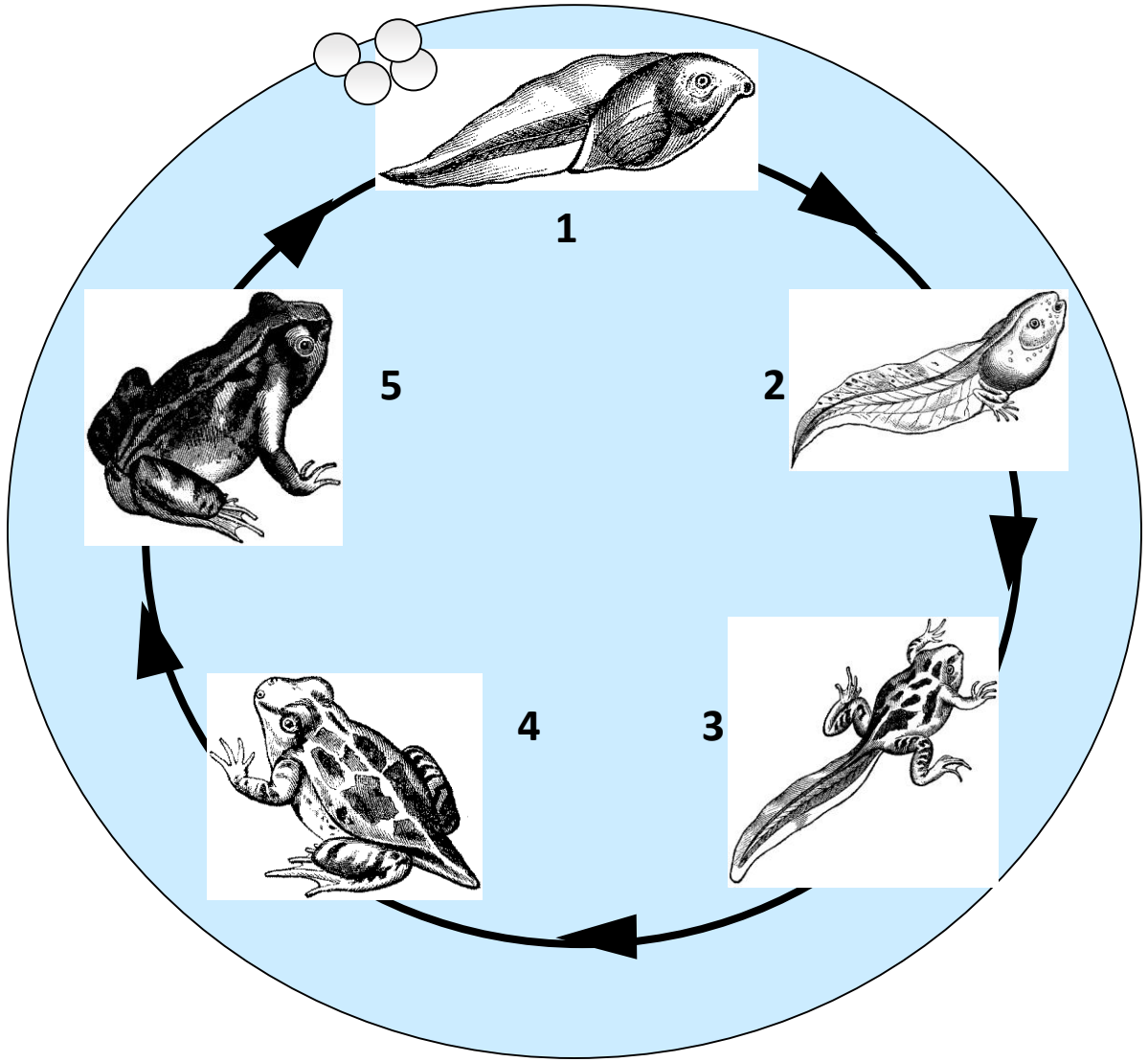
3. Young Frog or Froglet

- **(12 -14 weeks):** the tadpole grows front legs. After about three and a half months the tadpole has become a froglet which resemble a frog and remaining the tail, and is ready to eat small bugs and spend time out of the water. The frog continues to grow, and loses its tail completely

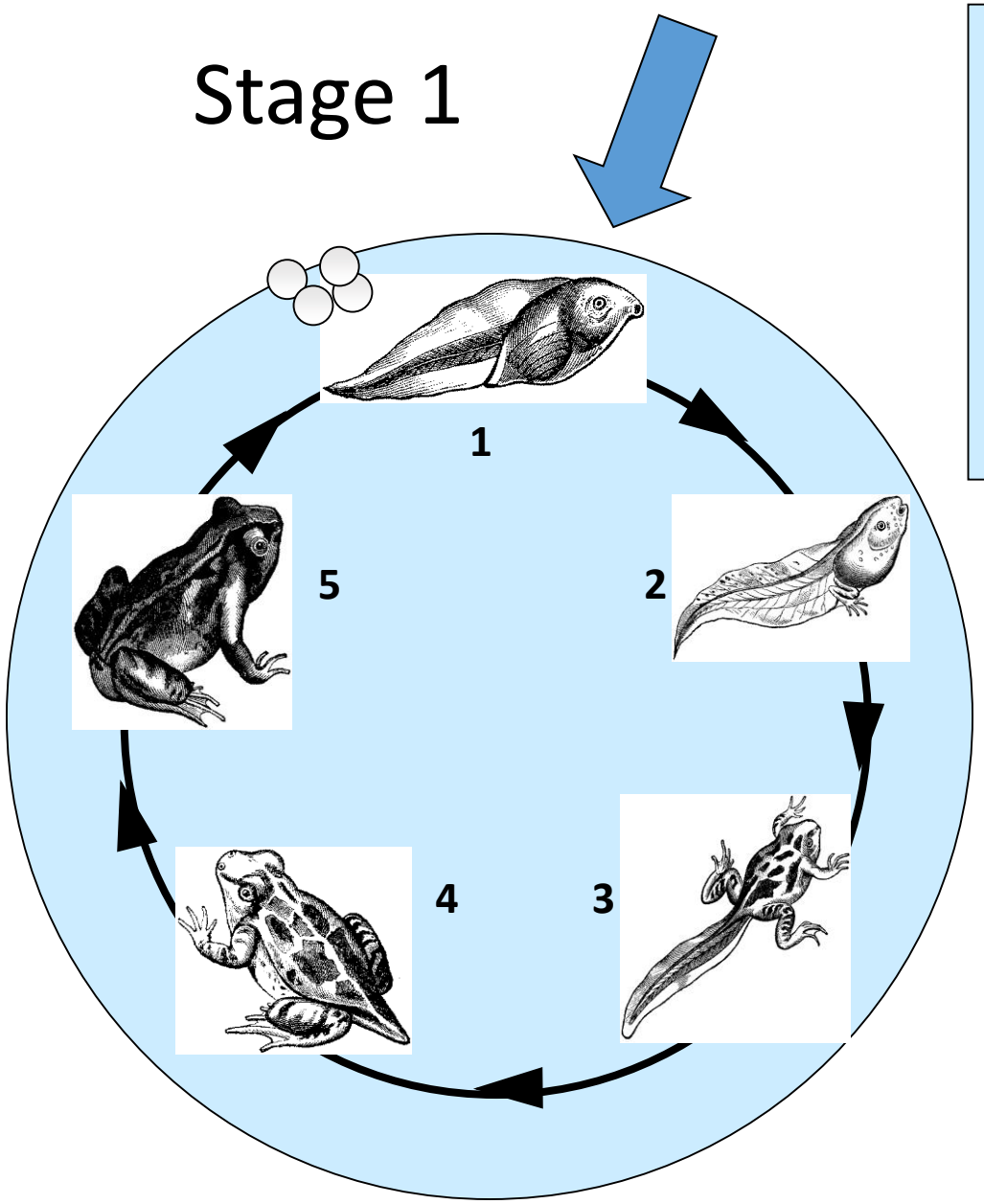
4. Frog

- **(18-20 weeks):** After the egg was laid, a fully developed frog with lungs, legs. This frog will live mostly on land, with occasional swims. The tiny frogs begin to eat insects and worms, majority of frog live between 4-15 years.

Life Cycle of a Frog
5 stages

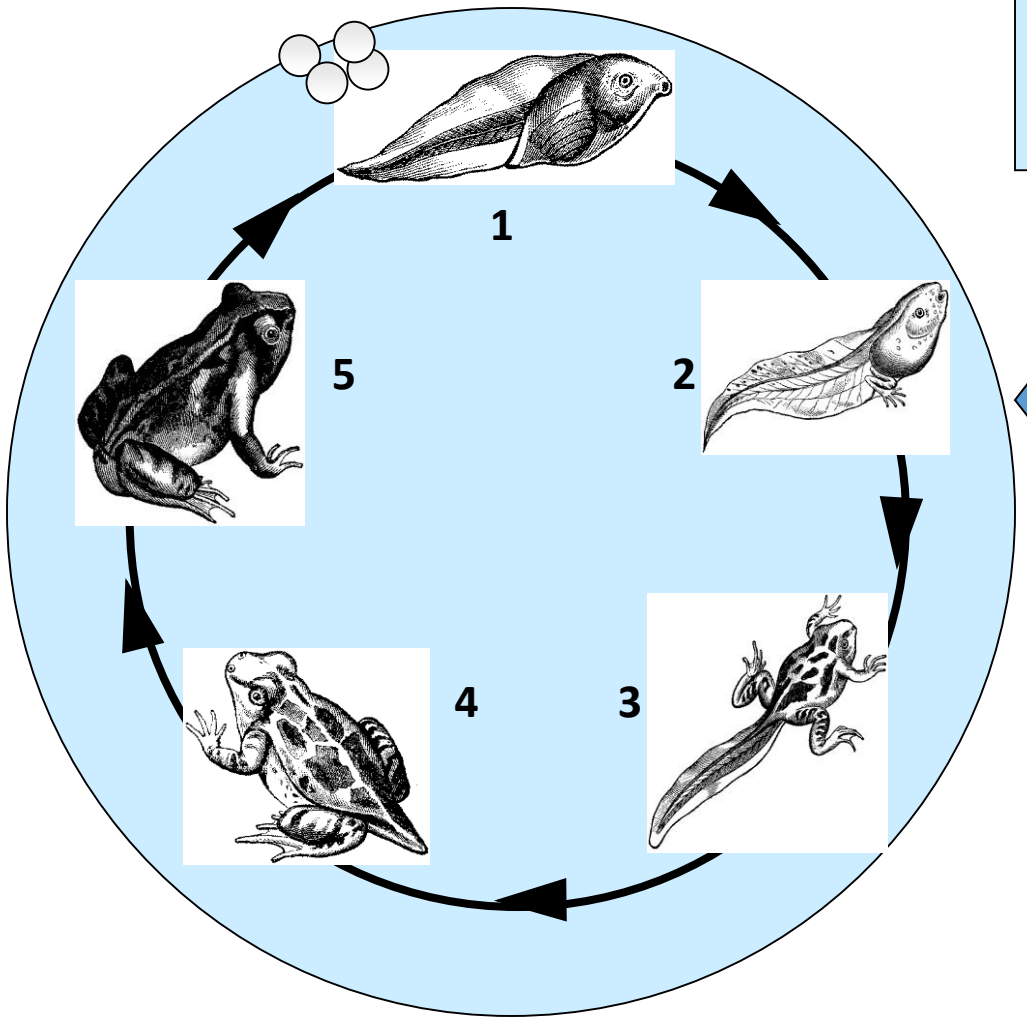


Stage 1



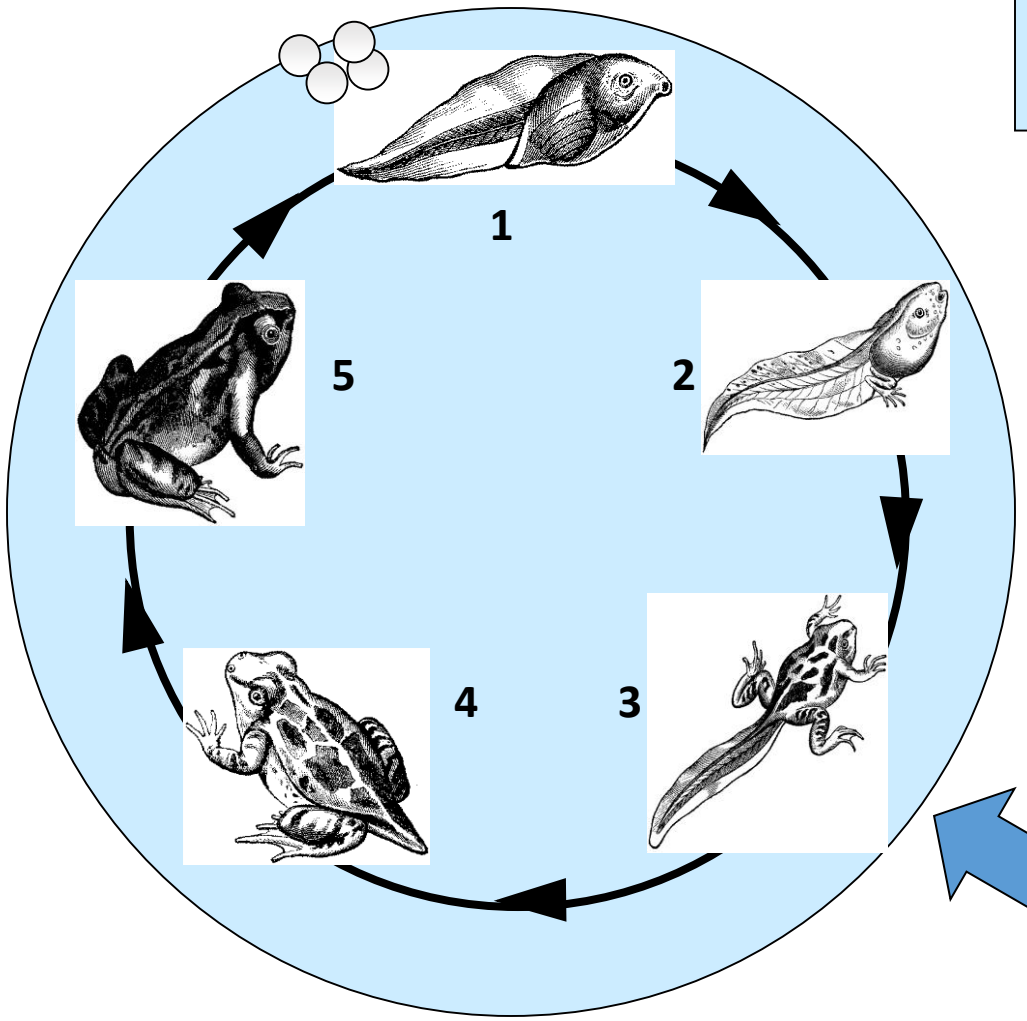
The life of a frog begins when the tadpole hatches from the egg.

A tadpole has gills and swims in the water. Legs begin to develop.



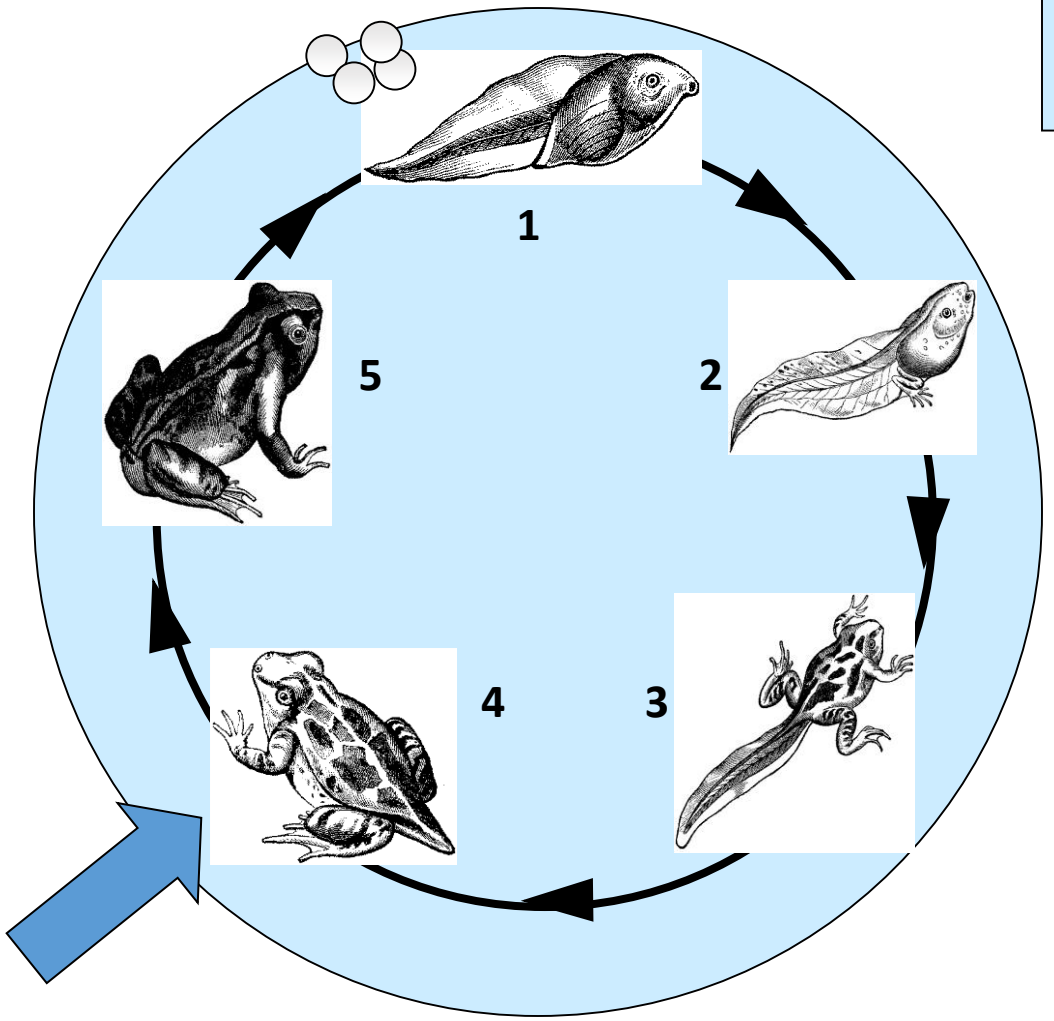
Stage 2

After a period of time the tadpole has fully developed legs and lungs.



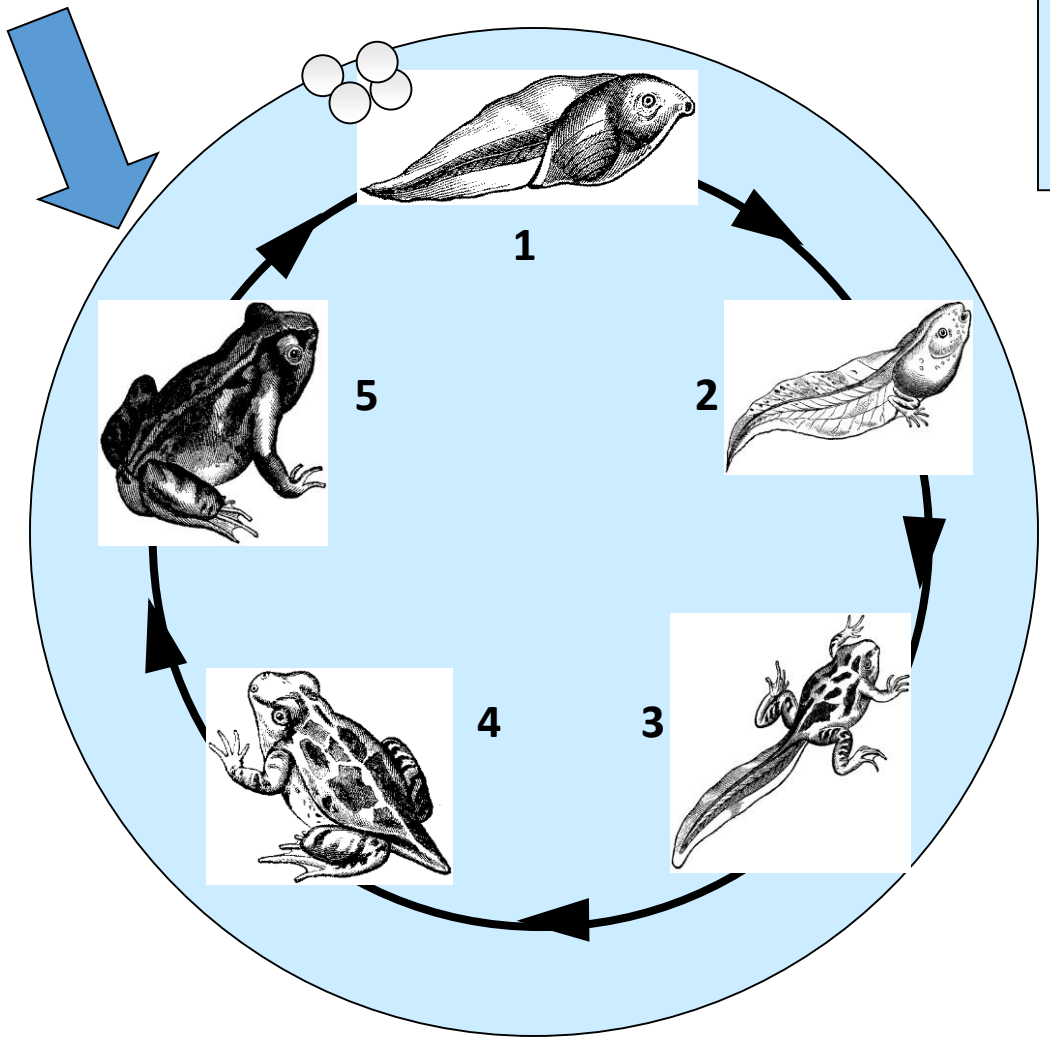
Stage 3

The tail is being absorbed and the frog is able to spend more time on land.

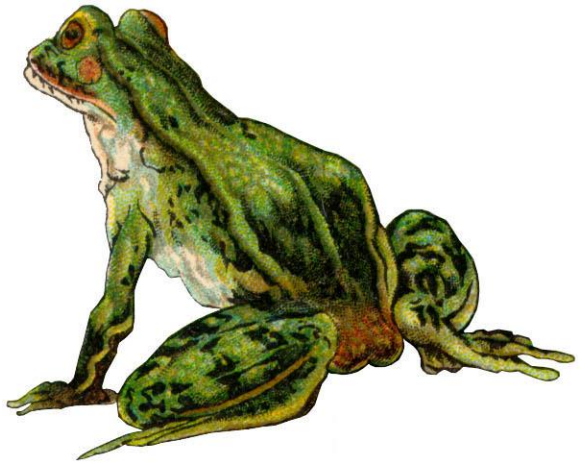


Stage 4

Stage 5



The frog is fully developed and can live on land or in water.



End of Activity