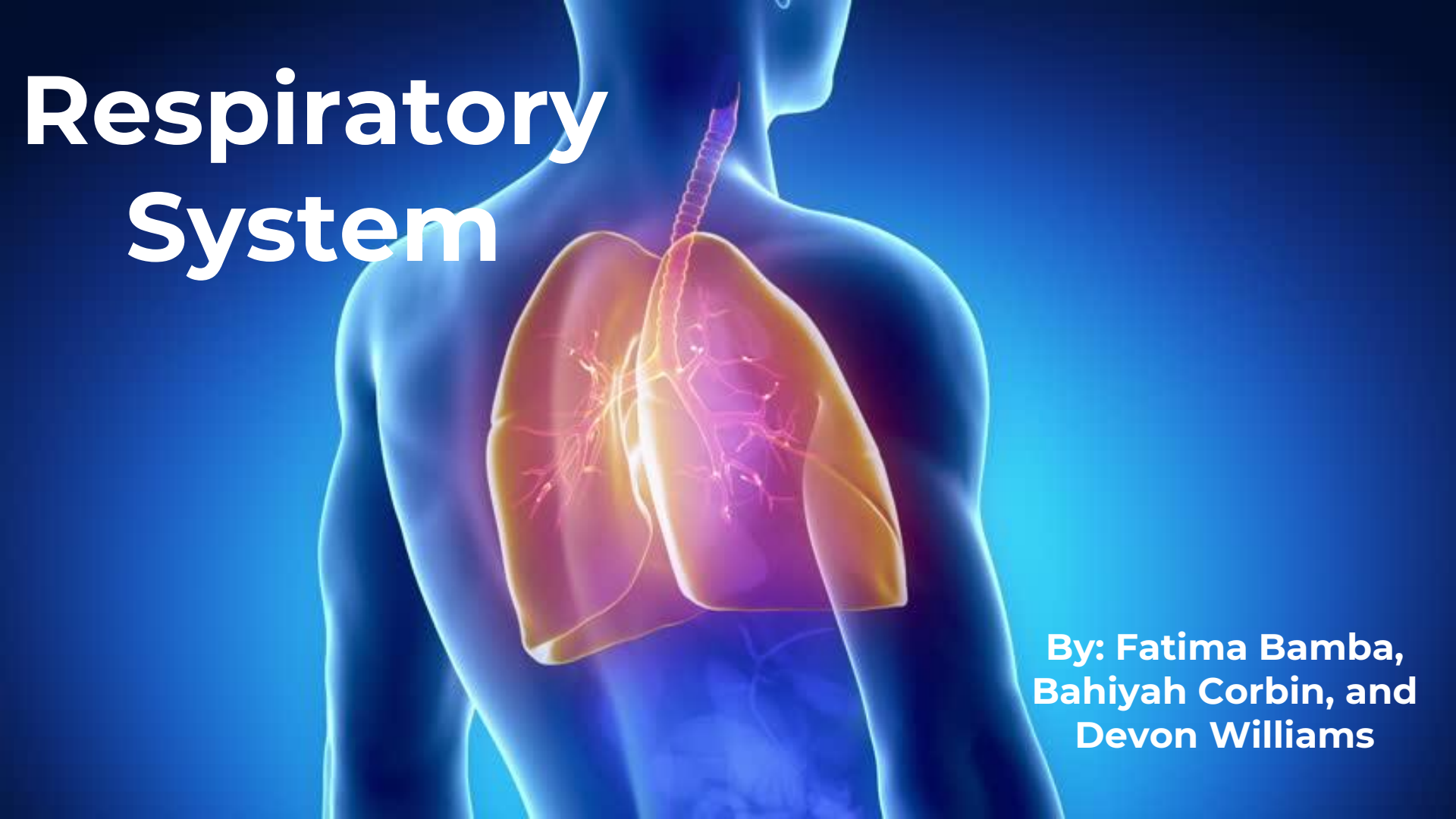
Respiratory System

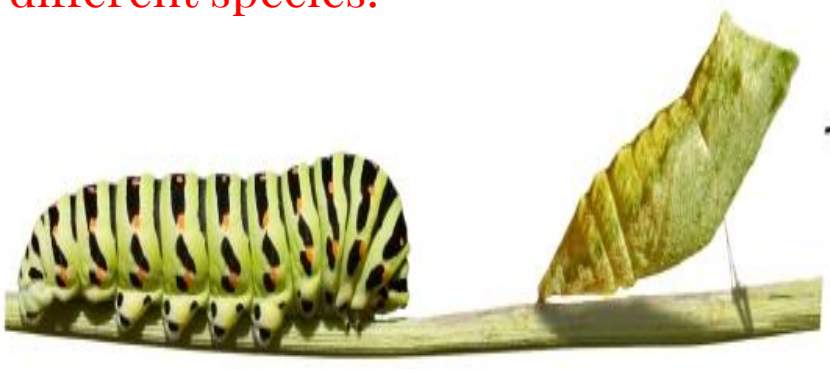


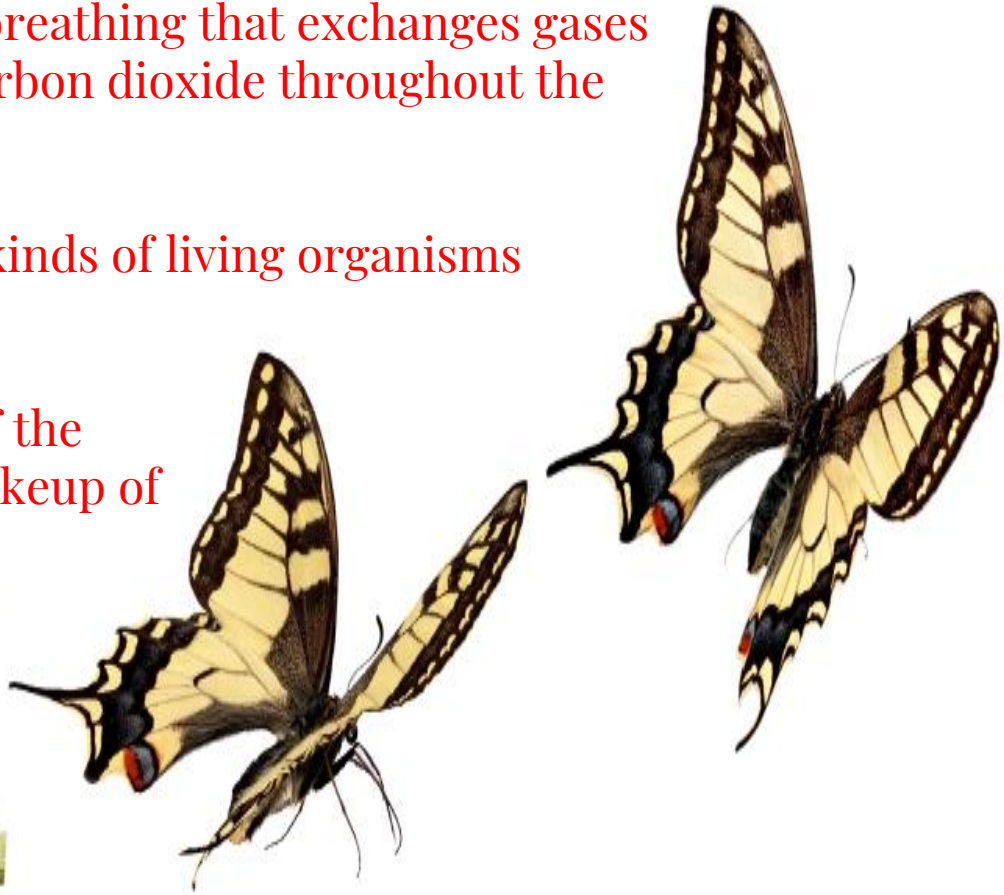
By: Fatima Bamba, Bahiyah Corbin, and Devon Williams

The **Respiratory System** is all about breathing that exchanges gases with the environment, oxygen and carbon dioxide throughout the body system.

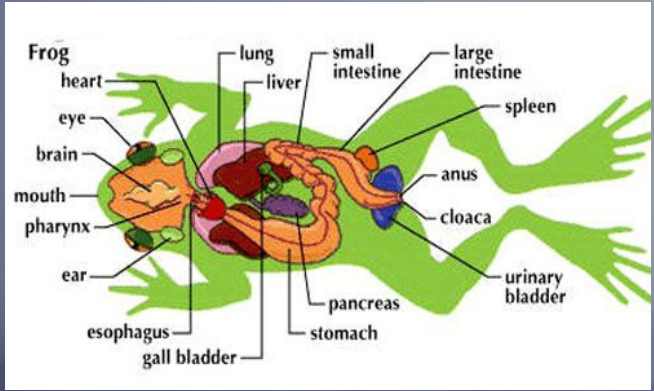
Evolution is the process of different kinds of living organisms throughout time have developed.

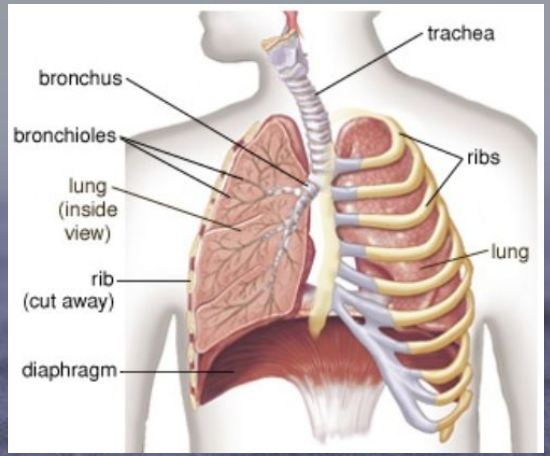
Comparative Anatomy is the study of the Similarities and differences in the makeup of different species.

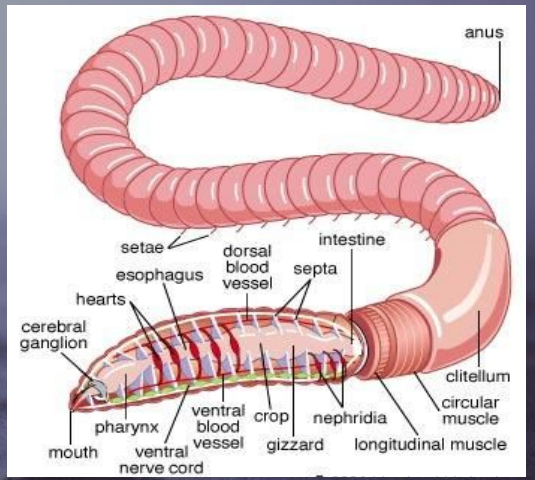


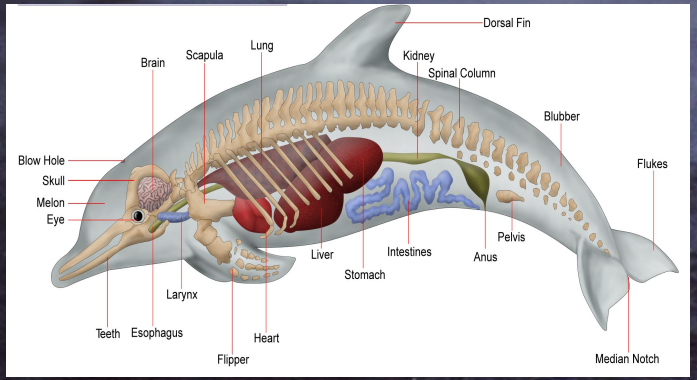


Visual Comparison









Earthworm Classification

Phylum: Annelid

Habitat: Anywhere there is moist soil and dead plants, they most abundant in rainy forest areas but can be found in many habitats on land and in freshwater.

External adaptations: They have developed bristly hairs on each segment this helps gives the worm traction on the soil.

Frog Classification

Phylum: Chordate

Habitat: Frogs habitat in ponds and land. When eggs are hatched into small tadpoles that usually attach to pond weeds.

External adaptations: The frogs sensitive surface on its back helps them to sense vibrations through the water. Frogs use their teeth to swallow their prey as a whole. Frogs skin color changes based on their environments. For example, a Dyeing Poison Tree Frog is brightly colored to warm their predators of their nerve toxins.

Dolphin Classification

Phylum: Chordate

Habitat: The ocean

External adaptations: Dolphin blowhole helps them to breathe. Their flipper helps them to swim.

Human Classification

Phylum: Chordate

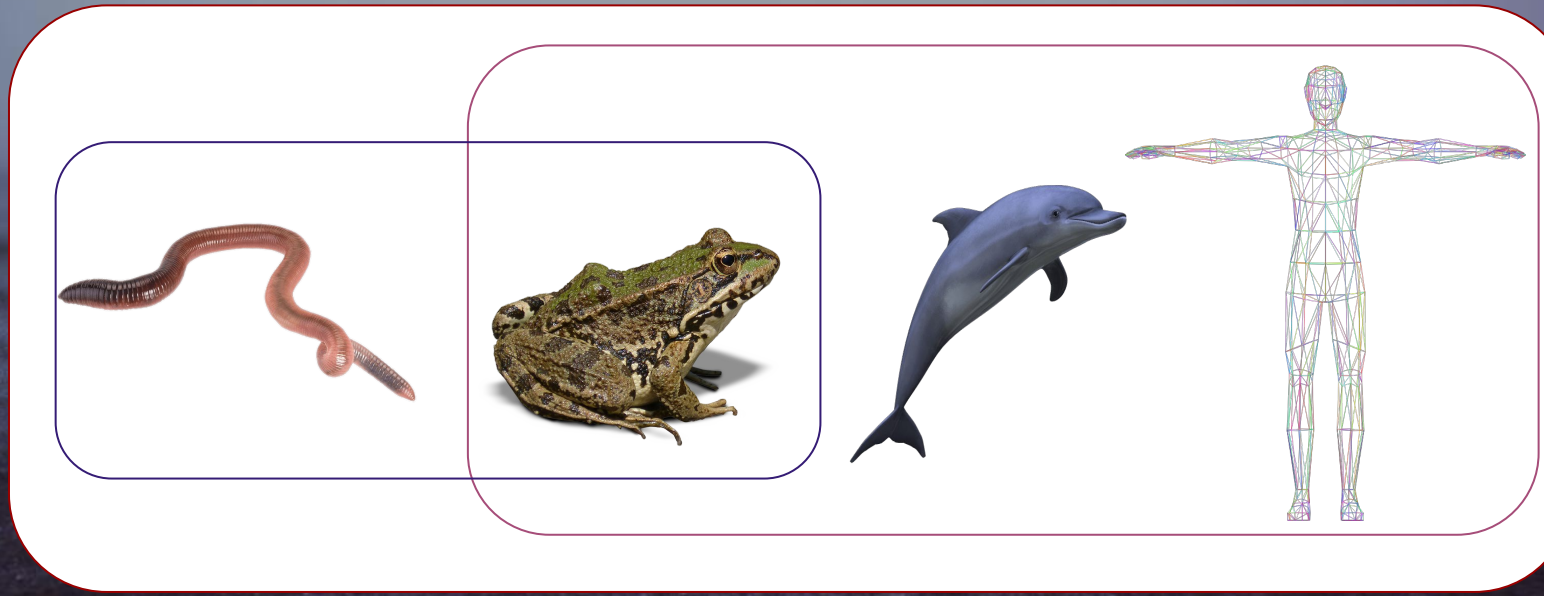
Habitat: Humans live in cold or hot environment.

External adaptations: Humans have developed opposable thumbs. This helps us hold things and makes life easier.

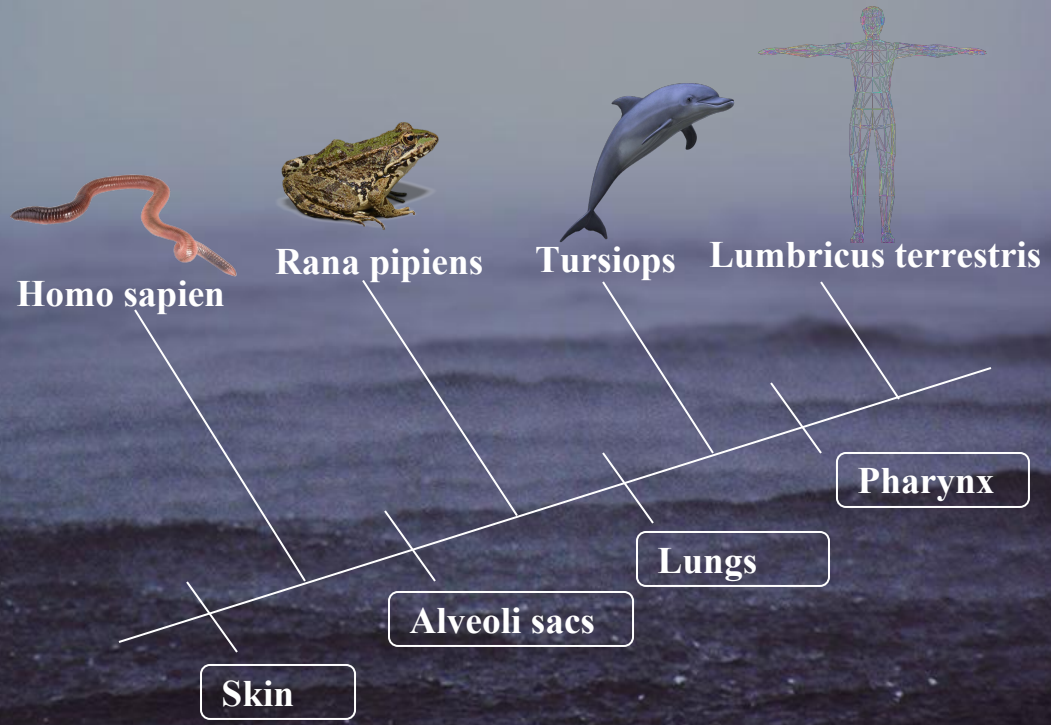
Chart

	Earthworm	Frog	Dolphin	Human
Lungs		✓	✓	✓
Alveoli Sacs		✓	✓	✓
Pharynx	✓	✓	✓	✓
Skin	✓	✓		

Venn diagram



Cladogram



We organized our cladogram by starting with the least shared characteristic then working our way up.

Earthworm respiratory system

Earthworms breathe through their skin they breath in oxygen and breathe out carbon just like all other animals but they have to breathe through their skin because they can't breathe through their mouth. Air dissolves into the mucus on their skin so they have to stay moist to breathe which is why you can always find them in very moist soil If worms dry out, they suffocate. As fresh air is taken in through the skin, oxygen is drawn into the worm's circulatory system, and the worm's hearts pump the oxygenated blood to the head area. The movements of the worm's body make the blood flow back to the back end of the body, and the hearts pump the blood forward again. Carbon dioxide dissolves out of the blood back to the skin.

Evolution of the earthworm

Earthworms they have very basic parts all they need was the mucus on their skin and this dissolved the air around them into their bodies and then this released carbon dioxide as well just like humans but very simple and less complicated. Their selective pressure is that they have to stay inside of the soil to keep their skin moist.

Frog respiratory system

Frogs breathe very much like humans by intaking air through its nostrils and down their lungs. Frogs do not have ribs or a diagram, which in humans allows them to expand the chest and decreasing pressure in the lungs. The respiratory surface of frogs on the lining of their mouth on which gas exchange takes place readily.

Evolution of the Frog

When frogs are first born, they are call tadpoles. Frogs developed out of lungfish about 375 million years ago, and they used their lungs to leave the water and live on land. Based on their genetics and selective pressure tadpoles begin to make a hormone that made them grow legs and arms and lose their tails and gills and begin to breathe air. Their selective pressure is being able to breathe underwater.

Dolphin respiratory system

Unlike other mammals who breathe through their nostrils, mouth, and skin dolphins breathe through their blowhole. The blowhole is at the top of the dolphin head. Dolphins, like other mammals, need air to survive, especially oxygen. Dolphins have to rise to the surface frequently to breathe. When they are underwater, they have to hold their breath. When they are out of breath, they return to the surface to take in more fresh air. Dolphin lungs contain more air cells than human lungs. Their lungs are made up of two layers of capillaries, which increases the efficiency of gas exchange.

Evolution of the Dolphin

Scientists believe that dolphins evolved from a hoofed, land-living mammal called 'Mesonyx', and returned to live in the seas 50 million years ago. 'Mesonyx' looked like a dog but had a dolphin body shaped for millions of years. The nearest living relative of the dolphin on land is the hippo.

Human Respiratory System

The air-breathing organ appeared in fishes of 400 M years ago which was considered a single primitive lung ventilated by the buccal pump. The breathing system was adopted by the first terrestrial tetrapods which is largely preserved in current amphibians. The respiratory system allows facilitating gaseous exchange between oxygen intake and carbon dioxide outtake. Some of these changes involved structures related to the respiratory system which affected the relationship with the skull and the spinal column. This resulted in a soft and elongated oropharynx, that part of the tongue integrated into its anterior wall, and increased the tendency towards upper airway collapse during sleep.

Comparative anatomy

Comparing anatomies can show us from the earthworm the most basic of all the species to the human the most complex of the species in the chart that the each part of every species respiratory system was changed and morphed over time and implemented into the next organism.

MLA Citations

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Thanks!
Any questions?