

S.O.S. Structures and Functions of Animals

TN Science Standards Addressed:

3.LS.1: From Molecules to Organisms: Structures and Processes

Analyze the internal and external structures that aquatic and land animals and plants have to support survival, growth, behavior, and reproduction.

Essential Question: How do animal structures help them survive?

Key vocabulary:

structural adaptations: adjustments to internal or external body parts

- examples: meat eaters may have sharp teeth to help them bite meat; plant eaters may have flat teeth so they can chew plants; horse flies don't have teeth or beaks, so they spit saliva on their food to break it down and make it easier to eat

respiratory system: the organ system that brings oxygen to body cells and removes waste gas.

- Some animals use their lungs to breathe in oxygen; others do not have lungs and live in the water-they use their gills to breathe; worms don't have lungs or gills-they breathe through their skin

internal structure: structures that are found inside of an organism's body and cannot be seen (Example: backbones)

external structure: structures that are found outside an organism's body (Examples: exoskeletons, shells, etc.)

invertebrate: an animal that has no backbone

- An invertebrate doesn't have any bones at all.
- Invertebrates are more common than vertebrates.

vertebrate: an animal that has a backbone

- A backbone is a line of many small bones that runs down the middle of an animal's back.

Needs of animals

Need	Explanation
food	Animals need food because it gives them energy to move and grow.
water	Animals need water because it helps them turn food into energy and get rid of waste.
oxygen	Animals need oxygen, which is a gas, to help them turn food into energy. Animals get oxygen by breathing.
space	Animals need space to move around, grow, find food, and raise their young.
shelter	Animals need shelter for safety and protection.



Vertebrates	Invertebrates
have a backbone	do not have a backbone
Scientists organize vertebrates into 5 groups: mammals, birds, reptiles, amphibians, and fish.	have a structure other than bones to provide support; many have an exoskeleton
Mammals have hair or fur. Most are born live and are cared for by their mother. They have lungs and are warm-blooded.	most are small
Birds have feathers, two wings, and two legs. They have lungs and are warm-blooded. They hatch from eggs.	Example of invertebrates with an exoskeleton: lobsters, grasshoppers, spiders
Reptiles have lungs and most hatch from eggs. They are covered in scales and are cold-blooded.	Examples of invertebrates with a shell: snail, clam, squid
Amphibians live part of their lives on land and part in the water. They hatch from eggs and their body changes drastically as they grow.	Arthropods make up the largest group. They have exoskeletons, bodies with more than one segment, and legs with joints. Ex: shrimp and spiders
Fish spend their lives in water. Most are covered in scales, hatch from eggs, and are cold-blooded. They have gills to breathe underwater.	