INTRODUCTION TO ANIMALS

What Is an Animal?

Scientists have discovered over a million different species of animals on our planet.

The species that fit into the animal group are similar in that they have many cells and that they obtain food by eating other organisms.

Other characteristics that animals share are that they are able to move around their environment and they reproduce sexually.

Structure of Animals

As we said, all animals are multicellular organisms. Most animals have cells that are grouped together to form **tissue**. As we learned in Topic 11, tissues are similar cells that serve a specific function. For example muscles allow us to lift objects and move around.

If tissue w n **organ** is a group complex than each ans made up of bloo

When orga system. All of the t em. Your bones are part of the organ system called your skeletal system.

All animals are heterotrophs or consumers, meaning that they don't create their own food.

An animal's food can either be another animal, plants, or organisms in another Kingdom. Reproduction is normally completed sexually. As we already learned, sexual reproduction is when two parent sex cells come together to form a new organism. Some animals are capable of reproducing asexually.

An organism called a hydra forms a bud, which breaks off and forms another individual organism that is identical to the parent.

Adaptations

Some scientists believe that organisms adapted to have the ability to move so that they could catch their food, reproduce, and escape predators. There are some animal species that do not move around their environment during every stage of their life. The majority do move at some point during their life. An oyster is an organism that swims when it is a larvae until it finds a surface to attach itself to where it will remain for the rest of its life.

Functions of Animals

Animals have three needs within their environments: **oxygen, food, and water.** In order to release the energy stored in food, the animal must have oxygen. There are animal species that get oxygen from the air and there are animal species that get their oxygen from water. Food gives [illegible]th and the energy [illegible]

Water allo[illegible]wn of food would not [illegible]

Animal A[illegible]

An animal [illegible]hat it lives in. Whether running away from prey or finding food, an animal must continue to become better adapted to its environment.

Animals have adapted to feed on different types of food. There are animals that eat only animals (**carnivores**), animals that eat only plants (**herbivores**), and animals that eat both plants and animals (**omnivores**).

Carnivores: Most carnivores are predators that will hunt and kill other animals for food. These animals have adapted to capture the prey they feed on. A cheetah hunts for its food by stalking its prey and then quickly running it down.
The cheetah adaptations are fast speed, excellent eye sight, excellent hearing, and sharp claws. Most carnivores have sharp and pointed teeth to help stab and cut their prey.

Herbivores: Cows, pandas, and horses have adapted to the food that they eat by growing teeth that are broad with long, flat surfaces to help them grind the plant material down.

Omnivores: Humans, bears, and foxes are examples of omnivores.

Animals have also adapted to avoiding their predators.

Lesson Checkpoint:
What is an adaptation to avoiding predators?

These anir smelling liquids like

Classifying Animals

There are about 35 different groups of animals in the animal kingdom.

An important characteristic of classifying animals is whether or not the species has a backbone. If an animal species has a backbone, it is called a **vertebrate**. If an animal species does not have a backbone, it is called an **invertebrate**. Mammals, birds, fish, amphibians, and reptiles are all vertebrates.

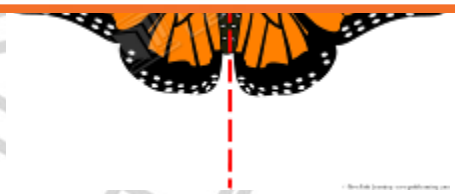
Insects, worms, snails, and jellyfishes are all examples of invertebrates. Approximately 95% of animal species are invertebrates.

Animal Symmetry

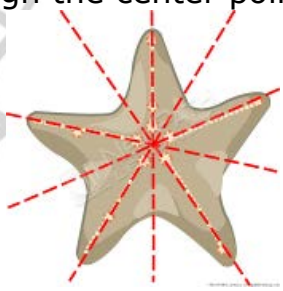
If you have ever looked into a mirror, you will notice that you could draw a line down the center of your face and the arrangement of facial structures will be balanced. This is called **symmetry** and it is another important characteristic of the majority of animals. The line that could be drawn is called lines of symmetry.

There are two different types of symmetry: bilateral and radial symmetry.

Bilateral s ry, the two halves



Radial symmetry occurs in an organism where you can draw many lines of symmetry that go through a central point. Try to picture drawing a line of symmetry through an apple pie. Notice that you would be able to draw a line of symmetry through the pie anywhere as long as the line went through the center point. Note the starfish below.



Animals that have **radial symmetry** share many different characteristics, including living in water, not having a front or back end, and not being able to move or moving slowly.

Animals like sponges do not show any symmetry. This is called **asymmetry** and the animals that have this type of symmetry are usually organisms with simple body plans like sponges. Complex animals have either radial or bilateral symmetry.

Bilateral S

Animals th n animals that are as als have a distinct fro d sense the enviro

Types of

Animals have many different types of behavior.
Behavior is all of the actions that an animal performs. Most of the behaviors that an animal performs help it to survive or reproduce.

There is a stimulus and a response to all behaviors.
A **stimulus** is a signal that causes an organism to respond in a specific way. A **response** is the organism's reaction to the stimulus.

Some animals know how to perform a certain behavior by instinct.
Instinct is performing a behavior without being taught how to do it.
Other behaviors need to be learned.

Learning is when a behavior changes due to experiences. Learning can take place many different ways depending on the situation.