

Animals: Habitats & Adaptations

3.2.1 Illustrate the life cycles of seed plants and various animals and summarize how they grow and are adapted to conditions within their habitats.

3.2.2 Explain how physical and behavioral adaptations allow organisms to survive (including hibernation, defense, locomotion, movement, food obtainment, and camouflage for animals and seed dispersal, color, and response to light for plants).

3.2.3 Recall the characteristics of an organism's habitat that allow the organism to survive there.

3.2.4 Explain how changes in the habitats of plants and animals affect their survival.

3.2.5 Summarize the organization of simple food chains (including the roles of producers, consumers, and decomposers).

What do habitats provide?

Organisms have needs for survival that are found in their particular habitats. Organisms can only survive in an area where its basic needs (air, food, water, shelter or space, and light) can be met. A habitat offers a range of conditions, for example water, air, food, shelter or space, or sunlight, which allow some organisms to live there. The specific characteristics of the habitat that allow the needs of energy, growth, and protection to be met are dependent upon the particular plant or animal.

1. **TRUE or FALSE** : A plant can survive in a habitat that does not offer all of its basic needs.

2. What things can a habitat provide for an animal/plant?

energy, protection, room to grow

Animals require different amounts of space. Habitats can be big like a forest or they can be much smaller like a burrow or hole. Some animals defend a huge territory or roam over a large area. Some other animals need only a small amount of space and can put up with neighbors that live close by.



Just like you have to go to the store to get food, an animal leaves its "shelter" to get the things they need to live. If the population's needs aren't met, it will move to a better habitat.

Different animals need different habitats. A fish, for example, needs clean water in which to live. A grasshopper, however, needs a big space where it can hop and leaves that it can eat.

Large Habitats:

The habitat for some animals and plants may **cover a large area**. This means that it is big and spacious. You will find large animals living in these habitats. Some examples may be:

- * **grazing animals may need lots of area to get enough food,**
- * **birds fly from place to place to get food, or**
- * **large trees will grow in areas where enough water is available for their growth.**



Small habitats can exist within a larger habitat.

1. **TRUE** or **FALSE** : *Small habitats can exist within a large habitat.*

2. List some examples of LARGE habitats:

forest	desert	grasslands
ocean	mountains	lakes & ponds
rainforest	arctic tundra	swamplands

Small Habitats:

Other animals or plants have habitats that may be a small part of a larger environment. This means they are small in size and usually can be found within a larger habitat. Some examples may be:

- * squirrels may make their nests in one tree in a forest,
- * some small insects may live under a fallen log in the forest;
- * orchid flowers live by hanging on trees found only in warm, wet areas, or
- * water lilies live in ponds in the shallow water.



1. List some examples of SMALL habitats:

fallen log	nests in trees
pond	cavern
hive	ant hill

Resources within a habitat:

Resources (*basic needs*) within a habitat can keep only a certain number of plants and animals alive. This depends on how well the habitat provides for the needs of the plant or animal. **Changes in a habitat can affect the survival of a plant and animal.** There are many changes that can occur within a habitat that would force the animals or plants to change or adapt to survive.

1. **TRUE** or **FALSE** : *A habitat can only keep a certain number of plants and animals alive.*
2. **TRUE** or **FALSE** : *There is nothing that can affect the survival of plants and animals within their habitat.*

Rapid Changes that affect a habitat:

Changes to a habitat can occur naturally. Some changes occur **rapidly** (*very fast and often without warning*), for example, disease, fire, hurricanes, landslides, volcanoes, earthquakes, or changes in temperature or amount of rainfall (drought or flood) can change a habitat.

There are many different types of **disease** that can affect plants and animals within their habitat. **Once an animal or plant is infected, the disease spreads to others of its kind and can destroy the entire population.**

disease



fire



A **fire** could burn down an entire forest, pushing animals out and causing them to have to seek food and water resources in unfamiliar places.

Hurricanes are very powerful storms capable of destroying a habitat. **Powerful winds** from hurricanes blow birds off course and push them hundreds of miles

Hurricanes are very powerful storms capable of destroying a habitat. Powerful winds from hurricanes blow birds off course and push them hundreds of miles away from their home habitat. High winds knock down trees along the coast. The storm surges, waves and winds can cause beach and dune erosion. The heavy rains generated by hurricanes will dump water in coastal area river basins and this can send large amounts of fresh water rushing downstream into coastal bays and estuaries. This **flooding** disrupts the balance of fresh and salt water in the rivers and drowns the surrounding land including the plants and animals living there.



hurricane damage

landslide



Earthquakes and large amounts of rainfall over a short period of time can cause **landslides**. The soil underneath has become loose causing large pieces of land to "fall" or "slide" to a lower area of land. A landslide can destroy all the plants in its path meaning that the animals would have to struggle for food. The landslide could also destroy animal homes, including animals themselves.

A **volcano** can also destroy a habitat. When it explodes and lava pours from its sides, it will kill any plants and animals in its path. Even if you are far enough away from the blast or lava, most of the time the ash falling from above makes it difficult to breathe. So even if an animal has not been killed from the explosion or lava, it will likely need to flee in order to breathe and find food sources.



volcano

An **earthquake** is the result of a sudden burst of energy from inside the earth. Earthquakes can happen anywhere. They disrupt all life on the surface of the earth and most often send animals fleeing to find the resources they need in other places. If an



earthquake

earthquake occurs under water the result can be a **tsunami**. A tsunami is a giant wave that hits land and floods everything in its path.



tsunami

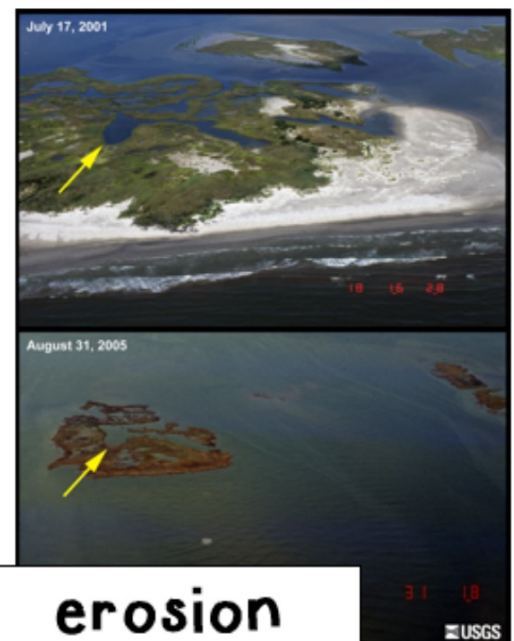
Sometimes an area of land does not get enough rainfall to keep creeks, rivers, lakes, or ponds full. The result is period of time when we have a **drought**. The drought means that there is not enough water to support all of the plant and animal life in that area. So many animals will move to another habitat in search of water.



drought

Slow Changes that affect a habitat:

Some changes occur slowly, for example, the changes in a plant life due to **changes in sunlight** (grasses, shrubs and even trees), or if **erosion** occurs, causing the soil to wear away, fewer plants will be able to survive. When these events happen, the habitat usually cannot provide the needs for the animals or plants to survive there anymore.



erosion

Other Changes that affect a habitat:



clearing land

Humans can also cause habitat changes. For example, clearing land to build homes, buildings, or farmland can cause the animals in that area to have to move to another location for food or shelter. Plants that normally grow there would not find the conditions for their growth available anymore.

Other animals or plants could also move into a habitat taking up needed space and food.

What is the result of a Changing Habitat?

If animals or plants cannot adapt to any of these changes in the environment, **extinction** (*the loss of an entire group of organisms*) of that type of animal or plant can occur. There have been several animals over the years that have gone extinct. **Endangered** animals are animals

that may go extinct if things aren't done to make certain of their survival.



endangered: panda



extinct: mammoth



endangered: leatherback

1. List some examples of RAPID changes to a habitat:

tsunami, earthquake, volcano
landslide, hurricane, drouhgt
fire, flood, disease

tornado

2. What are two SLOW changes to habitat that may take many years to see the result of?

erosion, changes in sunlight

3. How can humans cause changes to habitats? _____

clearings land for building and houses

4. What happens when extinction occurs? _____

a total loss of a certain type of animal (gone forever)

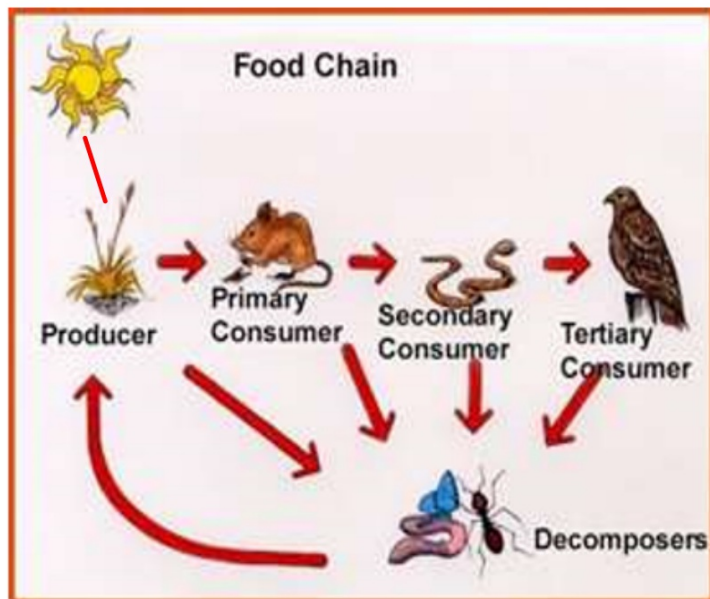
5. How can we work to protect endangered animals? _____

make certain to protect these animals and their habitats

Food Chains:

~~All organisms need energy to survive. Energy gives the organism its ability to move and do the things it needs to survive. In most habitats, the Sun provides the initial energy which is passed from plants to animals. When scientists describe the way that energy is passed from one organism to another they use a model called a food chain. A food chain uses arrows to show the direction in which energy is passed and usually contains no more than six organisms.~~

Food chains have ~~three types of organisms~~. The role of an organism can be described by how it obtains its energy.



Producers

~~Plants are called producers. This is because they produce (make) their own food. They do this by using light energy from the Sun. Producers are the first organisms listed in a food chain. We must remember though that the Sun provides the initial energy for the plants. Producers are the first link in a food chain.~~



PLANTS ARE PRODUCERS.
YOU WILL FIND PLANTS
IN EVERY ECOSYSTEM.

Consumers

~~An animal is called a consumer. This is because they cannot make their own food so they need to consume (eat) plants and/or other animals to obtain energy. Consumers are the next link in the food chain. A food chain can have any number of consumers.~~



herbivore



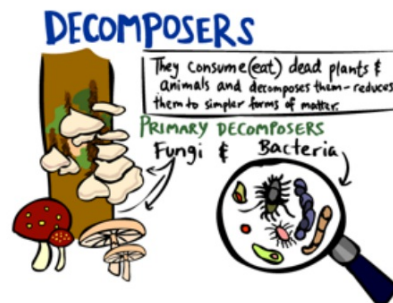
carnivore

Decomposers

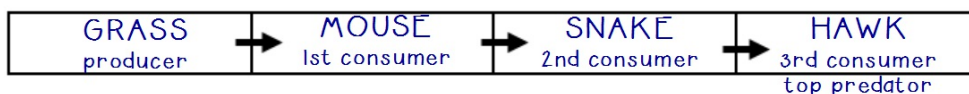
~~Worms, mold or mushrooms are decomposers. They eat decaying matter dead plants and animals and in the process they break them down and decompose them. This is how they obtain their energy. When they decompose dead plants and animals, they release nutrients and mineral salts back into the soil-~~



~~which then will be used by plants!~~
Decomposers are often not listed in a food chain even though they are always the final link.

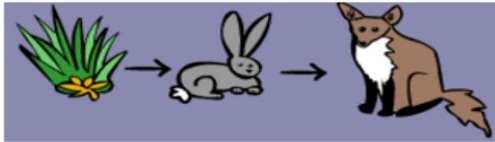


1. Fill in the boxes to complete the order in a food chain.



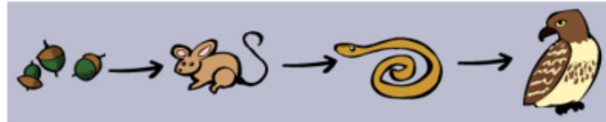
2. The arrows on this food seem like they are pointing in the wrong direction. Why is that? What are they showing the movement of?

The arrows are showing the movement of ENERGY.

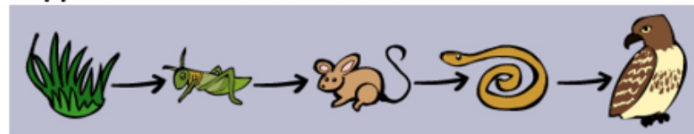


A simple food chain could start with grass, which is eaten by rabbits. Then the rabbits are eaten by foxes.

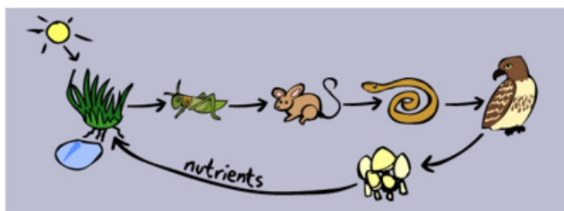
Here's another food chain, with a few more animals. It starts with acorns, which are eaten by mice. The mice are eaten by snakes, and then finally the snakes are eaten by hawks. At each link in the chain, energy is being transferred from one animal to another.



There can be even more links to any food chain. Here another animal is added. It goes: **Grass to grasshopper to mouse to snake to hawk.**



There is actually even more to this chain. After a hawk dies, fungi (like mushrooms) and other decomposers break down the dead hawk, and turn the remains of the hawk into nutrients, which are released into the soil. The nutrients (plus sun and water) then cause the grass to grow. It's a full circle of life and energy!!



So food chains make a full circle, and energy is passed from plant to animal to animal to decomposer and back to plant! There can be many links in food chains but not TOO many. If there are too many links, then the animal

at the end would not get enough energy.

Food Webs:

~~Food Webs~~ are a lot like Food Chains. The only difference is that ~~a food web shows multiple animals and how their own food chains cross with other animals.~~

