



ANIMAL ADAPTATIONS UNIT

LESSON PLAN 6th – 8th grade

Topics

Introduction to Adaptations
Camouflage
Animal Locomotion
Animal Senses
Food Web

Objectives

Students will be able to:

- Provide examples of and explain how the three types of adaptations are utilized by living organisms.
- Identify the types of adaptations that animals use for protection, locomotion, and finding food.
- Describe differences in adaptations between aquatic and terrestrial animals.
- Interpret examples of natural selection and explain why it is important for a species.
- Create a food web and identify the key elements.
- Explain how energy moves through trophic levels of a food web.
- Explain and provide examples of how an animal's habitat influences its adaptations.

Instructional Materials

Topic Video
Vocabulary Flash Cards

Assessment Materials

Video Reflection Worksheet
Video Quiz
Adaptations 1st letter Worksheet
Natural Selection worksheet
Camouflage worksheet (answer sheet available)
Animal Locomotion worksheet
Animal Senses worksheet (answer sheet available)
Food Web worksheet (answer sheet available)



Related Materials

Links to videos and reading material that provides additional information on topics.

NOAA Resources

The National Oceanic and Atmospheric Administration (NOAA) is a partner of SoundWaters. These are additional resources you may use in addition to the other materials included above.

Aquatic food webs

<https://www.noaa.gov/education/resource-collections/marine-life-education-resources/aquatic-food-webs>

Horseshoe crabs

<https://www.fisheries.noaa.gov/feature-story/horseshoe-crabs-managing-resource-birds-bait-and-blood>

<https://oceantoday.noaa.gov/every-full-moon/full-moon-horseshoecrab.html>

Invertebrate facts

<https://www.fisheries.noaa.gov/national/outreach-and-education/fun-facts-about-intriguing-invertebrates>

Plankton in the arctic

https://oceantoday.noaa.gov/animalsoftheice_krill/

Invent an animal

https://oceanexplorer.noaa.gov/edu/lessonplans/gal_gr5_6_l3.pdf

NGSS Standards

Matter and Energy in Organisms and Ecosystems: MS-LS2-2

Natural Selection and Adaptations: MS-LS4-4

TYPES OF CAMOUFLAGE

An animal's behaviors affect what type of camouflage is best for them. Select a pair of animals below and explain what type of camouflage is used by the predator/prey based on their behaviors.

Zebra and lion; seagull and spider crab; shark and seal;

Zebra travel in herds so they use disruptive coloration so a lion cannot tell the difference between them. Lions use concealing coloration to blend in and make it easier to hide from their prey

Spider crabs do not move very fast so they use both concealing and disguise to look like a rock so the seagull cannot locate them.

Sharks use concealing, which is a type of concealing coloration. This breaks up their shape for when they are hunting seals.

In the video, we discussed 3 types of camouflage. If you could have any of these types of camouflage, which would it be? Make sure to explain how your type of camouflage would affect your choice and habitat and what food you eat.

Name: _____



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ANIMAL SENSES

In Long Island Sound, some animals live on the bottom and others actively move around in the water column

Which types of receptors would be most helpful for living in each area? Make sure to explain your answer!

Auditory receptors, Mechanoreceptors, Chemoreceptors, Photoreceptors

<u>Bottom Dwelling Animals</u>	<u>Actively moving around in water column</u>
<p><i>Example</i></p> <p>Bottom is often dark - less likely to be visual for most animals Instead other senses are heightened to make up for it</p>	<p><i>Example answers, could be others</i></p> <p>Wide open area to observe</p> <p>Mechanoreceptors (lateral line), Chemoreceptors (smelling organisms around) Auditory (echolocation)</p>

Which of your senses would be most important to you if you lived in the water? Explain your answer.

Answers vary

If an animal did not have any eyes, how could its other senses change or adapt to help it survive?

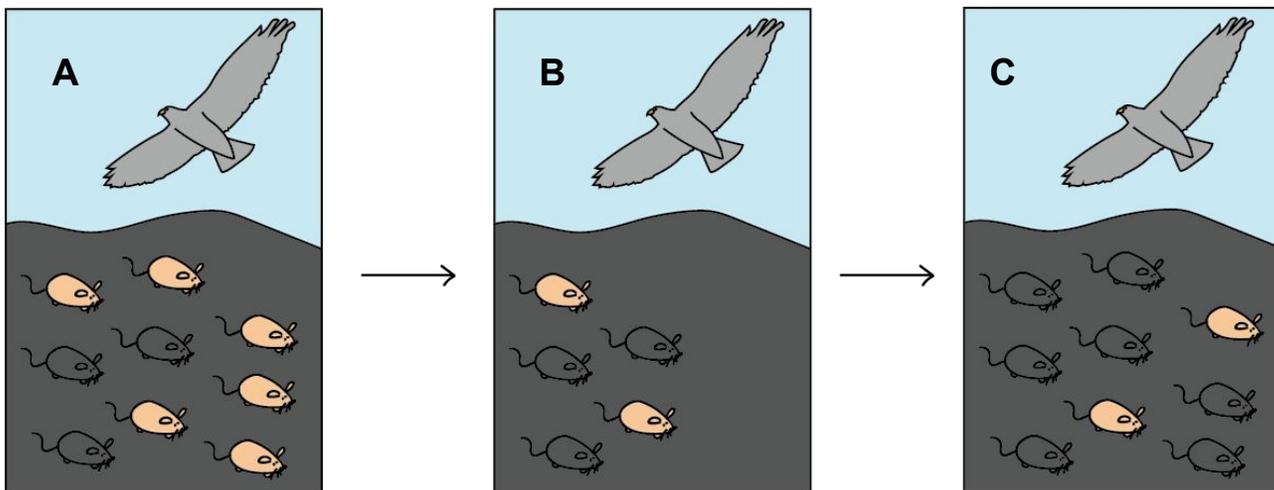
Answers vary, some examples are...

Other senses are heightened to make up for it. They may also have specialized body parts that help with smell, taste, hearing, or touch that differs from animals that can see. It may develop other defenses to protect it (sea anemone)

Name: _____

NATURAL SELECTION

What is natural selection? Give an example (not a giraffe) and explain.



The three pictures above demonstrate natural selection. Explain what is happening in pictures A, B, and C and how they relate to natural selection.

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ANIMAL LOCOMOTION

The way animals move is based on their specific body parts.

For example, humans have long jointed legs that allow us to walk and run in different directions.

Column A	Column B
Octopus	Invertebrate, can move its arms freely to change its shape
Lobster	Legs for walking surrounded by hard shell, tail to swim backwards
Flounder	Tail like a paddle, swims in up and down movement (not side to side)
Diamondback Terrapin	4 legs, nails, webbed feet

From the table, select an animal from column A and a DIFFERENT method of locomotion from column B. Explain how the animal would have to change the way it moves and where it lives (if that applies).

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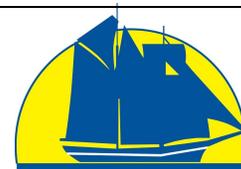
Bottom Dwelling Animals

Actively moving around in water column

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FOOD WEB

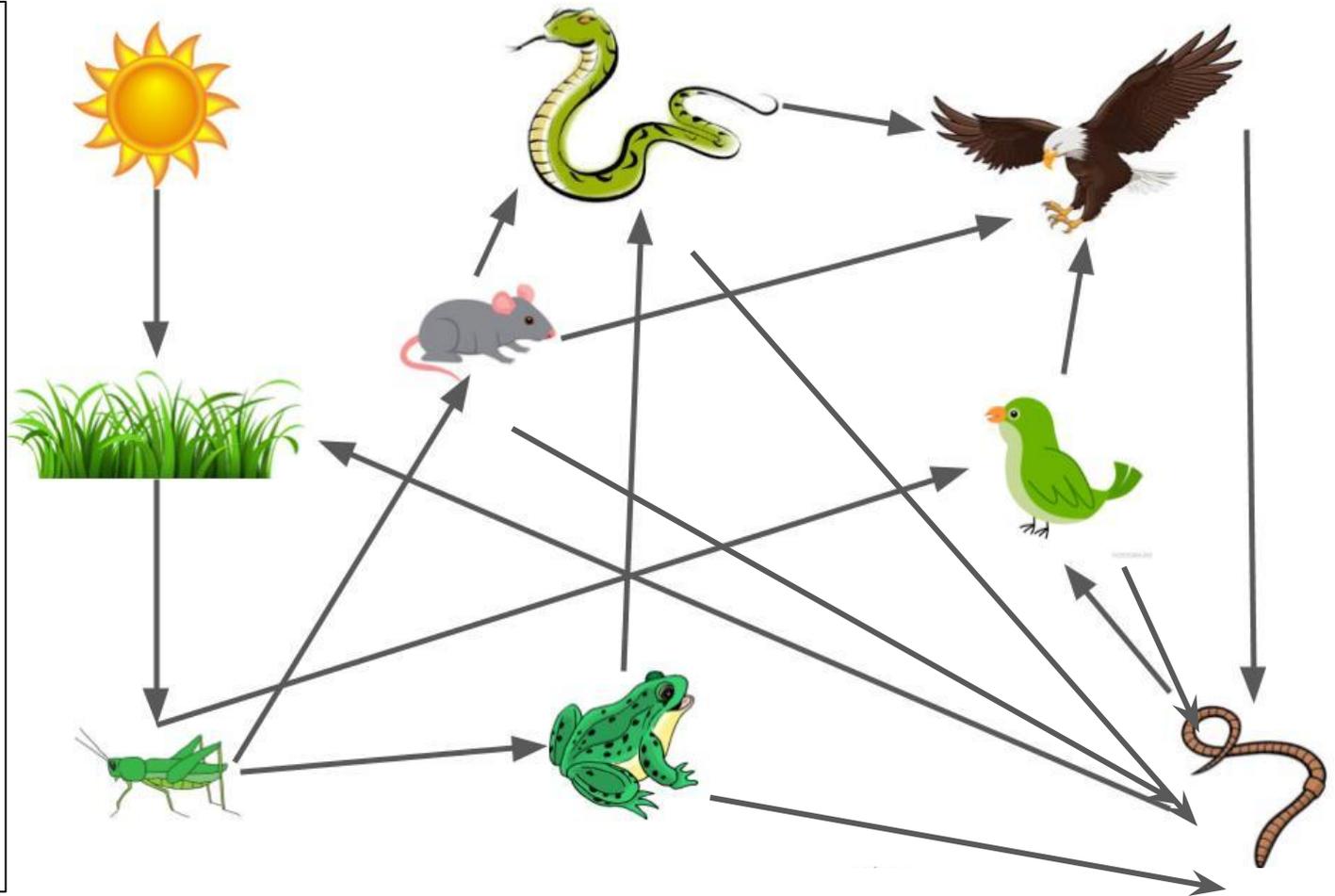
Use arrows to complete the food web

What would happen to this food web if we removed the snake?

The eagle would have one less food source, so it would eat all the small birds faster, until they were all gone.

There would be an overpopulation of frogs, which would make the number of grasshoppers decrease.

If there are less grasshoppers then the mouse will not have anything to eat and it will not survive.



Fill out the trophic levels table:

Producer/ Autotroph	Primary Consumer	Secondary Consumer	Tertiary Consumer	Apex Predator	Decomposer
grass	grasshopper	Mouse Frog Small bird	snake	Eagle (large bird)	worm



FOOD WEB

Use arrows to complete the food web

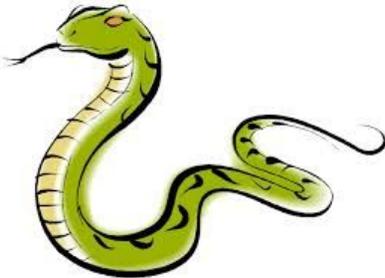
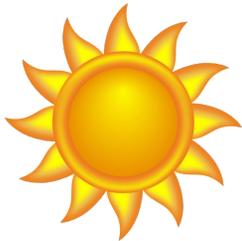
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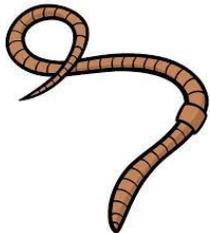
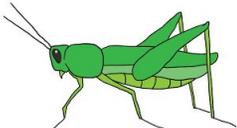
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FOOD WEB



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Name: _____



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