
Animals and Their Adaptations



Sixth-Grade Teacher Resource Guide

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Lesson Summary: The *Animals and Their Adaptations* program provides students with an opportunity to touch and examine live animals and natural specimens from a variety of taxonomic groups, including arthropods, amphibians, reptiles, and mammals. During the animal presentations, students will participate in an instructor-led group discussion emphasizing each animal's diet, ecological role, habitat, and physical adaptations (structure and function) needed for survival.

Vocabulary: Below are words and concepts that relate to the *Animals and Their Adaptations* program.

Adaptation (in biology): a change in either the structure or functions of an organism over time that better enables it to survive and reproduce in its environment. An adaptation can be structural (e.g., talons for seizing prey), physiological (e.g., ability to change color), or behavioral.

Amphibian: a cold-blooded animal that starts life in a wet environment but can live on land once it matures

Arthropod: an animal with an exoskeleton and jointed legs

Biology: the science that is concerned with the growth, development, and functioning of living things

Camouflage: something (such as color or shape) that protects an animal from attack or helps it to surprise others by making the animal difficult to see against the area surrounding it

Carnivore: an animal that feeds primarily on meat

Diversity: the state or condition of being unlike; dissimilarity or variety

Ecosystem: a community of living things, together with their environment

Environment: everything around an animal, its natural surroundings including the air, water, soil, and plants

Habitat: the particular natural environment (place) where an animal or plant is usually found.

Herbivore: an animal that feeds solely on plants

Inheritance: the genetic process of passing characteristics to succeeding generations, or the characteristics thus transmitted

Mammal: a warm-blooded animal that has a body more or less covered by hair, gives live birth, and nourishes its young with milk from the mammary glands of the female

Mimicry: the imitation by an organism of its environment or of other organisms as a means of survival. **Also: mimic**

Niche: the role or part that an animal plays in its habitat or environment

Omnivore: an animal that feeds on both plants and animals

Poisonous: dangerous to bite; containing chemicals that harm the body when eaten

Predator: an animal that hunts and eats other animals

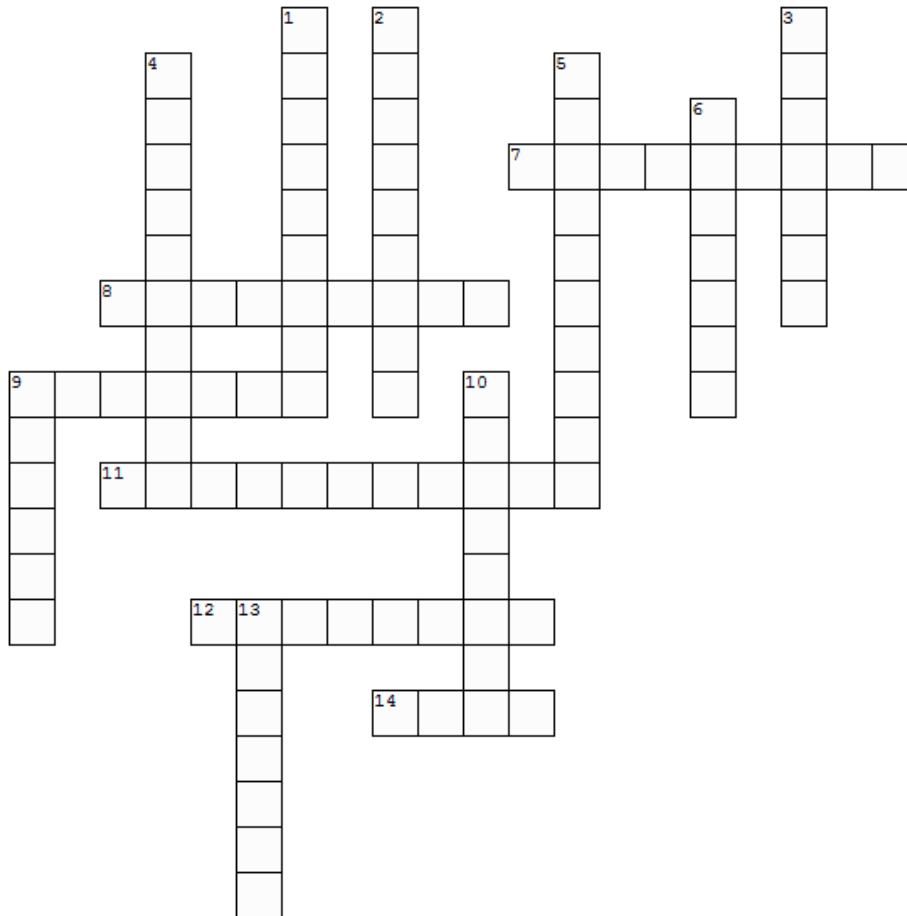
Prey: an animal that is hunted or killed by another animal for food

Reptile: a cold-blooded animal with dry scaly skin that typically lays soft-shelled eggs on land

Venomous: dangerous to be bitten by; capable of biting, stinging, or otherwise wounding other creatures with harmful chemicals

Definitions based on www.dictionary.reference.com

Language Arts Crossword Puzzle Animals and their Adaptations



ADAPTATION AMPHIBIAN BIOLOGY CAMOUFLAGE CARNIVORE
DIVERSITY HABITAT HERBIVORE INHERITANCE MAMMAL MIMICRY
OMNIVORE PREDATOR PREY REPTILE

Down

1. The state or condition of being unlike; having many different individuals within a group.
2. An animal that eats only plants.
3. The natural environment of a plant or animal.
4. A change in an organism over time that better enables that type of organism to survive and multiply.
5. Something (such as color or shape) that protects an animal from attack by making the animal difficult to see in the area around it.
6. The science of all living things, including the study of plants and animals and how they develop and survive.
9. A warm-blooded animal more or less covered by hair that gives live birth, and nourishes its young with milk.
10. An animal that eats both plants and animals.
13. A cold-blooded animal with dry scaly skin that typically lays soft-shelled eggs on land.

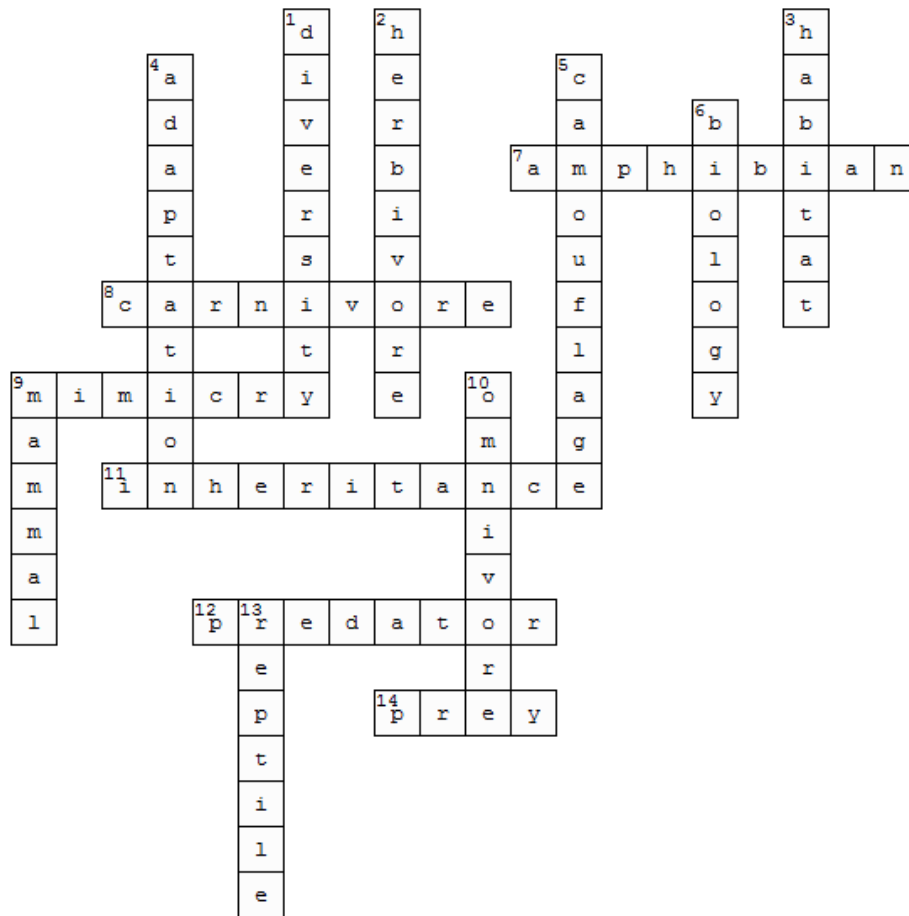
Across

7. A cold-blooded animal that starts life in a wet environment but can live on land once it matures.
8. An animal that eats only meat.
9. Something about an animal's behavior or appearance that is like another organism and helps to protect it from being eaten.
11. The genetic process that results in animals passing on certain traits (characteristics) to the next generation (their babies.)
12. An animal that hunts and eats other animals.
14. An animal that is hunted and killed for food.

Answer Key

Language Arts Crossword Puzzle

Animals and their Adaptations



Down

1. The state or condition of being unlike; having many different individuals within a group. (**diversity**)
2. An animal that eats only plants. (**herbivore**)
3. The particular natural environment (place) where an animal or plant is usually found. (**habitat**)
4. A change in an organism over time that better enables that type of organism to survive and multiply. (**adaptation**)
5. Something (such as color or shape) that protects an animal from attack by making the animal difficult to see in the area around it. (**camouflage**)
6. The science of all living things, including the study of plants and animals and how they develop and survive. (**biology**)
9. A warm-blooded animal more or less covered by hair that gives live birth, and nourishes its young with milk. (**mammal**)
10. An animal that eats both plants and animals. (**omnivore**)
13. A cold-blooded animal with dry scaly skin that typically lays soft-shelled eggs on land. (**reptile**)

Across

7. A cold-blooded animal that starts life in a wet environment but can live on land once it matures. (**amphibian**)
8. An animal that eats only meat. (**carnivore**)
9. Something about an animal's behavior or appearance that is like another organism and helps to protect it from being eaten. (**mimicry**)
11. The genetic process that results in animals passing on certain traits (characteristics) to the next generation (their babies.) (**inheritance**)
12. An animal that hunts and eats other animals. (**predator**)
14. An animal that is hunted and killed for food. (**prey**)

Language Arts Word Search

Animals and their Adaptations

Circle the vocabulary in the word search below. Can you find all the animal-related words?

B	B	B	D	R	R	O	T	A	D	E	R	P	F	O	P
D	R	I	A	D	A	P	T	A	T	I	O	N	W	R	S
N	D	O	R	S	D	E	R	O	V	I	B	R	E	H	Q
O	I	L	L	X	R	J	W	G	O	C	N	Y	I	O	P
Q	V	O	L	C	A	R	N	I	V	O	R	E	M	Y	G
G	E	G	A	I	N	E	V	V	W	A	V	N	Y	R	M
B	R	Y	M	Y	T	C	V	P	A	A	I	F	C	C	G
Q	S	B	M	A	X	N	B	I	M	V	I	V	A	I	S
Z	I	Q	A	Y	E	A	G	P	O	C	T	C	M	M	C
R	T	G	M	X	Y	T	H	R	T	Z	A	R	O	I	B
E	Y	P	F	B	M	I	E	M	U	B	T	W	U	M	C
P	J	D	G	P	B	R	P	Y	M	I	I	D	F	N	G
T	Z	N	M	I	V	E	T	K	Q	O	B	T	L	D	I
I	V	R	A	H	W	H	G	Z	S	W	A	K	A	S	Z
L	U	N	C	A	P	N	X	B	D	O	H	Z	G	N	J
E	O	V	J	M	O	I	R	B	F	L	E	V	E	F	Z

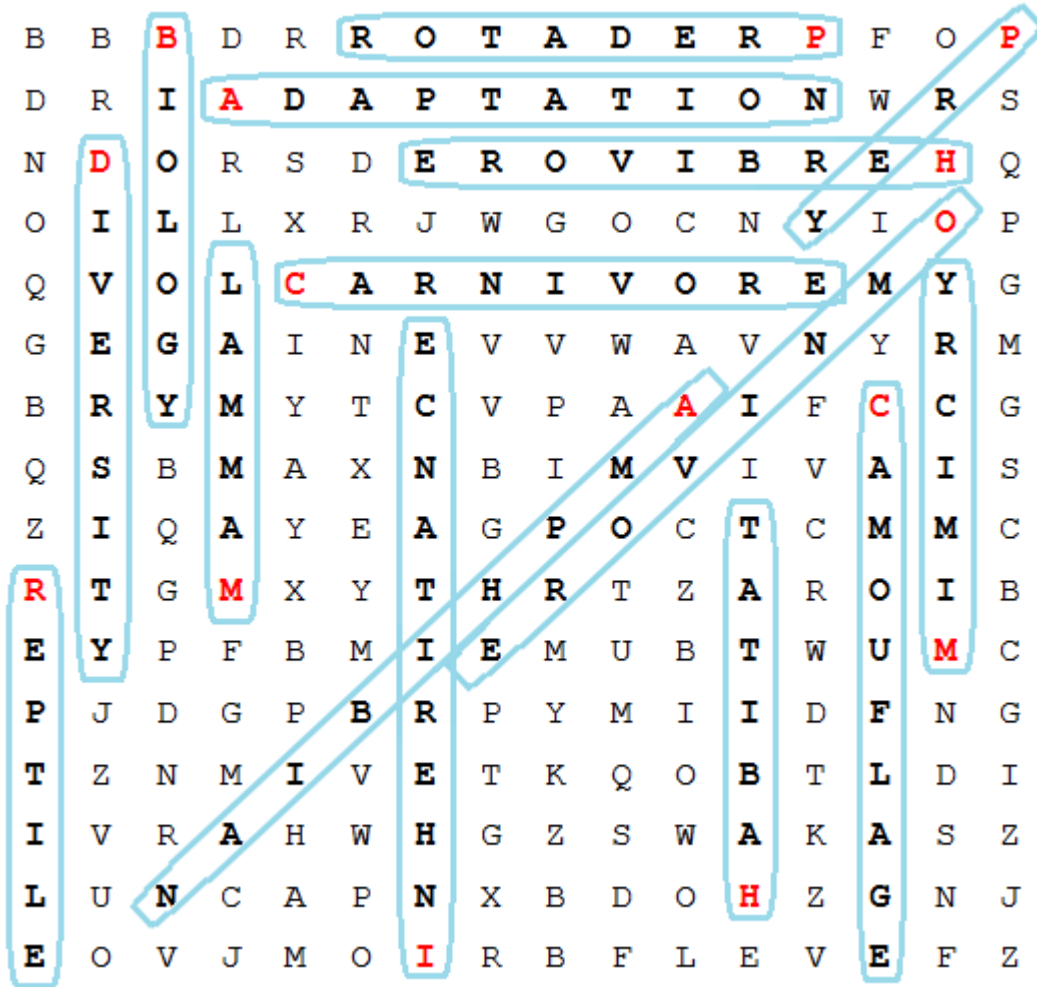
Word Bank

ADAPTATION
AMPHIBIAN
BIOLOGY
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CARNIVORE

DIVERSITY
HABITAT
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INHERITANCE
MAMMAL

MIMICRY
OMNIVORE
PREDATOR
PREY
REPTILE

Answer Key
Language Arts Word Search
Animals and their Adaptations



Word Bank

ADAPTATION
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Animals and Their Adaptations: Extension Activities

The extension activities listed below are from RAFT (Resource Area For Teaching). RAFT educational content is available online (www.raftbayarea.org) at no cost and is aligned to California Science Standards and Next Generation Science Standards. Below is a selection of post-visit activities from RAFT to build on student learning about animals and adaptations.

[RAFT Idea: Blubber Gloves - Resource Area For Teaching](#)

Grades Covered: Pre-K through 12

Subjects Covered: Physical Science, Life Science

Curriculum Topics: Marine mammals, Environments, Ecology, Adaptations

Description: Adaptations in physical structure or behavior may improve an organism's chance for survival.

www.raftbayarea.org/ideas/Blubber%20Gloves.pdf

[RAFT Idea: Baby, It's Cold Outside - Resource Area For Teaching](#)

Grades Covered: K through 6

Subjects Covered: Life Science

Curriculum Topics: Environments, Habitats, Adaptations

Description: This diorama helps students visualize life and ecology in an arctic environment.

<http://www.raftbayarea.org/ideas/Baby,%20It's%20Cold%20Outside.pdf>

[RAFT Idea: What Makes a Bird - Resource Area For Teaching](#)

Grades Covered: Pre-K through 3

Subjects Covered: Life Science

Curriculum Topics: Animals, Environments, Sorting & Classifying

Description: In this activity primary learners learn how to sort animals into two categories.

www.raftbayarea.org/ideas/What%20Makes%20a%20Bird.pdf

[RAFT Idea: Camouflage - Resource Area For Teaching](#)

Grades Covered: K through 12

Subjects Covered: Life Science

Curriculum Topics: Natural Selection, Ecosystems, Probability, Design

Description: In this activity, students will see the benefits of taking a closer look at the world around them.

www.raftbayarea.org/ideas/Camouflage.pdf

Animals and Their Adaptations: Education Standards

Our Animals and Their Adaptations program will contribute to students' ability to meet the California Science Content Standards, Common Core, and Next Generation Science Standards listed below.

Common Core Sixth Grade:

Speaking and Listening Standards: Students will...

- **CCSS.ELA-LITERACY.SL.6.1.C.** Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.
- **CCSS.ELA-LITERACY.L.6.4** Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.
 - a. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
 - b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *audience*, *auditory*, *audible*).

Excerpted from Common Core Standards <http://www.corestandards.org/>

Next Generation Science Standards Sixth Grade (Middle School 6-8):

From Molecules to Organisms: Structures and Processes

- **MS-LS1-3:** Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
 - **Disciplinary core ideas:**
 - **LS1.A: Structure and Function:** In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions.
- **MS-LS1-4:** Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.
 - **Disciplinary core ideas:**
 - **LS1.B: Growth and Development of Organisms:** Animals engage in characteristic behaviors that increase the odds of reproduction.
 - **Crosscutting Concepts:**
 - **Cause and Effect:** Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability.
- **MS-LS1-5:** Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
 - **Science and Engineering Practices:**
 - Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.
 - **Crosscutting Concepts:**
 - **Cause and Effect:** Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability.

Animals and Their Adaptations: Education Standards

MS-LS4-4 Biological Evolution: Unity and Diversity

- **MS-LS4-4:** Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.
 - **Science and Engineering Practices:**
 - Construct an explanation that includes qualitative or quantitative relationships between variables that describe phenomena.
 - **Disciplinary core ideas:**
 - **LS4.B: Natural Selection:** Natural selection leads to the predominance of certain traits in a population, and the suppression of others.
 - **Crosscutting Concepts:**
 - **Cause and Effect:** Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability.

Excerpted from NGSS <http://www.nextgenscience.org/>