



Adaptations: Traits to Thrive in an Environment

Adaptations: Create a Creature

Key Question

If you could **create a new creature** to live in your community, what **adaptations** would it have and why?

Objectives

- Students will **design and share** their own organisms with adaptations.
- Students will **synthesize** their understanding of physical and behavioral adaptations

Grades: 2-5

Time: 45 minutes

Location: Classroom

Materials

- o EOL Species Cards
- o Create a Creature Species Card template (attached)
- o Art supplies (e.g. pencils, pens, colored pencils, crayons, markers)
- o Weights and scales (optional)
- o Measuring Tape (optional)

Preparation

Print copies of Create a Creature Species Card templates for the class.

Directions

Engage (3 minutes): Ask students, what are some of your favorite adaptations of organisms in our area? Make a T-chart on board and have students write examples of behavioral and physical adaptations of organisms found where they live.

Explore (3 minutes): Now, ask students to brainstorm additional adaptations from other places (e.g., deserts, oceans, etc.) that you think might help organisms. Be creative! Students can share ideas and teacher will add those things to the list. You should have a running list on the board of key adaptations. If students need help thinking of new ideas, provide a few examples first to start conversation.

Explain (25 minutes): There are several options for this activity. Read through to find the right alternative for your students!

Option A: Create a Creature from Scratch

Pass "Create a Creature" Species Card template and art supplies to each student. Using the physical and behavioral adaptations listed on the board as a guide, each student will design and draw an organism that they believe would be well-adapted to life in our area. Students will fill in trait information on the card and color based on the organism's taxon group. Students can refer to other species cards to help them choose a taxon group and traits. Students should pick at least one physical adaptation and behavioral adaptation to highlight on the bottom section of the species card.

Option B: Mix-and-Match a Creature

This option is best for students who prefer more guidance/direction in creative activities. Write traits on small pieces of paper and organize by trait type. For example:

1. Weight: 50 g, 500 g, 5 kg
2. Body length: 5 cm, 50 cm, 2 m
3. Lifespan: 3 months, 7 years, 80 years
4. Physical adaptations: sharp teeth, long hopping legs, venom
5. Behavioral adaptations: burrows in soil, climbs trees, nocturnal
6. Food Web Role: omnivore, herbivore, carnivore, apex predator
7. Taxon group: insect, mammal, fish

Students can pick one of each type (one weight, one body length, etc.) and use it to make their creature. Or, students can pick just a few traits to help get them started. It will be helpful to measuring tape or rulers and weights/scales for students to use to visualize the dimensions of their creatures.

Option C: Specific Physical and Behavioral Adaptations

Similar to option B, students can design traits and draw a creature after choosing **specific physical characteristics** from a container: for example body covering (skin, scales, exoskeleton), color, feet, mouth, movement, protection, size. From here, students can write a story about the **behavioral** adaptations this creature might have: its activity, diet, hunting or protective behavior, etc.

Option D: Adapt-a-Creature

Students will choose real organisms **from our area** and design specific adaptations for another environment: the arctic tundra, desert, or aquatic biome, for example.

OR

Students will choose organisms from **another** environment and design specific adaptations to help it thrive locally.

Elaborate/Evaluate (15 minutes): Students will share their species cards with the class. When presenting their creatures, ask students to describe each adaptation and how it helps that organism survive here.

Extensions + Modifications

1. **Incorporate math standards:** students can design the creature at a certain size and draw it to scale on the species card template to incorporate math concepts. The length and scale should be referenced on the species card.
2. After the class presents their creatures, challenge them to:
 - a. Group with other creatures of the same classification
 - b. Build a food chain with other creatures

Next Generation Science Standards

K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS2-1. Construct an argument that some animals form groups that help members survive.

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.*

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.



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Common Name

Scientific Name



Taxon Group

(draw your organism here)

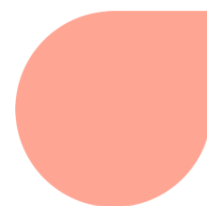


Habitat

Food Web




Traits




- 1 _____
- 2 _____
- 3 _____
- 4 _____









**IUCN Redlist
Status**




Adaptations + Energy Sources




Common Name		
Scientific Name		
(draw your organism here)		
	Habitat	Food Web
	<div>Traits</div> <div> 1 _____ 2 _____ 3 _____ 4 _____ </div> <div>  IUCN Redlist Status </div>	
<div>Adaptations + Energy Sources</div> <div> _____ _____ _____ _____ </div>		

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(draw your organism here)		
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