



Adaptations: Traits to Thrive in an Environment

Behavioral Adaptations

Key Question

How do **behavioral adaptations** allow animals to thrive in their environments and get their resources?

Objectives

- Students will **understand** that behavioral adaptations are actions/behaviors that allow animals thrive in their environments
- Students will **visualize** the purpose and challenges of migration

Grade: 2-5

Time: 30-45 minutes

Location: Classroom

Materials

- Computer with Internet access (Monarch Butterflies Google Earth Tour video and EOL collections)
- Projector with speakers (Monarch Butterflies Google Earth Tour video)
- [Monarch Butterflies Worksheet](#) (attached)
- EOL Species Cards: http://eol.org/info/eol.org/info/species_cards

Culminating Activity

Students discuss the migration of monarch butterflies as an example of behavioral adaptations, then act out the behavioral adaptations of organisms in charades.

Directions

Engage (5 minutes):

Review some examples of behavioral adaptations

- Food: carnivore, omnivore, herbivore
- Activity: nocturnal, diurnal, crepuscular
- Temperature/seasonality: hibernation, estivation, migration, tolerate
- Symbiosis: two species interact or live together, which can be mutualism (both benefit), commensalism (one species benefits, another is not affected), or parasitism (one species benefits, the other is harmed)
- Shelter
- Predator/prey interactions
 - Prey: hiding, playing dead, running
 - Predator: stealthy, sit and wait, etc.
- Communication
- Territorial behaviors

Explore (5 minutes): Noteworthy Behavioral Adaptations

On the board, write Migration, Hibernation, Parasite, and Burrow. Show students photos (attached at end of activity) and have them guess which of the animals has the behavioral adaptation and explain their reasoning. Then, share these stats about noteworthy adaptations:

- Arctic Tern: **Migrates** about 25,000 miles annually from wintering grounds in Antarctica to summer grounds near the arctic
- Uinta Ground Squirrel: **Hibernates** 9-10 months per year from September to June in the northern Rocky Mountains
- Brown-headed Cowbird: **Parasitizes** the nests of other birds by knocking owners' eggs out and laying own eggs, which the host bird species will raise
- Gopher tortoise: **Burrows** underground for shelter from predators, fire, heat, and cold. Burrow can be 70 feet long, 20 feet deep. In Florida, about 400 other species use gopher tortoise burrows for shelter, often co-mingling in the space, making the tortoises a **keystone species** in their ecosystem

Explain (25 minutes)

Watch the Monarch Butterfly Google Earth Tour video, found on the EOL podcast page:

http://eol.org/info/podcasts_insects_monarchs. Students should read questions ahead of time, then watch the tour without filling in the sheet. Then, play video again and have students answer questions. Lead a discussion with students about monarch butterflies and review worksheet together.

Elaborate/Evaluate (10 minutes): Play "Behavioral Adaptations Charades"

Remove all plants and fungi from a deck of [EOL species cards](#) and place animal cards in a hat or bag. Split class into two teams and have the teams alternate acting out and guessing the behavioral adaptations of animals.

Extensions

- Plant a butterfly garden outside your classroom with a few important plants for butterflies, including milkweed for monarchs. Contact Master Gardeners at Okaloosa Extension Office to help your class choose the right plants for your schoolyard.
- Visit the Journey North Monarch citizen science project (<https://www.learner.org/jnorth/monarch/index.html>), and show students how they can participate in a large-scale effort to monitor monarchs along their migration
- If it is the right time of year, take your class outside to observe butterflies
- The BBC Nature website has a large selection of video clips arranged by adaptation: <http://www.bbc.co.uk/nature/adaptations>

Next Generation Science Standards

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.

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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Monarch Butterfly Migration Worksheet

Answer these questions as you listen and watch to the Encyclopedia of Life **Monarch Butterfly Google Earth Tour**:

1. Where do monarch butterflies migrate annually? Is migration a physical or behavioral adaptation?
2. Describe the life cycle of a monarch butterfly. How many generations of monarchs are required to leave and return to winter range?
3. What habitat and host plant do monarchs require?
4. What challenges do monarch butterflies face along their migration?
5. How have humans influenced (both positively and negatively) monarch butterfly migration?
6. How has citizen science helped people understand monarch butterfly migration?
7. How did the story of monarch butterfly migrations and human influences make you feel?

Behavioral Adaptation Stats Photos





Images: Arctic tern, CC BY-NC-SA; Uinta Ground Squirrel, AdititheStargazer CC BY-NC-SA; Brown-headed Cowbird, eyespywithmy CC BY-NC; Gopher Tortoise, Kit CC BY-NC-SA