

Animal Adaptations

EDUCATION STANDARDS

1.5

3.4

4.2

5.1

LS.7

BIO.6

OVERVIEW & PURPOSE

Driving Question: What physical and behavioral adaptations do animals have and how do those adaptations serve as survival strategies?

Students will explore different animal adaptations and how they help animals survive by:

- Part 1: Look at physical characteristics of different animals and how they help that specific animal to survive.
- Part 2: Look at animal behavior (instinct and learned) that help animals survive and thrive.
- Part 3: Students develop projects that help dive deeper into animal adaptations.

OBJECTIVES

- Provide students with inquiry-based learning opportunities.
- Use 21st Century scientific skills and processes to safely investigate the natural world.
- Help students become familiar with primary and secondary research sources, conduct experiments and collect data.
- Engage students through project-based learning and STEM where applicable.

ESTIMATED TIME

PART ONE

Approximately 45 minutes as written, but additional time can be spent with large or small group discussions. This lesson plan is compatible with a virtual learning model.

PART TWO

Approximately 45 minutes as written, but additional time can be spent with large or small group discussions. This lesson plan is compatible with a virtual learning model.

PART THREE

This project should take place over several class periods or virtual learning days. Virtual project options are available in the project choice boards.

MATERIALS NEEDED

PART ONE

- Create a Google folder for your class to use.
- Student Page 1 — Each student should have access to this page in order to complete the activities and links to supplemental resources. Younger students may need assistance with reading the directions or completing the activities.
- Curiosity Cultivation — Copy the PowerPoint slides into your folder and duplicate the 2nd slide (one for each student). **This will keep your students' work private.**
- You can watch the Part 1 video with your students or instruct them to view separately. The video will introduce students to different physical adaptations and how those adaptations help animals survive.
 - Creature Features (Grade 1)
 - Physical/Structural Adaptations (Grades 3-5)
- Animal videos — Students can watch all of the animal videos below to understand specific physical adaptations for a specific animal.
 - Barn owl (bird of prey); Bison (primary consumer); American Alligator (predator); Amphibians (predator); Atlantic Sturgeon; Insects – videos of mealworm, bess beetle, and Madagascar hissing cockroach (decomposers); Channel Whelk
- Mimicry game — this game will help students see how butterfly species have developed similar appearance to a poisonous butterfly to help it survive. The player is a bird and will come to learn which butterflies they can eat and which ones they cannot. This also helps them to understand learned behavior as a predator.
- Camouflage Hide and Seek — this activity will help students to create camouflaged shapes. Once they complete the activity, they can share a picture or video within your class' google folder to see if their classmates can find the hidden shape(s).
- Animal Classification based on physical characteristics
 - Vertebrate Artifacts 360 — In a museum style set up, students can explore the 5 vertebrate animal groups.
 - Invertebrates — This Happy Learning educational video for kids is 5:25 in length on YouTube and explores the classification of the 6 invertebrate groups.

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MATERIALS NEEDED CONTINUED

PART TWO

- [Student Page 2](#) — Each student should have access to this page in order to complete the activities and links to supplemental resources.
- [Behavior Adaptation Video](#)
- [Animal Behavior Study](#) — The Animal Behavior Study allows students to write down observations of an animal they see and identify what the behavior is and how it helps the animal. The behavior study focuses on movement, social interactions, resting, eating/drinking and communication. This could be a fun family activity. Younger students may need assistance in recording the animal's behavior. Remember to follow the [Leave NO Trace](#) principles for outdoor ethics.
- Migration — [Canada Goose Choose Your Own Adventure](#)
- [Bird Cast](#) — migratory forecasts
- Instinct vs. Learned behavior — [box turtle training video](#) and [mimicry game](#)
- [Hibernation](#) — This link takes you to the online Discover Wildlife page, “What is hibernation?”. This resource looks at different types of energy conservation strategies including hibernation, aestivation, torpor and denning.

PART THREE

- [Student Page 3](#) — Using the resources or observation data from activities and resources in Part 1 and 2, students will create a product showcasing their understanding of physical and behavioral adaptations for an animal of their choice in this project based learning opportunity.
- [Guiding Questions](#) for students to use in the project type of their choice.
- [Project Choice Board](#) (Grade 1) or [Project Choice Board](#) (Grades 3-5, LS and BIO)