

Stinky Cecil in Terrarium Terror!

Curriculum Connections and Activity/Discussion Guide The activities in this guide align with Next Generation Science Standards for grades 3–5.



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Stinky Cecil in Terrarium Terror! Paige Braddock

AMP! Comics for Kids Andrews McMeel Publishing ISBN: 9781449471866

GRADE LEVEL: 3–5

SUBJECT Science—Animal Adaptations

CONTENT STANDARDS

Next Generation Science Standards

OVERVIEW

Students will read *Stinky Cecil in Terrarium Terror* and cite text evidence of the structural adaptations of the character Nesbit the chameleon. Students will then use this evidence to make predictions about the chameleon's natural environment. Finally, each student will research the structural adaptations of an animal of his or her choosing and create a visual product (advertisement, infographic, comic, video, etc.) based on his or her research.

Grade 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-LS4-3]
- 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. [3-LS4-4]
- Use evidence to support the explanation that traits can be influenced by the environment.
 [3-LS3-2]
- Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
 [3-LS4-2]

Grade 4

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

Grade 5

- Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. [5-PS3-1]
- Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. [5-LS2-1]





Procedure

OBJECTIVES

- Students will find text evidence of the structural adaptations of a chameleon.
- * Students will analyze the evidence they find and make predictions about the chameleon's natural environment.
- * Students will research the structural adaptations of animals of their choosing.
- Students will create visual presentations (advertisements, infographics, comics, videos, etc.) showing their new knowledge about structural adaptations.

TIME FRAME

1–3 class periods

MATERIALS

- * Copies of Stinky Cecil in Terrarium Terror
- * Chart paper, whiteboard, or other display
- * Structural Adaptations Project assignment sheet
- * Art supplies and/or digital tools for creating visual presentations

VOCABULARY

Bird of prey: a bird that feeds on other animals

Camouflage: disguising one's appearance by blending into the surroundings

Chameleon: a slow-moving lizard with a prehensile tail and the ability to change color and pattern

Climate: the weather and temperature in a particular area

Depth perception: the ability to see the world in three dimensions

Ectotherm: an animal that depends on external sources of body heat

Endangered: a species of plant or animal that has so few individuals left that it is at serious risk of becoming extinct

Endotherm: an animal that generates internal body heat

Environment: everything in the surroundings, both living and nonliving, in which an animal lives

Epilogue: a short piece after the end of a story that wraps things up

Garter snake: a common, harmless North American snake

Habitat: the area where an animal lives that fulfills its needs, such as food, water, soil, temperature, and shelter from predators

Litterbug: someone who puts trash where it shouldn't be

Lizard: a long-bodied reptile with four legs and a tapering tail

Mammal: an animal that has a backbone, breathes air, gives birth to live babies, and grows hair

Reptile: a cold-blooded animal that is covered in scales and has a backbone

Salamander: an amphibian that looks like a lizard but lives in water and has smooth skin

Terrarium: a container, usually glass, for keeping small animals and plants

Toad: a dry-skinned, short-legged type of frog that reproduces in water and lives its adult life on land





BEFORE READING

- Show students the cover of Stinky Cecil in Terrarium Terror. Ask students what they think the book is about. If students have read other Stinky Cecil titles, ask them to share what they know about the characters and settings.
- Allow a few minutes for students to look through Stinky Cecil in Terrarium Terror without reading the text.
- Ask students to predict what they think the story will be about and who the characters are. Have students make predictions based on visual cues.



- 4. Ask students if the animals in the book look and act like real animals. What are they doing that real animals wouldn't do? (*They talk; they fly in a helicopter.*) Explain to students that in this story, the animals are *anthropomorphized*, which means they act like people. The author, Paige Braddock, based each character on a real animal and included some aspects of the animal's true nature, but she made up their personalities for the story. As students read the book, have them look for animal behaviors that might be true to life and behaviors that the author most likely made up.
- **5.** Let students know that their purpose for reading this book will be to learn more about what the animals in the story are like in real life. Activate

students' prior knowledge by asking them each to turn and talk to a partner about any animals he or she may have seen in the natural environment near school or his or her home, or in controlled environments such as pet stores or zoos.

DURING READING

Read through the book as a class, using the discussion questions and information on pages 5-7. Remind students that in comics, information comes from both pictures and words (and the way they work together) so they need to read both the text and the images.

AFTER READING

- 7. As a class, discuss the difference between a controlled environment and a natural habitat. Cecil's pond is a natural habitat, and the animals that live there have adapted to survive in that particular environment. The terrarium is a controlled environment. As Cecil points out on pages 45–46, in the terrarium, he is free from predators, free from starvation, and free from pollution. Ask students what they would need to include to meet the animal's survival needs if they were to create a controlled environment for a class pet? (Shelter, food, water, warmth, etc.)
- 8. Explain that in a natural habitat, animals adapt, or change, so they can survive. These changes don't happen quickly or during one individual's lifespan; they take a very long time over many generations. Animals can adapt to their environments in two ways. Behavioral adaptations are things animals do to survive. A structural adaptation involves some part of the animal's body. In this lesson, students will be focusing on structural adaptations.

Discussion Questions

Cover

- What kind of animals do you see on the cover? Let students know that the green toad is named Cecil and the worm is named Jeremy. They will find out about the third creature later in the story.
- What do you think a terrarium is? A glass container for keeping small animals and plants.

Page 6

What is a bird of prey? A bird that eats other animals. Birds of prey are also called raptors. Explain to students that a toad like Cecil would usually be prey for the hawk, but in the first story, Cecil and the hawk worked together to save the pond and are now friends.

Page 8

- Ask students if they know what endangered species are. A type of plant or animal that has so few individuals left that the species is at serious risk of becoming extinct. Explain that in the first story, Cecil's friend RayRay the salamander found out that he is a member of an endangered species.
- Cecil mentions that neither he nor Jeremy can swim. What other animals can't swim?
- What animals can swim?
- Why do you think some animals can swim and some can't?



Page 11

Why do you think being a litterbug is a bad idea?

Page 18

 Mr. Patterson says, "Since a terrarium is a dry climate, it's perfect for a toad. But not for a frog. ... frogs need more water." What is climate? The weather and temperature in a particular area.

Why do you think frogs and toads need different climates? Frogs have skin that must be kept moist; toads have drier skin and can survive with less moisture.

Page 25

- Based on this single illustration, what type of animal do you think is in the terrarium with Cecil?
- List your evidence.



Page 26

What is happening with Nesbit in the last panel? Explain that Nesbit is a chameleon. Chameleons can change the colors and patterns of their scales.

Page 31

- Do you think a hamster could really fly a remotecontrol helicopter?
- List reasons why or why not.

Page 32

- What is a mammal? A warm-blooded vertebrate [has a spine] animal with hair or fur that has live young.
- What are some other types of animals that you know? (e.g., reptiles, amphibians, birds, insects, fish, etc.)
- Is a hamster a natural part of the pond habitat? No; it is a domesticated animal that people keep as a pet.
- How do you think Jeff ended up at the pond? He probably escaped from a house nearby.

Discussion Questions Continued

Page 38

- What is depth perception? The ability to see in three dimensions and to tell how far away things are.
- Why might a chameleon's depth perception be poor? Eyes need to work together to perceive depth and a chameleon's eyes work independently.
- Have students cover one eye and see if their depth perception changes.



Page 41

- What does "five-day life span" mean? Five days is the expected or average amount of time an adult fly will be alive.
- Does every individual of a species live to its expected life span exactly? No; it is an average. Some individuals will have longer or shorter lives.
- Here are the average life spans of some other animals in this book:
 - Hamster, 4 years (in captivity)
 - Earthworm, 2-5 years
 - American toad, 5-10 years
 - Chameleon, 2–3 years in the wild, 3–10 years in captivity
 - Red-tailed hawk, 10-15 years
 - American human, 78 years
- What are some factors that might affect the life span of an animal? e.g., predators; disease; environmental changes like droughts, floods, fires, pollution, etc.
- Why do you think a chameleon's lifespan is longer in captivity than in the wild?

Page 45

- What does Cecil mean when he says he is "free from predators"?
- Why is this a good thing for Cecil? No one will try to eat him!

Page 46

- What is a controlled environment? Explain to students that a habitat is the area where an animal lives. Each animal has specific habitat needs, such as food, water, soil, temperature, and shelter from predators. A controlled environment is a habitat, such as a terrarium, aquarium, or zoo, where humans control all these factors.
- What are some of the differences between the controlled environment of the terrarium and Cecil's natural habitat in the pond?
- * Find text evidence to support your answers.

Page 60

- What does Cecil do to try to make Nesbit leave him alone? He emits a terrible smell.
- Why do you think he has this ability? How does it help him? It is a form of self-defense; predators may not want to eat him if he smells bad.

Page 63

Why is Amelia concerned about taking Nesbit the chameleon to the pond with Cecil? Nesbit was raised in captivity; she is afraid he won't be able to survive in the wild.

Page 71

Is the birdhouse a controlled environment or natural habitat?Why do you think so?



Discussion Questions Continued

Page 89

- Do you think chameleons can live in the wild?
- What problems do you think Nesbit might have living in the wild? Finding food, hiding from predators, finding shelter, etc.

Page 95

How does each animal's body shape and features help it move in a specific way? Jeff the hamster walks on his legs; Jeremy the worm has no arms or legs so he slithers; Sprout the frog hops with his long, powerful legs; Nesbit the chameleon walks slowly because his feet are made for grasping branches.

Page 102

Would you do the same thing and return Cecil to the pond?

Why or why not?

Page 110

 What is an epilogue? An epilogue is an extra part after the end of the story to explain and wrap up.

Page 113

- What do you think the symbols in the snake's speech balloons mean?
- Symbols that show what a character is thinking or feeling are called *emanata*. The question mark and exclamation point show that the snake is confused and surprised. The dark, scribbly cloud shows that he is angry or upset.
- What other common emanata can you think of? Examples: a light bulb shows a character having an idea; a twirly line and stars show that someone is dizzy or hit his or her head.
- **9.** Point out that Nesbit is a chameleon that lives in a controlled environment, but wild chameleons live in natural environments. Ask students what kind of natural environment they think chameleons live in. Ask students to provide evidence for their ideas.
- **10.** On chart paper, a whiteboard, or other display, create a three-column chart titled *Nesbit the Chameleon* and write the headings *Structural Adaptation, What Is It For*?, and *Clues About Environment*, as seen below. Have students search the book for text evidence of Nesbit's structural adaptations, or physical features, that make him unique. Tell students to review each of Nesbit's appearances in the story, as well as the "More to Explore" pages at the end of the book. Record each of Nesbit's structural adaptations in the first column.

Structural Adaptation	What Is It For?	Clues About Environment	
Catches flies with his long, sticky tongue	Getting and eating food	There are insects.	
Can change the color and pattern of his scales	Camouflage or warning to predators Lots of varied colors and patterns		
No sense of smell	Can eat smelly food? Uses vision to catch prey	Prey that the chameleon can see, not smell	
Grasping feet and tail	Moves on branches Lots of branches		
Ectothermic	Needs to be in a warm place	Warm climate	
Eyes move independently	Can see things moving; bad depth perception	Prey that move	

NESBIT THE CHAMELEON



11. Review each of Nesbit's structural adaptations with students and discuss what the purposes of each might be. For example, his long, sticky tongue is for catching the insects that he eats. His ability to change the color and pattern of his scales might help him blend in to his surroundings (camouflage) to hide from both predators and prey or he might use bright colors to warn predators away. Record students' ideas about the purposes of each structural adaptation in the second column.



- **12.** Ask students to think about each adaptation and what it might be for, and make predictions about the chameleon's natural habitat. For example, a chameleon's feet and tail are great for grasping and moving on branches, so they probably live in trees or bushes. And they are ectothermic, so they have to live where it's warm. Record students' predictions about a chameleon's natural habitat in the third column.
- **13.** As a class, create a description of the most likely natural chameleon habitat. Point out that this is also a description of what a controlled environment for a pet chameleon would need to include.
- **14.** With students, do some quick Internet research on chameleons and add any new information about structural adaptations and habitat to the class chart. Here are some links:

- http://www.factzoo.com/reptiles/lizards/ chameleons.html
- http://www.kids.nationalgeographic.com/ animals/chameleon/
- http://www.bioexpedition.com/chameleon/
- **15.** Have students analyze the accuracy of their original description of a natural chameleon habitat.
 - * What was missing?
 - * What did they learn that was unexpected?
- **16.** Tell students that they will each choose an animal, research its structural adaptations and natural habitat, and create a visual presentation about what he or she learned. Distribute copies of the *Structural Adaptations Project* assignment sheet and review the assignment. Be sure that students understand that their presentations must use both images and text to show the animals' structural adaptations and how they help them survive in their natural habitats. If you will be using the assessment rubric, share it with students at this time so they know what is expected.



 Have each student present his or her project to the class. Use the rubric below for assessment.

Assessment

Use the following rubric to assess each student's learning as shown in his or her presentation. If you will be using this rubric to assess students, be sure to share it with them at the beginning of the assignment so they will understand what is expected.

Criteria	Project includes pictures and text information about the animal's structural adaptations.	Project explains how the animal's structural adaptations help it survive in its natural habitat.	Images and text are readable and communicate information clearly.
3 Points	Includes pictures and text information about all of the animal's structural adaptations.	Explains all structural adaptations thoroughly.	Project is well designed and communicates clearly.
2 Points	Includes pictures and text information about some of the animal's structural adaptations. Includes pictures and text information about some of the animal's structural adaptations.	Explains most structural adaptations.	Project is legible and communicates clearly.
1 Points	Includes pictures and text information about few of the animal's structural adaptations.	Explains few structural adaptations.	Project is mostly legible and communicates some information.
0 Points	Does not include pictures or text information about the animal's structural adaptations.	Does not explain structural adaptations.	Project is illegible and/or does not communicate information.

DIFFERENTIATION AND EXTENDED LEARNING ACTIVITIES

CREATE A CONTROLLED ENVIRONMENT

Have each student draw and label a controlled environment for the animal on which he or she did a project. Remind students that their controlled environments must meet all of their animals' survival needs.

DIFFERENT STROKES FOR DIFFERENT FOLKS

Divide students into groups and have each group research a particular habitat and all of the animals that live there. Have each group share how each animal has adapted differently to the same habitat.

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HUMAN ZOO

Challenge students to list their own survival needs and draw or write about a controlled environment that they could live in for at least a month. You can have them do this from a scientific standpoint—including needs for food, shelter, etc.—or you could make this a creative assignment and encourage students to include wants as well as needs—such as their favorite books, sports, games, etc.



Structural Adaptations Project

Directions: Choose one specific animal that you find interesting. Research the structural adaptations that help the animal survive in its natural habitat. On a separate sheet of paper, answer the questions on the right. Then, choose one of the presentation formats at the bottom of the page and create a project to show what you have learned. Your project must use both images (pictures or drawings) and text (words) to show your animal's structural adaptations and explain how they help it survive in its natural habitat.

What is the name of the animal species and where does it live? What structural adaptations help it find and consume food?

Questions

- What structural adaptations help it move efficiently around its habitat?
- 4. What structural adaptations help it survive the weather and temperature of its habitat?
- 5. What structural adaptations help it evade or survive attack by predators (if any)?

Presentation Formats

- Advertisement: Create an ad (print or video) for your animal highlighting its structural adaptations.
- Infographic: Use an online infographic creator like Piktochart, Easel.ly, or Infogr.am to put facts and images together in a graphic display.
- Slideshow: Use a program like PowerPoint, Glogster, or Prezi to create an informative presentation about your animal.
- Comic: Create a comic about your animal's structural adaptations. You can use the "More to Explore" pages at the back of *Stinky Cecil in Terrarium Terror* as a model.
- Video: Create a video about your animal's structural adaptations. It can be animated (try Animoto online) or live action. Be sure to write a script or create storyboards before shooting!
- Skit or play: Write a script to explain your animal's structural adaptations. Create costumes and props. Enlist some of your friends as actors.

