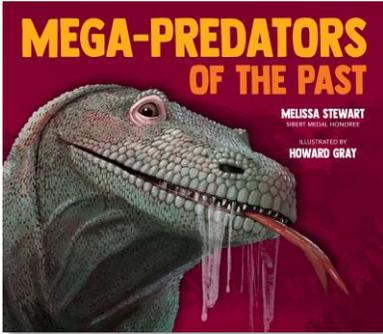# PEACHTREE
EDUCATOR'S GUIDE

Mega-Predators of the Past

Written by Melissa Stewart | Illustrated by Howard Gray

HC: 978-1-68263-109-6
eBook: 978-1-68263-478-3

Ages 6–9

ABOUT THE BOOK

It's time for dinosaurs to step aside and let prehistoric mega-predators like the terror bird and giant ripper lizard take the spotlight! Travel back in time to meet some of the little-known hefty hunters that once populated our planet. Discover how they lived, what they ate, and what they have in common with animals we still see today. Young readers will appreciate the humorous voice of the fact-tastic text as well as the dynamic browsable design and art that's both playful and scientifically accurate. Mega fact files, infographics, and rich back matter provide a plethora of additional details.

THEMES

Animal diets | Prehistoric life
Comparing prehistoric and modern animals
Animal survival strategies | Arthropods, birds, fish, reptiles, mammals

BEFORE YOU READ

- Invite children to share what they think the book will be about. What do they think a mega-predator is?

- What kind of animal do they think is shown on the cover? Have they ever seen an animal like it in real life? Do they think the animal might live in a different part of the world? Do they think the animal is still alive today?

AS YOU READ

After reading the first double-page spread of *Mega-Predators of the Past*, ask the class if they've ever seen an animal like the giant ripper lizard before. When students realize it's the same creature on the cover of the book, ask them why they think the illustrator is focusing so much attention on this mega-predator. Can they think of what some more familiar mega-predators might be?

When you've finished reading the main text on the scorpion spread, begin a three-column data table with the headings "Mega-Predator," "Prey," and "Body Features Used to Catch Prey," and fill in the appropriate information as seen on the next page. As you continue reading the rest of the book, you'll add relevant information for each mega-predator.

After pointing out the mega fact file on the scorpion spread, turn to the dragonfly spread and draw your class's attention to the animal comparison box and the colored caption box. Tell students that during the whole-class read aloud, you will read just the main text on each left-hand page and then share key hunting-related details from the caption, so you can add them to the data table. Assure students that they can explore the entire book on their own later.

After reading the terror bird spread, let the class know that, in a few cases, the text doesn't mention what kinds of animals the mega-predator ate or the body parts it used to catch prey. Tell them that you have that information and will add it to the data table as you go. (See blue text in the data table below.) After reading the blue whale spread, your table should look similar to this:

Mega-Predator	Prey	Body Parts Used to Catch Prey
	Insects, lizards	Strong pincers crushed prey, venom-filled stinger
Griffenfly	*Paleodictyopteroid*	Powerful wings, big eyes/excellent vision, spiny legs, strong jaws
Terror bird	*Protypotherium*	Long, strong legs built to run; hooked beak
Short-faced bear	*Hipparion*	Long legs to chase prey, excellent vision and sense of smell, bone-crushing teeth
American lion	Bison, horses, camels, deer, young mammoths	Sharp teeth and claws, long legs ran fast
Archelon	Fish, sea jellies, squid	Paddle-like legs, powerful jaws
Sanders seabird	Fish, squid	Bony tooth-like spikes
Ripper lizard	Wombat	Tongue sensed prey, venomous saliva
Deinosuchus	Fish, large turtles, dinosaurs	Huge teeth crunched bones
Titanoboa	Large fish, small crocodiles	Long, smooth body silently slipped through water
Megalodon	Whale, dolphin, giant turtle	Big teeth
Blue whale	Krill	Tongue, baleen

AFTER YOU READ
Grades K–2

Divide the class into seven small groups for an activity that supports Next Generation Science Standard Performance Expectation 1-LS1-1. Begin by giving each team an index card with the following mega-predator names.

Team 1: Giant scorpion, ripper lizard
Team 2: Griffenfly, *Archelon*
Team 3: Terror bird, American lion
Team 4: Sanders seabird, griffenfly
Team 5: Ripper lizard, blue whale
Team 6: Short-faced bear, griffenfly
Team 7: *Titanoboa*, *Archelon*

After the groups have had time to use the information in the data table and the images in the book to determine one way the two mega-predators on their card are different and one body part the animals have in common, show your class that you have a card too. It says, "*Megalodon, Deinosuchus*."

Ask the students to help you complete the following fill-in-the blank sentences.

I am a _____.
One mega-predator I really admire is the
_____.
One way we are different is _____.
One body part we have in common is _____.
This similarity helps us survive because _____.

The result might look like this:

I am a <u>Megalodon</u>.
One mega-predator I really admire is the <u>Deinosuchus</u>.
One way we are different is <u>I don't eat dinosaurs</u>.
One body part we have in common is <u>big teeth</u>.
This similarity helps us survive because <u>our teeth help us catch and eat prey</u>.

Now give each child a reproducible with the same fill-in-the blank sentences and invite teammates to work together to complete the worksheet. If students have time, they may wish to draw pictures of the two mega-predators they're comparing.

After the teams have had a chance to share their work with the rest of the class, ask the students: What do mega-predators need to survive? Explain your rationale. Encourage a variety of responses, but make sure they eventually realize that all mega-predators need body parts that help them catch prey. If this idea does not occur to the students, encourage each team to read the last line of their fill-in-the-blank worksheet aloud and ask what all their responses have in common.

Grades 3–5

Divide the class into pairs and invite each team to choose one of the following activities, which support Next Generation Science Standard Performance Expectation 4-LS1-1.

A. The terror bird and Sanders seabird are both birds, but they lived in different times and in different parts of the world with different environments. Using information in the data table and the words and images on the two animal spreads in *Mega-Predators of the Past*, Partner A should pretend to be a Sanders seabird and write a postcard to a terror bird explaining how its body structures help it live and grow in its environment. Partner B should pretend to be a terror bird and write the same kind of postcard to a Sanders seabird. When students finish writing, they can turn their paper over and draw an image of their animal on the other side. Give students time to share their postcards with the class.

B. After giving the teams time to review one or more books in the *Who Would Win* series by Jerry Pallotta, let students know that short-faced bears and American lions lived at the same time and, sometimes, in the same environment. Encourage partners to use information in the data table and the words and images on the two animal spreads in *Mega-Predators of the Past* to write their own *Who Would Win* books comparing the two animals' sizes, weights, body structures, and behaviors. Give students time to illustrate their books and share them with the class.

ADDITIONAL ACTIVITIES
Grades K–2

- After reading *Mega-Predators of the Past* and *Apex Predators: The World's Deadliest Predators, Past and Present* by Steve Jenkins, divide your class into small groups and encourage students to compare the two books. How are they similar? How are they different? Which book do they like better? Why?

- As the group discussions wind down, give each child a piece of drawing paper and encourage students to use words and pictures to explain either two ways the books are similar or two ways the books are different.

- Ask students to choose a mega-predator they would like to be for a day from *Mega-Predators of the Past.* Invite a few volunteers to act out how their mega-predator uses its body parts to hunt for prey. Encourage the rest of the class to guess which mega-predator the volunteers selected.
Give each child an index card and ask them to draw a picture of their mega-predator on the blank side and write one reason why they'd like to be that animal on the lined-side of the card.
As students finish this task, collect their cards and work with them to create a whole-class bar graph made of all the index cards. Which mega-predator did the most children choose? Do students see any trends in their preferences?

- Using the information below, students can work in groups to create a bar graph that compares mega-predator sizes. Help students identify each animal as a mammal, reptile, bird, or fish. Do students see a connection between which group a mega-predator belongs to and its size?

  > Terror bird: 10 feet
  > Short-faced bear: 11 feet
  > American lion: 11 feet
  > *Archelon*: 13 feet
  > Sanders seabird: 24 feet
  > Giant ripper lizard: 26 feet
  > *Deinosuchus*: 36 feet
  > *Titanoboa:* 43 feet
  > *Megalodon:* 59 feet
  > Blue whale: Up to 110 feet

  Invite students to choose three mega-predators from the list above and draw them to scale, as shown in the back matter of *Mega-Predators of the Past*. They can also color the animals using the art in the book as a guide.

Grades 3–5

- Invite students to read *Apex Predators: The World's Deadliest Predators, Past and Present* by Steve Jenkins and use the Nonfiction Smackdown worksheet at the end of this guide to compare it to *Mega-Predators of the Past.*

  Divide the class into two groups and have each team create a Book Fact Scavenger Hunt for the other team. Students should look through *Mega-Predators of the Past* and *Apex Predators: The World's Deadliest Predators, Past and Present* by Steve Jenkins. Each team should choose a few interesting facts and turn them into questions. Here are some examples:

  o According to *Mega-Predators of the Past* by Melissa Stewart, how much did *Archelon* weigh?

  o According to *Apex Predators: The World's Deadliest Predators, Past and Present* by Steve Jenkins, what do African wild dogs hunt?

  Type each team's questions, print them out, and cut them up so each question is on a separate strip of paper. Place the questions in two bags or boxes so the students can pick one question at a time and compete to see which team can answer the most questions.

- Divide the class into small groups and encourage the teams to think carefully about the craft moves Melissa Stewart used as she wrote *Mega-Predators of the Past*. The following questions can help them in this process:

  o Does this book have a narrative or expository writing style? Explain your rationale.

  o What is the book's nonfiction text structure?

  o Can you think of any rationale for the order of the animal examples in the book?

  o Why do you think the book presents information in five different ways—main text, main illustration, a comparison box, a caption box, and a mega fact file? What is the purpose of each text type? Why do most spreads have two kinds of art—a main illustration and comparison figures?

  o The main text has many examples of alliteration and onomatopoeia. It also includes a lot of questions and sentence fragments. Why do you think the author has used these language devices?

  o How would you describe the voice of the main text? Does the caption text have the same voice?

  o Does the voice of the main text match the style of Howard Gray's art? Explain your rationale.

  o Re-read the first and last pages of the book. How is the beginning and ending of the book similar to the first and last paragraphs of a five-paragraph essay?

  o Can you think of a different way to end the book?

- To introduce students to the use of point of view in nonfiction writing, divide the class into six groups. Give each team a packet of sticky notes and one of the following books: *Mega-Predators of the Past* by Melissa Stewart; *Birds of a Feather: Bowerbirds and Me* by Susan L. Roth; *Swirl by Swirl: Spirals in Nature* by Joyce Sidman; *Bone by Bone: Comparing Animal Skeletons* by Sara Levine; *The Scraps Book: Notes from a Colorful Life* by Lois Ehlert; and *Born in the Wild: Baby Mammals and Their Parents* by Lita Judge.

  Invite each group to read its book and discuss who the narrator is and who, if anyone, the narrator is addressing. When teammates come to a consensus, one member should write the group's ideas on a sticky note and attach it to the book.

  When the class seems ready, encourage each group to rotate to a different table, leaving its book behind. Students should read the book at their new table and discuss how the previous group classified it. If they agree, they should add a second sticky note with an example to support the previous group's ideas. If they disagree, they should add a second sticky note explaining their rationale. Repeat this process until each group has reviewed all the books.

  Next, introduce and explain the terms *first-person narration*, *second-person narration*, and *third-person narration* to your class and encourage

students to share their ideas about how each of the six books should be classified. During this discussion, classmates should feel free to respectfully disagree, ask questions, and offer their own insights. To facilitate the conversation and promote full-class engagement, help students stay focused on the topic. Restate any unclear comments or ideas and encourage students to give one another the time they need to formulate and express their ideas and rationale.

[Answers: First person—*Birds of a Feather: Bowerbirds and Me* by Susan L. Roth, *The Scraps Book: Notes from a Colorful Life* by Lois Ehlert. Second person—*Mega-Predators of the Past* by Melissa Stewart, *Bone by Bone: Comparing Animal Skeletons* by Sara Levine. Third person—*Swirl by Swirl: Spirals in Nature* by Joyce Sidman, *Born in the Wild: Baby Mammals and Their Parents* by Lita Judge.]

- So that students can see for themselves how big the animals featured in *Mega-Predators of the Past* really were, grab a box of colored chalk and some tape measures, and head out to the school playground.

  Divide the class into small groups, assign each team one of the mega-predators, and give them a piece of chalk. Students should make a chalk mark on the pavement, and then, using the tape measure as a guide, walk a distance equal to the mega-predator size listed in its mega fact file.

  After making a second chalk mark on the ground, students should examine the mega-predator drawing in the "Comparing Mega-Predators by Size" infographic at the back of the book and use it as a guide as they make a chalk outline of the rest of the animal's body. Are they surprised by the mega-predator's total size? When the outlines are complete, give students an opportunity to walk around and see the other groups' mega-predator outlines.

- After dividing the class into small groups, invite students to use information in the mega fact files to create a timeline showing when all the mega-predators in Mega-Predators of the Past lived. If students struggle with this task because the giant

scorpion and griffenfly lived so much further in the past than the other creatures, let them know that timelines sometimes include gaps to indicate that a long period of time has been left out. You can find examples of this type of timeline by doing an Internet search for "prehistoric timeline with time gap."

- Invite students to spend some time looking closely at the comparison boxes in *Mega-Predators of the Past*. Then ask the following questions:
  o Can you think of any reasons why the mega-predators are larger than similar animals alive today?
  o Why do you think all the mega-predators, except blue whales, are now extinct?

  After recording their responses on chart paper, divide the class into small groups. Encourage each team to choose a mega-predator and do some research to uncover scientists' theories. Why do they think there are no clear answers to these questions?

  Next, ask students to read the author and illustrator notes in the back matter of *Mega-Predators of the Past*. Are they surprised that some of the information in the words and pictures of this book and every other book about prehistoric creatures is based on estimates, educated guesses, and unproven theories?

All Grades

Invite your students to look carefully at the artwork throughout *Mega-Predators of the Past*. As a class, list all the questions the book's illustrator, Howard Gray, had to ask himself and then research to make the art accurate. Possible questions include: What kind of environment does the mega-predator live in? What plants grow in its habitat? What does the mega-predator eat? What time of day is it? What time of year is it?

Using their list of questions, students can do some research as a class (younger students) or in small groups (older students) and then create a mural that depicts the natural habitat of one of the mega-predator's modern relatives.

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Peachtree Educator's Guide
prepared by Melissa Stewart

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404-876-8761 • 800-241-0113
www.PeachtreeBooks.com

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ABOUT THE AUTHOR

Melissa Stewart is the award-winning author of more than 190 science books for children, among them P*ipsqueaks, Slow-pokes, and Stinkers: Celebrating Animal Underdogs* and the acclaimed *A Place for . . .* series. Melissa, a Sibert Medal Honoree, has always been fascinated by the natural world and is passionate about sharing its wonder with readers of all ages. While gathering information for this book, she visited museums in the western United States, Canada, and Europe and interviewed scientists from around the world. Melissa lives in eastern Massachusetts.

Melissa-Stewart.com

ABOUT THE ILLUSTRATOR

Howard Gray was captivated by animals and nature, a fascination probably fueled by living in some interesting parts of the world as work took his parents from place to place. He holds a BSc in zoology and a PhD in Arabian bottlenose dolphin genetics. Howard has returned to his dream career: children's book illustration. He lives in England.

Name: _____   Date: _____

Nonfiction Smackdown!
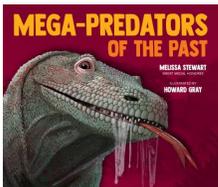## Evaluating & Comparing Two Books

Your mission is to read TWO different nonfiction books on the exact same topic and decide which one is best.

- My books are about _____ .

Use the table below to compare your books.

Put a checkmark under the book that:	Book 1 Author and Title:	Book 2 Author and Title:
Has the most information about the topic		
Is easiest to understand		
Is the most interesting		
Has the best illustrations (photos, drawings, graphs, diagrams, maps)		
Has the most helpful text features (table of contents, glossary, headings)		

Now go back and circle the title of the best book on your topic. Then write a couple of sentences below that describe how you would classify it and explain why you'd recommend this book to someone who wants to know about the topic:

_____

_____

_____

_____

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Mega-Predators of the Past
By Melissa Stewart; Illustrated by Howard Gray