Ask® Teacher Guide: October 2017

What Makes a Monster?

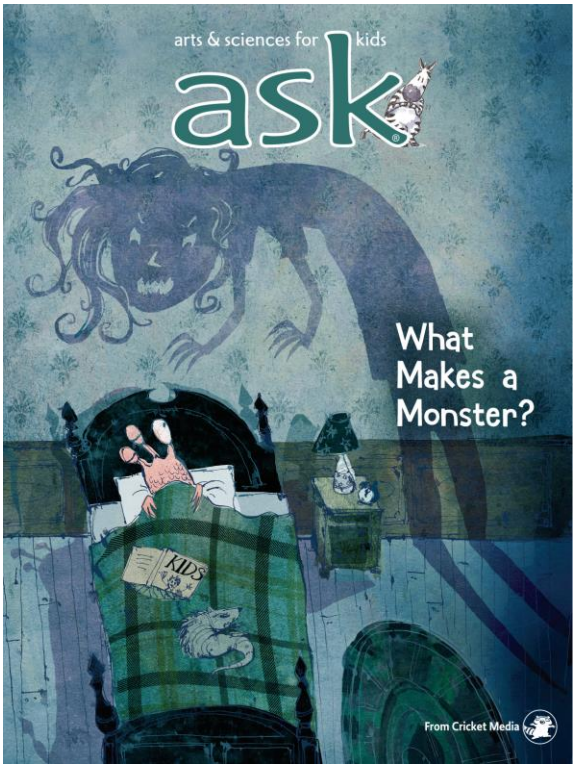
Creatures lure us with their strange and fearsome ways. Find out how scientists uncover the true identity of monsters of the past and present.

CONVERSATION QUESTION

How does science influence how we think about "monsters"?

TEACHING OBJECTIVES

- **Students will learn about animal traits**
- **Students will learn how scientists study animal mysteries**
- **Students will engage in argument from evidence**
- **Students will obtain and evaluate information**
- **Students will support claims, using valid reasoning and evidence**
- **Students will conduct short research projects**
- **Students will write narratives to develop real or imagined experiences or events**



In addition to supplemental materials focused on core STEM skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

SELECTIONS

- **Something Out There**
Expository Nonfiction, ~850L
- **Sea Monsters in Kansas**
Expository Nonfiction, ~950L
- **Shark!?**
Expository Nonfiction, ~850L

Ask® Teacher Guide: October 2017

Something Out There

pp. 6–11, Expository Nonfiction

Scientists use evidence to answer questions about mysterious animals considered "monsters." Use this article to help students understand how science is used to study the unknown**.**

Lexile Score: ~850L

RESOURCES

- Using Evidence: Mountain Gorilla Organizer
- Using Evidence: Bigfoot Organizer

OBJECTIVES

- Students will read and analyze a nonfiction science article
- Students will engage in argument from evidence
- Students will support claims, using valid reasoning and evidence

KEY VOCABULARY

- ***primate* (p. 6)** a member of the group of mammals that includes humans, monkeys, and apes
- ***evidence* (p. 8)** information that supports a claim
- **specimen (p. 8)** an example of something studied
- **hoax (p. 11)** an act that is meant to trick or deceive people

ENGAGE

Conversation Question: How does science influence how we think about "monsters"?

Ask students to share what they know about Bigfoot and make a list of their ideas about this "monster." Next, ask how they would go about proving that Bigfoot does or does not exist. Ask them to think about how science would be used in their investigation.

INTRODUCE VOCABULARY

Review the vocabulary words and their meanings. Ask students to think about how the words might be related in the context of scientists studying "monsters." Have students craft sentences that use two or more vocabulary words. Tell students to work in small groups to share their sentences and ask each other questions to ensure each sentence makes sense.

READ & DISCUSS

In the case of both the mountain gorilla and Bigfoot, scientists use evidence to support their reasoning about the existence of these animals. Guide students to think about the type of evidence that is important to solve these mysteries.

- What kind of evidence did the scientists use to answer questions about these "monsters"?
- How do scientists know if the evidence is reliable?
- How might new evidence change what is believed?

SKILL FOCUS: Using Evidence

INSTRUCT: Tell students to choose either the case of the mountain gorilla or Bigfoot as a focus for this activity. Students read the article closely to find and record the different types of evidence the scientists used to support their reasoning. Students should record evidence in the corresponding *Using Evidence* graphic organizer.

ASSESS: Use the graphic organizer to assess if students correctly recorded evidence and explained how evidence helps the scientists determine the identity of the mysterious monster.

EXTEND

Language Arts/Writing Have students use the same science reasoning in the article to describe how they would go about proving or disproving the existence of the Loch Ness Monster. Direct students to the article "How Do We Know It's True?" on page 8 and tell them to use it as a guide to decide what evidence they would need to collect to support their claim.

Using Evidence: Mountain Gorilla

Read the article and record the evidence about the mysterious primate sent to Paul Matschie. A sample chart entry is shown.

Page	Evidence	What It Shows
7	Skeleton did not include a tail.	The animal is not a monkey.

How did the evidence help the scientist determine the identity of the mysterious monster?

Using Evidence: Bigfoot

What evidence did Dr. Smith use to determine that Bigfoot was most likely a bear? Record the evidence used in the chart below. A sample entry is shown below.

Page	Evidence	What It Shows
10	The animal walked on two legs.	Bears can walk on two legs.

How did the evidence help the scientist determine the identity of the mysterious monster?

Ask® Teacher Guide: October 2017

Sea Monsters in Kansas

pp. 16–21, Expository Nonfiction

Find out what is known about the fearsome reptiles that ruled the ancient seas. Use this article to help students learn how scientists use fossils and animal behavior to study ancient marine reptiles.

Lexile Score: ~950L

RESOURCES

- Traits of Ancient Sea Reptiles Organizer

OBJECTIVES

- Students will read and analyze a nonfiction science article
- Students will obtain and evaluate information
- Students will conduct short research projects

KEY VOCABULARY

- ***reptiles* (p. 16)** cold-blooded animals that lay eggs and have bodies covered with scales or hard parts
- ***realm* (p. 16)** an area ruled by someone
- ***massive* (p. 18)** very large
- **fossil (p. 18)** a trace or print or the remains of a plant or animal of a past age preserved in earth or rock
- **ferocious (p. 21)** fierce or violent

ENGAGE

Conversation Question: How does science influence how we think about "monsters"?

Review the illustrations in the article and ask students to describe how these animals look. Explain that these animals have never been seen but scientists learn about them from their fossil remains. Ask students to decide if these animals should be considered monsters as they read the article.

INTRODUCE VOCABULARY

Review the vocabulary words and ask for volunteers to explain their meanings. Clear up any confusion. Next, display the sentences that contain the vocabulary words, leaving blanks where these words go. Have students fill in the blanks with the correct vocabulary words.

READ & DISCUSS

Read the article together, stopping to discuss the different traits of each animal and the evidence scientists used to determine these traits. Use the following prompts to help students evaluate the information:

- What kind of evidence did the scientists use to answer questions about these sea "monsters"?
- What makes these animals seem like monsters?
- How does studying live animals give scientist clues about how extinct reptiles might have lived?

SKILL FOCUS: Obtaining Information

INSTRUCT: Guide students to use the *Traits of Ancient Sea Reptiles* graphic organizer to help them collect and organize the information presented in the article about each creature's traits.

ASSESS: Use the graphic organizer to assess if students were able to locate and record notes from the article, including the correct animal names and traits, and how scientists determined these traits existed.

EXTEND

Language Arts Have students conduct a short research project to learn more about one of the ancient marine reptiles described in the article. Students should integrate information from the article and their own research to create a drawing of the reptile and label its important traits.

Traits of Ancient Sea Reptiles

Use this chart to organize information you find about the traits of the different ancient marine reptiles described in the article.

Reptile	Page	Trait	Source
mosasaur	17	Large head and jaws	Fossil of 6-foot-long skull

Ask® Teacher Guide: October 2017

Shark!?

pp. 24–26, Expository Nonfiction

Are sharks terrifying monsters or interesting predators? Use this article to help students see how science helps inform opinions.

Lexile Score: ~850L

RESOURCES

- Monster or Not? Organizer

OBJECTIVES

- Students will read and analyze a nonfiction science article
- Students will engage in argument from evidence
- Students will write narratives to develop real or imagined experiences or events

KEY VOCABULARY

- ***inspire* (p. 24)** to cause a feeling or emotion
- ***predator* (p. 25)** an animal that lives by killing and eating other animals
- **plankton (p. 25)** tiny organisms that live in bodies of water, including the oceans
- ***lurking* (p. 26)** waiting or moving in a secret way so as not to be seen

ENGAGE

Conversation Question: How does science influence how we think about "monsters"?

Ask students to share what they know about sharks and create a list of this information. Next, ask students to point out items on the list that might describe a monster. Have students consider whether they think of sharks as monsters. Finally, tell them to note whether their opinions change after reading the article.

INTRODUCE VOCABULARY

Review the vocabulary words and their meanings. Ask students to think about how each word might be related to sharks. Have students write and share sentences that use both a vocabulary word and the word *shark*.

READ & DISCUSS

Read the article together. Then use these questions to prompt discussion:

- What causes people to think of sharks as monsters?
- How can science change the way people view sharks?

SKILL FOCUS: Engaging in Argument from Evidence

INSTRUCT: Have students use the *Monster or Not?* graphic organizer to record information from the article that might cause people to view sharks either as monsters or just normal predators.

ASSESS: Have students use the information from the graphic organizer to write a paragraph that states their opinion about sharks, supported with evidence and examples.

EXTEND

Language Arts/Writing Have students use details from their graphic organizers to write a poem about sharks. Explain that poems may be serious or humorous and that they should describe the way sharks look, move, and behave. You might suggest students write from a shark's point of view.

Monster or Not? You Decide!

Part A: Locate and record evidence about sharks that supports each opinion.

Page	Sharks are terrifying monsters.	Page	Sharks are normal predators.
24	razor-sharp teeth	25	fish eaters

Part B: Do you think sharks should be considered monsters? Why or why not? Write a paragraph that states your opinion. Use information from the chart to support your opinion.