

# EDUCATOR'S ACTIVITY GUIDE



TRISTAN HUNT AND THE SEA GUARDIANS: BOOK TWO

## The Shark Rider

BY ELLEN PRAGER \*

ILLUSTRATED BY ANTONIO JAVIER CAPARO



After thwarting the dastardly plans of J.P. Rickerton, Tristan Hunt is having trouble keeping his newfound talents a secret. And if undercover spies and a mysterious illness threatening to expose the secrets of camp weren't enough, reports of dying fish and disappearing sponge in the Caribbean call Tristan and his friends back into action. Will the Sea Guardians discover the source of the problem before time runs out? Can they escape the threat of an oncoming storm? Or will a betrayal from one of their own ensure it's already too late?



### ABOUT THE AUTHOR

Dr. Ellen Prager is a marine scientist and author, formerly the chief scientist at the world's only undersea research station in the Florida Keys. With her ability to make science fun and understandable for people of all ages, she has built a national reputation as a spokesperson on earth and ocean science issues.

Dr. Prager has participated in research expeditions to locations such as the Galapagos Islands, Papua New Guinea, Fiji, and throughout the Caribbean. She now acts as the science advisor to the Celebrity Cruise ship *Xpedition* in the Galapagos. She lives in Tampa–St. Petersburg, Florida, where she spends her time writing, consulting, and spending as much time on and in the ocean as possible.

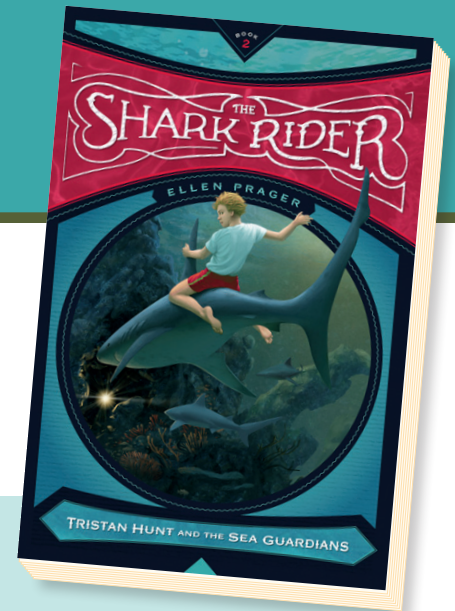
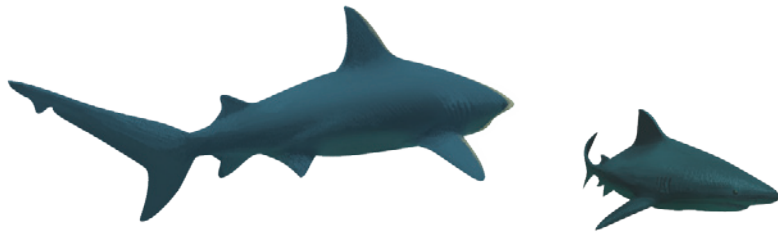


### ABOUT THE ILLUSTRATOR

Antonio Javier Caparo is a Cuban-born illustrator, graphic designer, and graphic novel artist. His realistic illustrations regularly appear in magazines and children's and young adult books along with corporate and advertising work in the United States and South America. Some of his passions include animation and comics. He has been published around the world and has won numerous awards in multiple countries.

Much of Caparo's early career was spent in graphic design, but he always felt a passion for other worlds, magical characters, and metaphorical stories. He decided to devote himself to illustration—both traditional and digital—creating each piece to be intense and conceptual. He is a graduate of the High Institute of Design in Havana and currently lives in Canada.

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## COMMON CORE STATE STANDARDS

The activities and discussion questions in this guide support the following Common Core State Standards.

CCSS.ELA-LITERACY. WHST.6-8.1.B	Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
CCSS.ELA- LITERACY.W.6.2.A	Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
CCSS.ELA- LITERACY.W.6.3	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
CCSS.ELA- LITERACY.W.6.8	Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.
CCSS.ELA- LITERACY.W.6.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
CCSS.ELA-LITERACY. RI.6.7	Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.
CCSS.ELA-LITERACY. RL.6.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
CCSS.ELA-LITERACY. RL.6.5	Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.



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## WORDS TO KNOW

**ciguatera poisoning** – an illness caused by eating fish that contain toxins produced by certain kinds of algae

**coral bleaching** – when, due to stress from changes in its environment (such as temperature or light changes), coral expels the algae living within its tissues, making the coral appear white

**current** – the movement of water in a river or ocean

**debris** – the scattered pieces of something that has been broken down or destroyed, such as plastic

**decontaminate** – to remove harmful substances from something or someone

**eddy** – a circular pattern of flow in water or air

**electrode** – a point where an electric current can flow into or out of a device or substance

**embayment** – a bay or an area resembling a bay

**frequency** – the number of cycles per time, such as with a sound or ocean wave

**herbivore** – an animal that eats plants rather than other animals

**invertebrate** – a creature that does not have a backbone, such as an octopus

**morality** – principles about what is right and wrong

**mortality** – death, especially on a mass scale

**mucus** – a slippery and sticky substance that is secreted from animals

**navigation** – the process of finding one's position and route

**neutrally buoyant** – when an object neither sinks nor rises in a liquid, but rather floats in one position

**nocturnal** – an animal that is active at night

**organism** – an animal, plant, or single-celled life form

**periscope** – a vertical tube that uses reflecting mirrors to allow a person to see something from a position far below

**pod** – a number of animals, such as dolphins, grouped together

**pollutant** – anything that pollutes or contaminates

**pollution** – a substance that damages or contaminates the air, water, or soil

**predator** – an animal that hunts and kills other animals

**prosthetic** – an artificial device that replaces a missing part of the body

**reconnoiter** – to go to a place to find out information about an enemy or place

**salinity** – the amount of salt in seawater

**stomatopod** – marine crustaceans with a segmented body, abdominal gills, and legs near its mouth, also known as mantis shrimp

**stranding** – when a marine animal has run aground and gets stuck

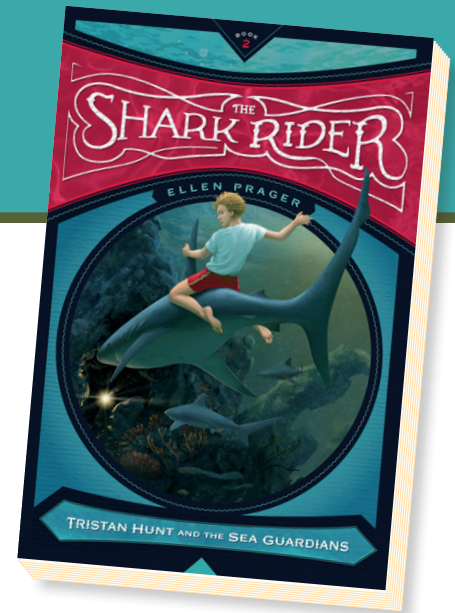
**submersible** – a small submarine

**toxin** – poison

**vulnerable** – something that is in a weak position and likely to be hurt or damaged



# EDUCATOR'S ACTIVITY GUIDE



## Write and Understand

Try these writing prompts to help students further understand and engage with the book.

### POLLUTION WATCH

At the beginning of the book, Tristan recalls a trip he and his class took to the beach. Their purpose was to collect and record the trash they found on the beach. Conduct your own research. Visit a beach or park area every day for a week. Record whether or not you find trash on the ground, the number of pieces found, and what was found. At the end of the week, answer this question: Does pollution affect the beach or park I studied? If so, what kind of pollution is found there? Find some online sources from reputable websites that support your opinion. Explain your opinion, using your data collected from the week and other research.

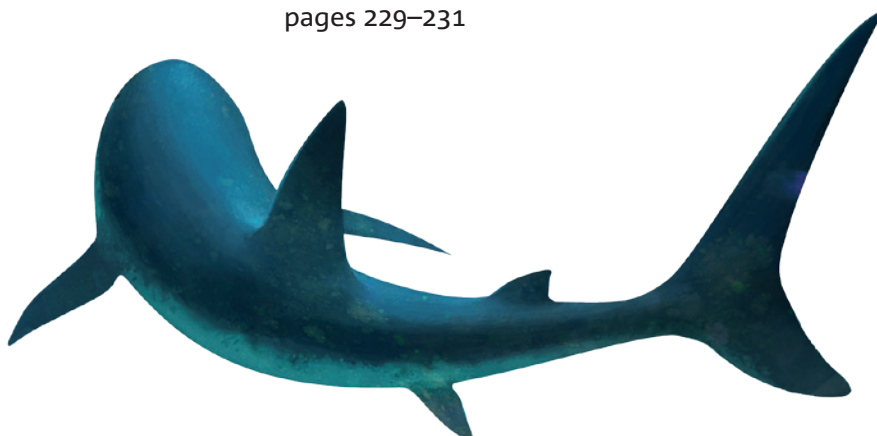
### PICK A SCENE

Choose a scene from the book. Examine how the scene fits into the book as a whole. What does it add to the story? How does it support the main theme of the book? Write a few paragraphs describing your thoughts. Below are some scene suggestions. Choose from these or pick your own. Make sure to include which scene you are referencing in your written piece.

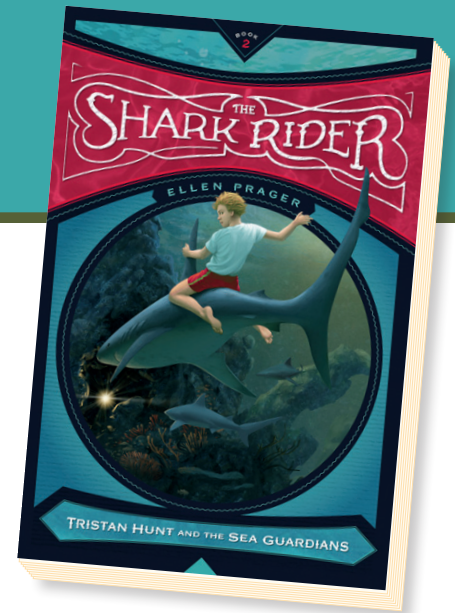
- › Exploring ocean current software: pages 93–95
- › Finding dead bodies: page 138
- › Analyzing the damage: pages 145–146
- › Trapped in boulders: pages 155–164
- › Stranded at sea: pages 180–188
- › Sending a message: pages 229–231

### RESEARCHING OCEAN POLLUTION

Use the Internet or library books to research ocean pollution further. Pick a topic to write about, such as its causes or the ways it harms marine life. Use several sources in your research. Then write about your topic, quoting text from your research or summarizing others' ideas on the topic. Make sure to list the sources of your quotes and write a bibliography of your sources.



# EDUCATOR'S ACTIVITY GUIDE



## THE FRIGATEBIRD'S MISSION

Read pages 232–233 of *The Shark Rider*. Next, imagine what the frigatebird has to go through to deliver the teens' message to the boat. Write a short story describing the bird's experiences from the bird's point of view. Be sure to include the development of the character of the bird and use descriptive details.

## TOP TEN FACTS

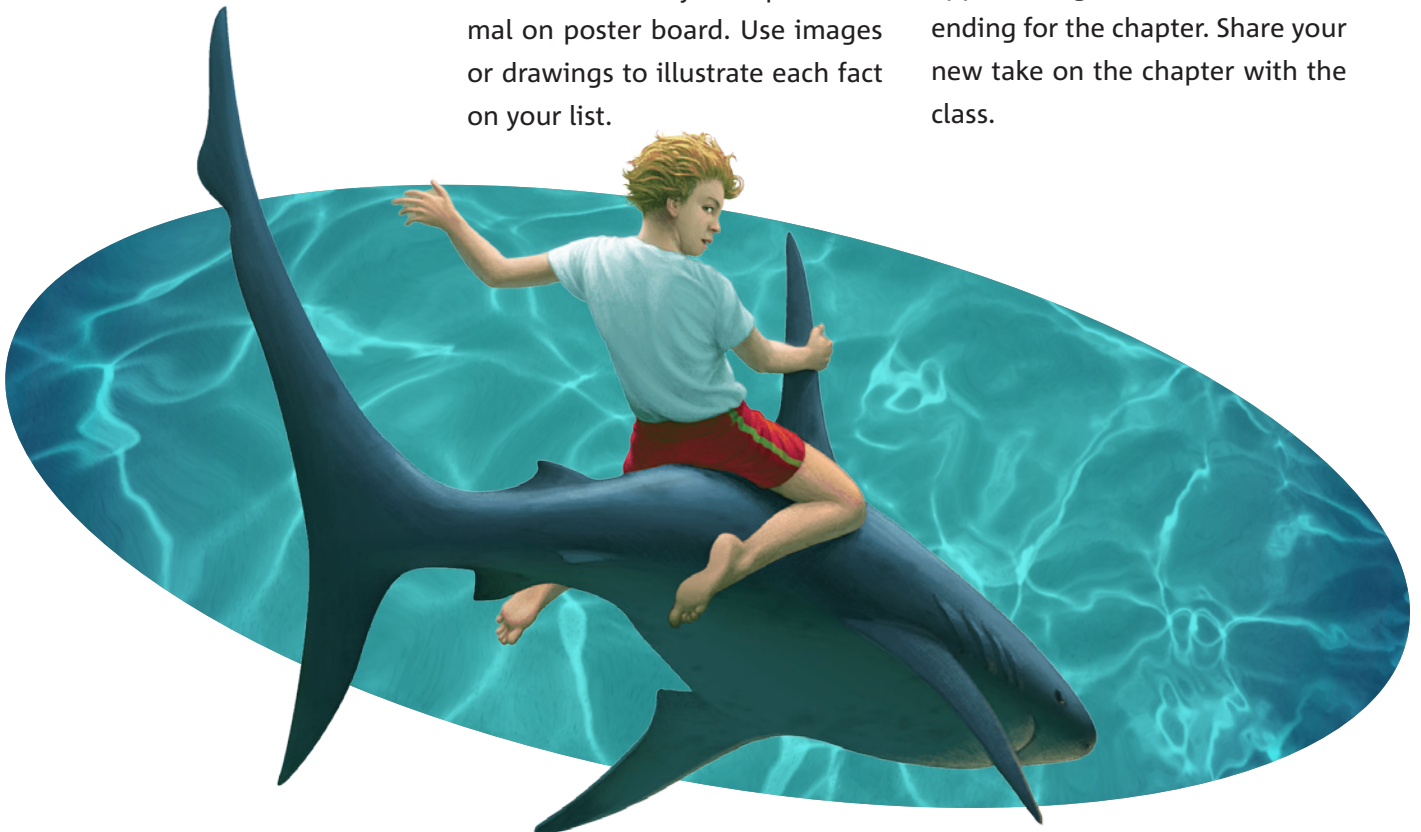
Research a topic or animal introduced in *The Shark Rider* on the Internet. Here are some topic and animal ideas:

- › Toxic algal blooms
- › Dolphin strandings
- › Plastic pollution in marine environments
- › Nocturnal marine life
- › Golden cownose ray
- › Blacktip shark
- › Mantis shrimp
- › Dolphin

Find ten fascinating facts about your topic or animal. Create a top ten fact list about your topic or animal on poster board. Use images or drawings to illustrate each fact on your list.

## ANOTHER TAKE

Read Chapter 15 from the book. Imagine that the rays had not shown up to help the teens, Coach, and Meg. How else might the group have escaped from the approaching boat? Write a new ending for the chapter. Share your new take on the chapter with the class.





## Primary Source: Dying Dolphins

Read this excerpt from this August 22, 2013, CNN article, “Dolphins Dying By the Dozens Along East Coast”:

*The carcasses of dozens of the marine mammals, seven times more than normal, have been washing up on beaches this summer, and scientists are struggling for answers to the die-off.*

*In Virginia alone, at least 164 dead dolphins have been found this year. . . . federal authorities have recorded 228 dolphin deaths this year from New York to Virginia. In all of 2012, 111 deaths were recorded.*

*The National Oceanic and Atmospheric Administration has issued an Unusual Mortality Event in response to the deaths. . . .*

*The current declaration for the mid-Atlantic bottlenose dolphins is one of 60 Unusual Mortality Events the agency has issued since . . . 1991. Causes, including infections, biotoxins, human intervention and malnutrition, have been determined for 29 of those cases.<sup>1</sup>*

Compare this primary source information with information about mass strandings on page 90 of the book:

*“How come they got stuck on the beach?”*

*“Wish we knew,” Doc Jordan answered. “Sometimes dolphins or whales beach themselves like this when they are sick or injured, and they are very social animals. If one member of the pod goes aground, then the others may follow it. Or sometimes there’s been activity nearby that uses sound on a frequency that injures the dolphins or disrupts their navigation system.”*

Compare the ideas presented in the primary source with those found in the book. How is the information similar? How is it different? Do you better understand why there are mass strandings of dolphins? Write down your thoughts and share with the class.

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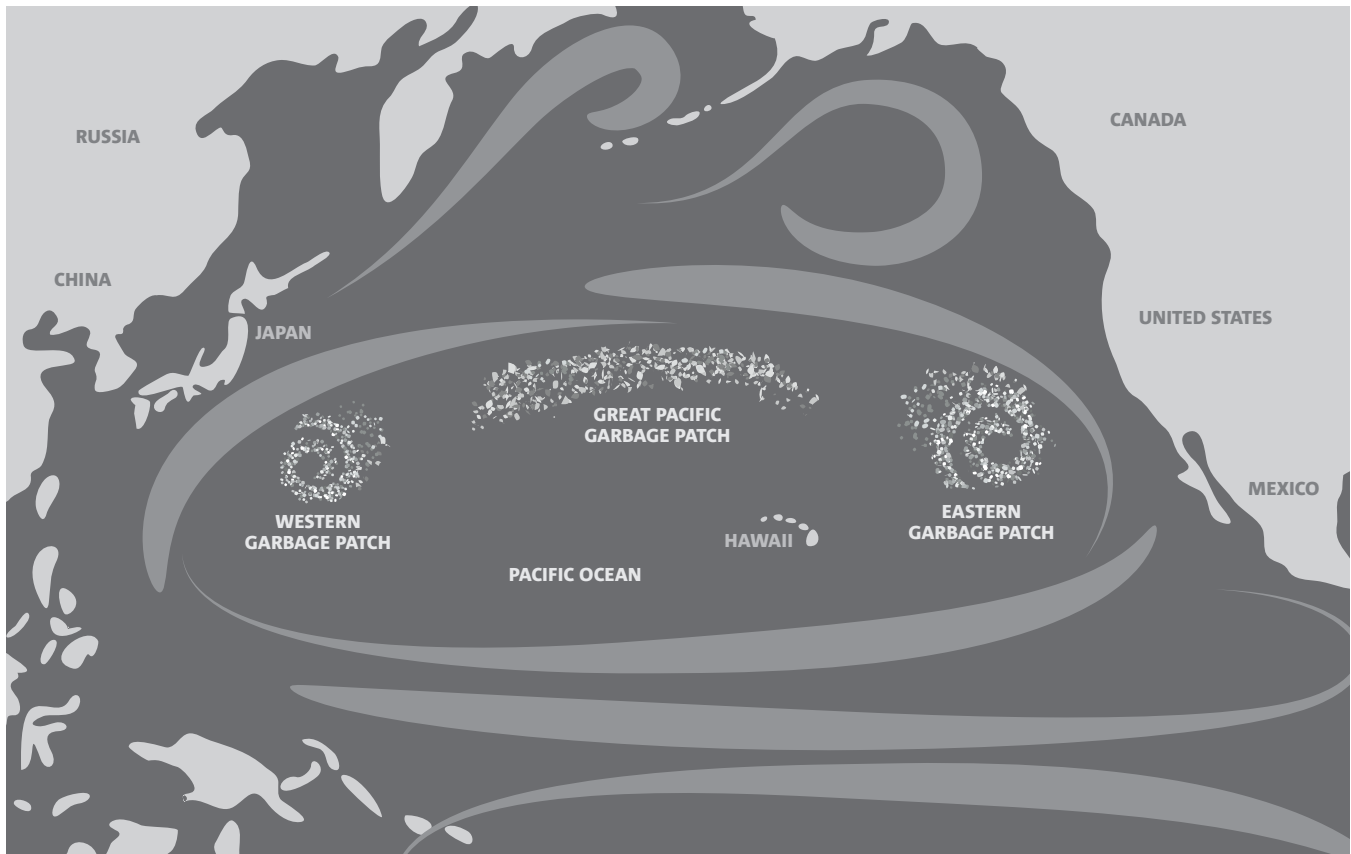
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<sup>1</sup> Brad Lendon, Brian Todd, and Dugald McConnell. “Dolphins Dying By the Dozens Along East Coast.” CNN. 22 Aug. 2013. Web. <http://www.cnn.com/2013/08/20/us/dolphins-dying/>



## Infographic: Great Pacific Garbage Patch



### MARINE DEBRIS

In the Pacific Ocean there is a large patch of marine debris. It is known as the Great Pacific Garbage Patch. Ocean currents trap the marine debris in two main collections. The Eastern Garbage Patch is located between the US West Coast and Hawaii. The Western Garbage Patch is located off the coast of Japan. The wide area that makes up the Great Pacific Garbage Patch has both large pieces of trash in it and lots of tiny pieces of plastic. The marine debris is constantly moving and mixing with the wind, tides, and ocean currents. The garbage is difficult to clean up and remove from the ocean because there is so much of it over a large area and many of the pieces are so small. Plastics never really degrade. They just keep breaking down into smaller and smaller pieces. And the chemicals in those plastics may seep into the water as the pieces get smaller. Some animals, such as birds and fish, ingest plastic. Many animals die from ingesting plastic, but with the smaller pieces it is unclear what the impact is or will be.<sup>2</sup>

<sup>2</sup> "The Great Pacific Garbage Patch." Podcast transcript. NOAA—*Making Waves: Episode 126*. Web. <http://oceanservice.noaa.gov/podcast/june14/mw126-garbagepatch.html>



## INSTRUCTIONS

Study the map on page 7 of the Pacific Ocean. It shows the ocean currents and patches of marine debris. Use it and the information in the sidebar to answer the following questions.

1. Why do you think marine debris patches form where they have in the ocean?

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2. Look at the size of the patches compared with the coastal areas near to them. What can you understand about the size of the patches from this map?

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3. Do you think the Great Pacific Garbage Patch damages the ocean? Or is it harmless?

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4. Plastics are hard to clean up. What do you think can be done to prevent these areas of marine debris?

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## EXPLORE MORE!

Visit “**Marine Debris Where You Live**” on the NOAA Marine Debris website: <http://marinedebris.noaa.gov/marine-debris-where-you-live>

Click on some of the yellow or pink pins. They explain marine debris issues in those areas on the map. Pick one to focus on. Learn what you can about the marine debris issue in that area. Share your findings with the class.



# THE SHARK RIDER

## Multiple Views: Inspired By A Photograph



Take a look at this image of biologists helping a sea turtle trapped in a discarded fishing net. What does it tell you about sea turtles and marine pollution? Use this image, along with what you know about sea turtles and pollution from *The Shark Rider*, to begin a story. Imagine the context for this image. How did the turtle get trapped? What happens to the turtle next? Write your story on page 10 and share with a small group or the class.

Image Credit: David Burdick/Marine Photobank

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



## Go Graphic: Create a Timeline

In *The Shark Rider*, a series of events unfold to tell the story. Those events happen in a particular sequence.

A timeline visually shows the sequence of events in a story. Use the following timeline to plot out main events from *The Shark Rider*. Write a sentence or two describing why each event is important in the story.

 Event _____ Description _____ _____ _____	 Event _____ Description _____ _____ _____
 Event _____ Description _____ _____ _____	 Event _____ Description _____ _____ _____
 Event _____ Description _____ _____ _____	 Event _____ Description _____ _____ _____
 Event _____ Description _____ _____ _____	 Event _____ Description _____ _____ _____
 Event _____ Description _____ _____ _____	 Event _____ Description _____ _____ _____



## Further Research

Learn more about ocean health, its ecosystem, and the animals and plants that need a healthy ocean to survive. Check out these books, websites, and places to visit for more ocean research.

### BOOKS

Farrell, Courtney. *Save the Planet: Keeping Water Clean*. Ann Arbor, MI: Cherry Lake Publishing, 2010.

Helvarg, David. *50 Ways to Save the Ocean*. Novato, CA: New World Library, 2006.

MacQuitty, Miranda. *Eyewitness Ocean*. New York: DK Publishing, 2008.

Rake, Jody Sullivan. *Endangered Oceans: Investigating Oceans in Crisis*. North Mankato, MN: Capstone Press, 2015.

### WEBSITES

#### **Marine Mammal Stranding Center.**

<http://www.marinemammalstrandingcenter.org>

Find out about marine mammal strandings, what the center does to help, and what you can do to help on this site.

#### **NOAA Marine Debris Program.**

<http://marinedebris.noaa.gov>

Learn about marine debris in the ocean and how it impacts marine life.

#### **Ocean Conservancy.**

<http://www.oceanconservancy.org/our-work/marine-debris>

Annual coastal cleanups provide data on trash on beaches worldwide.

#### **See Turtles. "Ocean Plastic & Sea Turtles."**

<http://www.seeturtles.org/ocean-plastic>

Learn how plastic harms sea turtles on this site.

#### **Smithsonian National Museum of Natural History.**

"Ocean Portal: Find Your Blue."

<http://ocean.si.edu>

Visit this site to learn about ocean life and ecosystems, the threats to the ocean's health and organisms, and what people can do to help with its conservation.



### PLACES TO VISIT

Take a trip to your local aquarium. Search online for potential places to visit in your city. Go with your family, friends, or classmates.