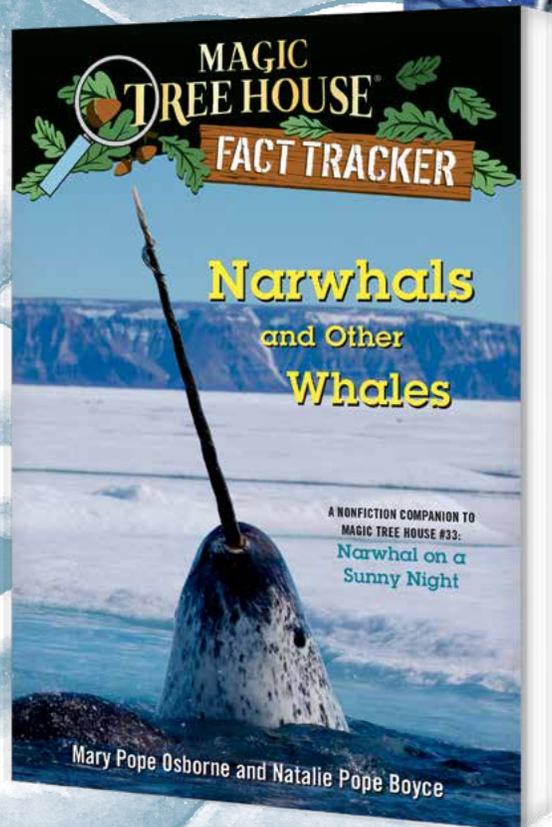
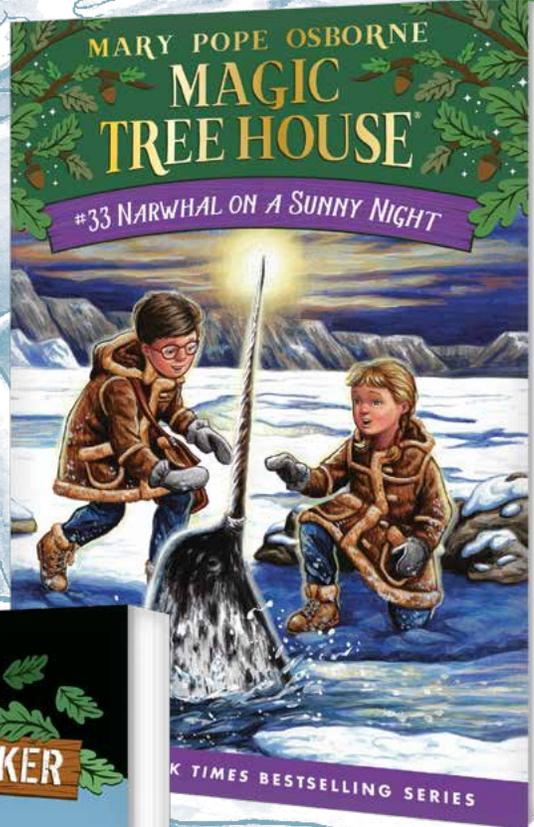
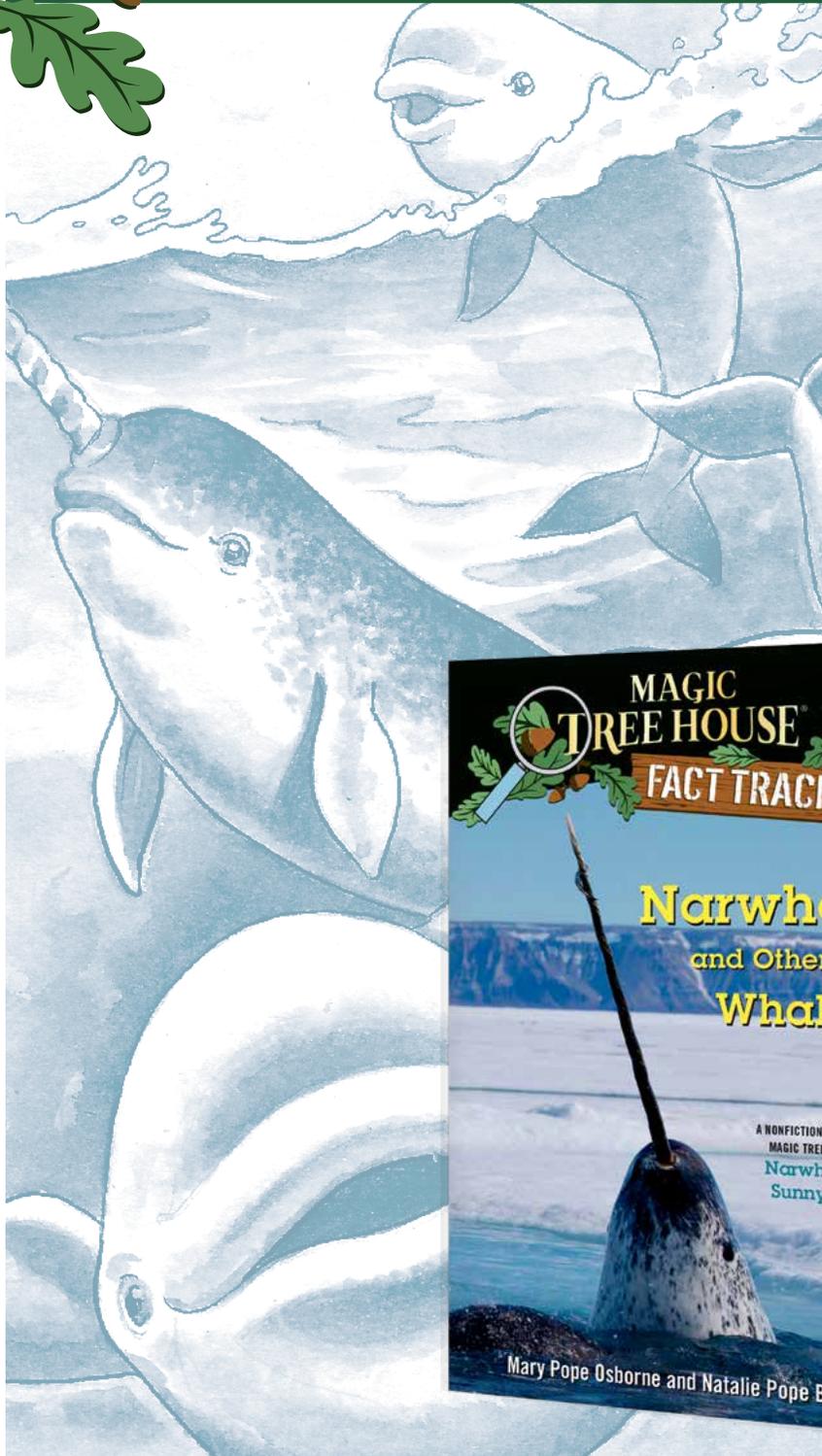


EDUCATORS' GUIDE

MAGIC TREE HOUSE®



NARWHAL ON A SUNNY NIGHT
HC: 978-0-525-64838-3
PB: 978-0-525-64839-0
Grades: 1-4

NARWHALS AND OTHER WHALES
PB: 978-1-9848-9322-2
Grades: 2-5

ABOUT *Narwhal on a Sunny Night*

When the magic tree house whisks Jack and Annie to Greenland, they're not sure what time they've landed in, but they immediately know what their mission is: save a narwhal! They meet a young hunter named Leif Erikson and ask for his help. But Leif has other ideas. . . .



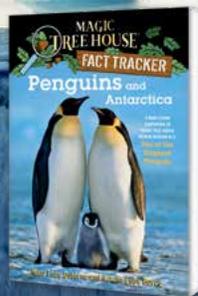
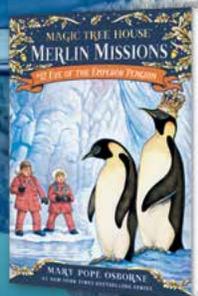
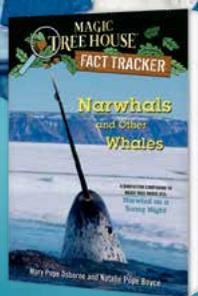
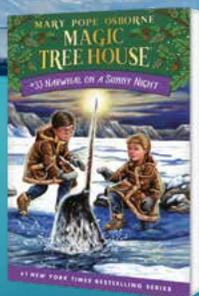
ABOUT *Narwhals and Other Whales:*

A Nonfiction Companion to *Narwhal on a Sunny Night*

When Jack and Annie came back from their adventure in Magic Tree House #33: *Narwhal on a Sunny Night*, they had lots of questions. What is a narwhal? Why is it nicknamed the unicorn of the sea? What other whales live in the Arctic? How do they survive the cold? Find out the answers to these questions and more as Jack and Annie track the facts about narwhals and other whales.



EXPLORE THE POLAR REGIONS WITH MAGIC TREE HOUSE



The polar regions affect the climate of the entire planet. It's important for students to understand that however remote the Arctic and Antarctic seem, what happens there impacts them and the rest of the world. Who better than Jack and Annie to take students to either end of the earth to learn more?

Narwhal on a Sunny Night and the nonfiction companion *Narwhals and Other Whales* have

inspired these Magic Tree House activities that encourage an in-depth look at the polar regions. In this guide, you'll find many ways to use Magic Tree House titles to launch learning adventures and bring science, geography, and more to life for students in your second- to fifth-grade classrooms, including modifications and extensions to help you differentiate instruction for your students.

WHERE IN THE WORLD?

Maps provide context on how the different regions of the world interact and affect one another. Finding where in the world Jack and Annie's polar missions take place is also a great way for students to further explore the polar geography in the Magic Tree House series!

Help students understand that the polar regions are more than just the North Pole and South Pole. The polar regions are huge! The Arctic encompasses the Arctic Ocean as well as portions of eight countries: Norway, Sweden, Finland, Russia, the United States (Alaska), Canada, Denmark (Greenland), and Iceland. The Antarctic encompasses the continent of Antarctica and parts of the South Atlantic, South Pacific, and Indian Oceans.

On a large map of the world, ask a student to locate the the Arctic and Antarctic Circles. Ask another student to locate the Arctic and Antarctic on a globe. Give all students opportunities to look at the polar regions on both the map and the globe and take time to compare the size of the polar regions to other landforms (keeping in mind that some maps show distortion at the poles). As a class, compare and contrast these two views and discuss whether the polar regions are easier to see on a map or a globe.

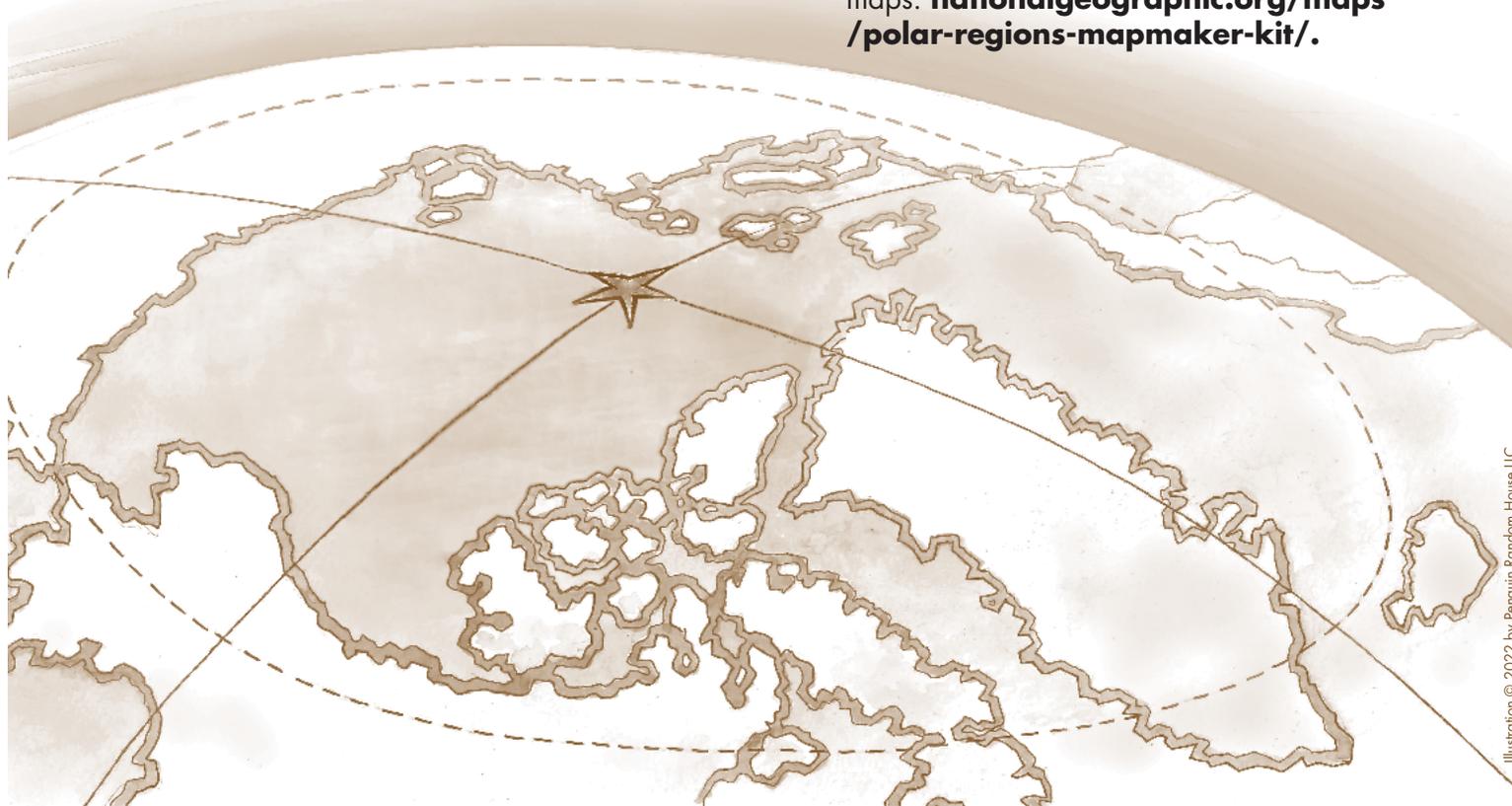
Provide students with their own copies of a blank map of the Arctic and a blank map of Antarctica. Have them

label the maps. Then have students call out characteristics and facts they know about polar regions or other areas. Have students work in small groups to verify the facts and find others, using Magic Tree House Fact Tracker companion titles and other resources. As a class, decide whether to list facts on the back of the Arctic or Antarctica map or both.

Review everyone's research, and use it to create a large class map of both polar regions, complete with fabulous facts and information about the locations of Jack and Annie's polar adventures.

Modifications and extensions:

- Have students use their research to complete a Venn diagram about the Arctic and Antarctica.
- Take students on a virtual trip to the Arctic region and to Antarctica via Google Earth.
- Students can use Google Earth to select a specific area in the Arctic and in Antarctica, and identify features, characteristics, and geographic landmarks that define the areas, then compare and contrast the two locations.
- For students who would benefit from working in small groups with a larger map, National Geographic offers downloadable tabletop size maps: nationalgeographic.org/maps/polar-regions-mapmaker-kit/.



POLAR ICE

Jack and Annie hope they meet some scientists in Greenland so they can discuss their concerns about melting ice in the Arctic. With this science experiment, you can demonstrate for students how ice melting in Greenland affects coastlines and sea levels, and discuss its impact on the people and wildlife in the Arctic and the rest of the world.

Help students understand that in Greenland, a single ice cap or glacier covers about 80 percent of the island. To get students thinking about the effects of melting ice, prepare this demonstration:

- In two large clear plastic bins (or empty aquariums), create land masses by filling one side of each with gravel or pebbles to about four to five inches from the top of the container.
- Fill each container with water but leave the surface of the "land" above water.
- Label containers: "land ice" and "sea ice."
- Cover only the gravel in the land ice container with several inches of crushed ice.
- Add crushed ice to only the water of the sea ice container, adding ice as long as it continues to float in the water.
- After ice is added to each container, mark the sea level by measuring the water height for each

container and making a line. Help students understand what "sea level" means and how it can be measured, explaining that it is not constant everywhere and that it can be affected by ocean currents and natural cycles.

As a class, make and write predictions about what will happen in each container:

- When the land ice melts, how will it affect sea level?
- When sea ice melts, how will it affect sea level?

As the ice melts in the containers, ask students to share what they know about why ice is melting in the Arctic. Share Chapter 7 "The Arctic Is Melting!" from *Magic Tree House Fact Tracker: Polar Bears and the Arctic* to help students understand how carbon dioxide and other greenhouse gases produced by human activities (including burning fossil fuels to drive cars and make electricity) have led to significant and lasting changes in climate, including an increase in average global temperature.

After the land ice and sea ice have melted, have students observe and discuss. Do their observations match what they predicted? How do changes in the land ice and sea ice affect their environments? How would those changes affect the people and wildlife in the Arctic and the rest of the world?

Modifications and extensions:

- For students who benefit from a hands-on small-group approach, provide smaller containers, materials, and instructions for conducting the land ice and sea ice experiment, including recording sea level measurements at fifteen-minute intervals.
- Have students turn land ice and sea ice containers into habitats for their favorite Arctic animals by including small toys or clay representations in the melting experiment and predicting what will happen to Arctic wildlife.
- Extend the discussion about the global effects of melting ice to include both the Arctic and Antarctic.
- Have students research and compare and contrast the many different types of ice formations on the planet: icebergs, sea ice, ice shelves, ice sheets, glaciers, ice caps, etc.
- Have students research the effects of the disappearance of both land ice and sea ice on narwhals and other Arctic whales.



ICY WORDS

Have students warm up with these writing activities to explore the polar regions.

Dear Diary

Jack and Annie know one thing for sure about the polar regions—they're cold! But what is it like to live there? Have students learn about life at the research stations in Antarctica or in one of the eight nations that circle the Arctic Ocean. Ask them to use their research to create a character and write at least three entries in a journal from that character's point of view, sharing details about living in a polar region—what they see, what activities they do, and how they keep warm. Entries should explore their character's thoughts, feelings, and experiences.

Animal Communication

Annie is often able to communicate with animals. In *Narwhal on a Sunny Night*, she can interpret the squeaking noises of the narwhal and the tap of his horn as thanks. All species have ways of communicating. Have student pairs think about why animals communicate, and then research how a polar species communicates. Have student pairs write and perform a short skit that demonstrates their animal using visual, auditory, or tactile communication.

Greetings from . . .

Have students design and create a postcard that depicts a place in the Arctic or Antarctica. On their postcards, they should include natural and human-made features unique to the location and a fun fact that helps capture the essence of the place. They can draw the features or find images online to use in their designs. On the back of their postcards, students should write as Jack or Annie to Morgan le Fay about the place featured on the card. Have students "send" their postcards by exchanging them with classmates. Then have them talk about the ways in which the places featured on the front of the cards are alike and different, and come up with some ideas for what Morgan's responses might be.

Viking Voyagers

Erik the Red is known as the founder of the first permanent settlements in Greenland and for naming the territory. His son, Leif Erikson, is the

first European to have landed in North America. When Jack and Annie meet these famous explorers in *Narwhal on a Sunny Night*, they are both excited to see the map that Jack and Annie have. Ask students why a map would be of interest to Erik and his son. Have students think about what they would need for an ocean voyage on a Viking ship. Then have students research a real voyage led by either Erik the Red or Leif Erikson and create a map of that voyage.

Snowy Poetry

A cinquain is a non-rhyming five-line stanza. Have students gather descriptive words and write a cinquain that celebrates life in the Arctic!

Line 1: One-word title, a noun that identifies the topic

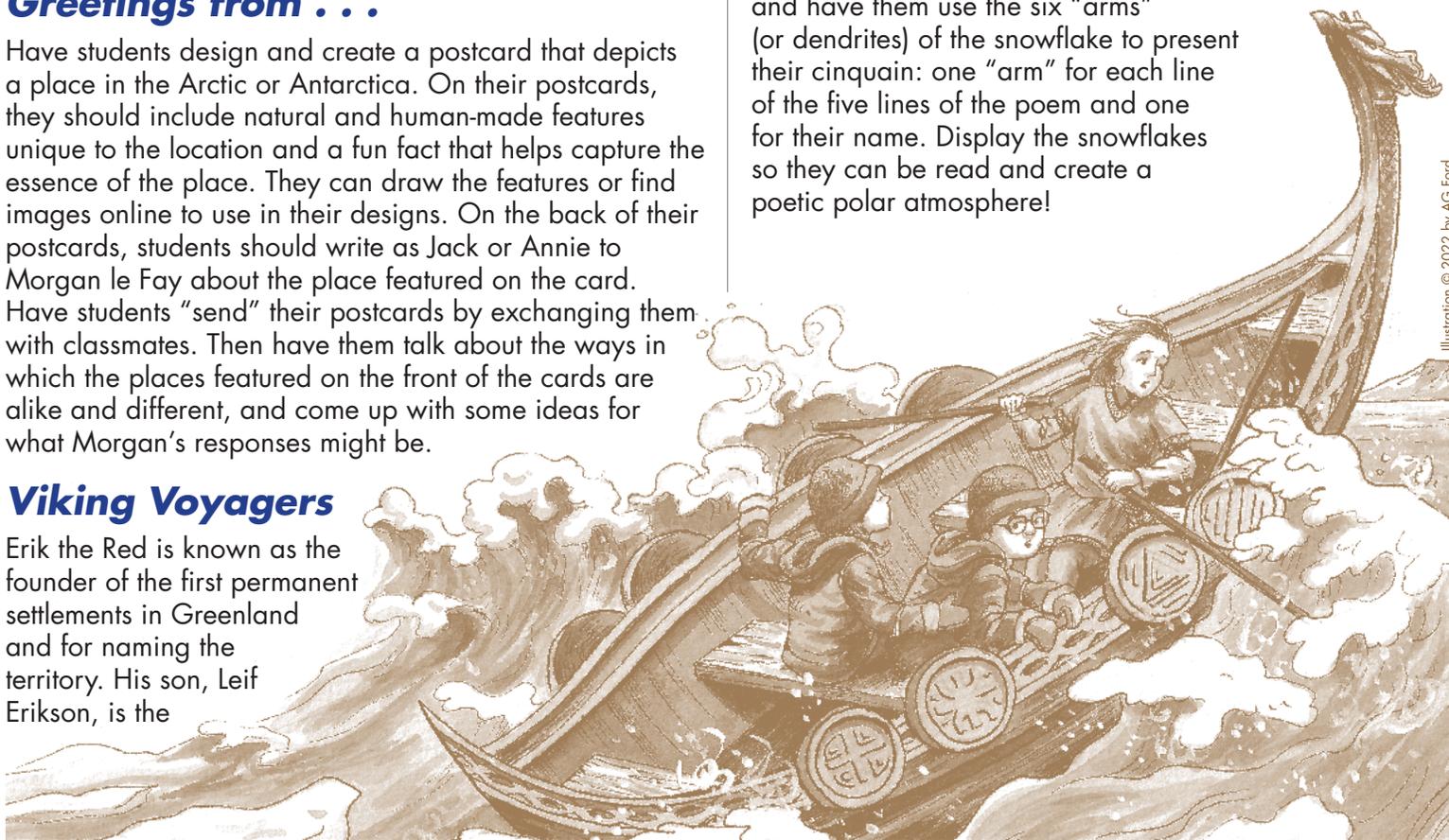
Line 2: Two adjectives that describe the topic

Line 3: Three "-ing" verbs that describe action

Line 4: A phrase that describes something about the topic

Line 5: A noun that is a synonym for the topic

Provide students with a printed snowflake and have them use the six "arms" (or dendrites) of the snowflake to present their cinquain: one "arm" for each line of the five lines of the poem and one for their name. Display the snowflakes so they can be read and create a poetic polar atmosphere!



FIELD GUIDE TO POLAR ANIMALS

Annie loves to learn about animals! Creating their own field guide to polar animals is a great way for students to learn even more about the animals Jack and Annie encounter on their polar missions, do some reading and writing for a real-world purpose, and deepen their understanding of informational text features.

A field guide is a book that helps to identify flora, fauna, and natural objects. Before students begin writing a field guide, they need to develop an understanding of what field guides are, how they are organized, and what information they might find in an entry. Share a variety of print and online field guides for students to explore. As they review the guides, ask them to make notes about characteristics of a good field guide and what they think are the important things their own field guide entries should have. In going over what they've learned about field guides, discuss:

- How pictures, maps, captions, diagrams, and other text features helped convey information
- Why information about scientific names and classification might be included in field guides and what those terms mean
- Who uses field guides, and who potentially could use their Polar Animals Field Guide (explorers, scientists, zoo visitors, etc.)

Magic Tree House Fact Trackers *Penguins and Antarctica*, *Polar Bears and the Arctic*, and *Narwhals and Other Whales* have lots of great facts about polar animals and their environments. Discuss some of the polar animals that students have already met through reading of Magic Tree House titles. What more do they want to learn about these animals?

With students, make a list on chart paper of the natural objects, plants, and animals that Jack and Annie have encountered on their polar missions. Copy the names of the animals on the list to slips of paper that you put into a warm winter hat. Each student will choose an animal from the hat, become an expert on that animal, and create an entry about it for the class's Polar Animals Field Guide.

Provide students with the Polar Animals Field Guide template and help guide their research with suggestions based on your class discussion about good field guides.

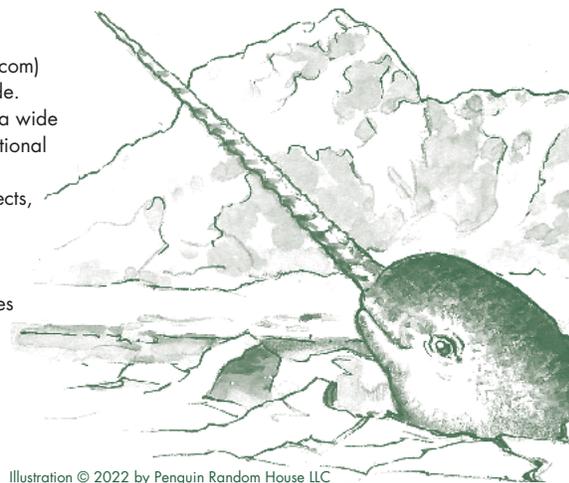
Magic Tree House Fact Tracker titles and their "Doing More Research" sections are a good place to start. Have students plan to keep a journal of what they discover and questions they have so all their notes are in one place when they are ready to write their final drafts for the Polar Animals Field Guide.

Once field guide pages are complete, put all the pages in a three-ring binder and create a table of contents and cover for the guide. Have student experts present their pages to the class. Make the new Polar Animals Field Guide available in your classroom library.

Modifications and extensions:

- Have students work in pairs to research a polar animal and create a field guide page together.
- Students interested in more than one polar animal, plant, or object could create additional field guide entries.
- Students interested in seeking other knowledge about the Arctic or Antarctica could create their own guides to the flora and fauna of those regions, or create an introduction for the guide that defines and describes the polar regions.
- Create an online template for field guide pages for students to complete and publish their field guide online.
- Have students create posters, flyers, or short videos advertising their new Polar Animals Field Guide.

Rachael Walker
(belleofthebook.com)
created this guide.
She consults on a wide
variety of educational
programs and
multimedia projects,
and develops
educational
materials and
reading resources
for children,
parents, and
teachers.



(Name)

(Scientific Name)

Classification:

Description (what it looks like):

Habitat (where it lives):

Range (where it roams):

Diet (what it eats):

Conservation status:

Fun facts:

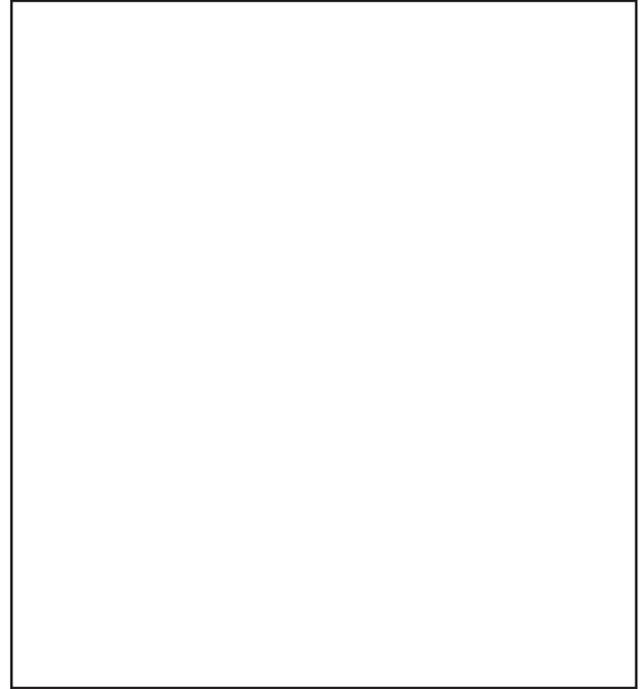
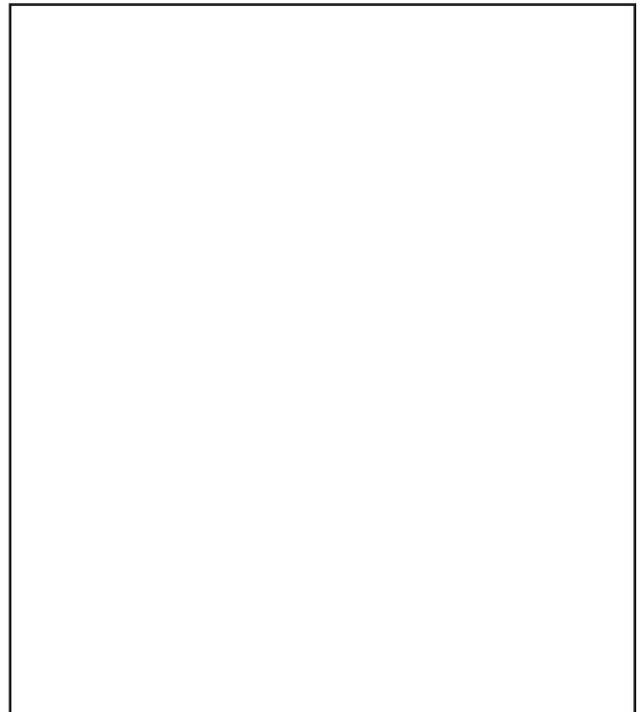


Image of _____



Map of _____

MAKE A NARWHAL SNOWFLAKE

Cut out the square. With lines and images showing, fold along the long diagonal line to make a triangle. Fold the triangle in half to make a smaller triangle. The narwhal should be in the middle of the triangle. Fold the small triangle on the left behind the narwhal. Then fold the small triangle on the right behind the narwhal. Cut away all the gray area. Carefully unfold your snowflake to reveal the pod of narwhals!

