

ECOSYSTEM
SERIES

A DESERT ECOSYSTEM

Who Needs a DESERT?

KAREN PATKAU

TEACHER'S GUIDE

ALIGNS WITH COMMON CORE STATE STANDARDS



TUNDRA BOOKS

Dear Educator

Who Needs a Desert? A Desert Ecosystem introduces students to the fascinating desert ecosystem. Award-winning author and illustrator Karen Patkau uses striking illustrations and informative text that can be used in a number of ways, including:

- To explore conceptual and thematic connections such as ecosystems, habitat, food chains, conservation, responsibility, connection, dependence
- To enrich a science and ecology unit
- As a whole class read aloud or for independent reading and/or research

The activity guide includes a variety of discussion questions, whole class, small group and independent activities and prompts to elicit a meaningful understanding of the text for children ranging in age from seven to ten years. The suggested activities can be adapted to suit the needs of your students. Where applicable, activities have been aligned with Common Core State Standards.

About The Book

Although deserts are harsh, dry places, they teem with fascinating plants and wildlife. Author and illustrator Karen Patkau takes us on a magical journey through one of the earth's most important ecosystems. In *Who Needs a Desert? A Desert Ecosystem*, we discover, in breathtaking art and lyrical text, the plants and animals that have adapted to its severe conditions — from grasses, cacti, shrubs and trees to Gila monsters, roadrunners, scorpions and kangaroo rats.

As part of Tundra's exciting Ecosystem Series, along with *Who Needs an Iceberg?*, *Who Needs a Jungle?*, *Who Needs a Prairie?*, *Who Needs a Reef?* and *Who Needs a Swamp?*, *Who Needs a Desert?* brims with captivating creatures, fact-filled notes, a useful glossary, ecological features and a comprehensive map. Each book is not only informative and beautiful, but also a call to action for all of us who care about the world in which we live!

About the Author

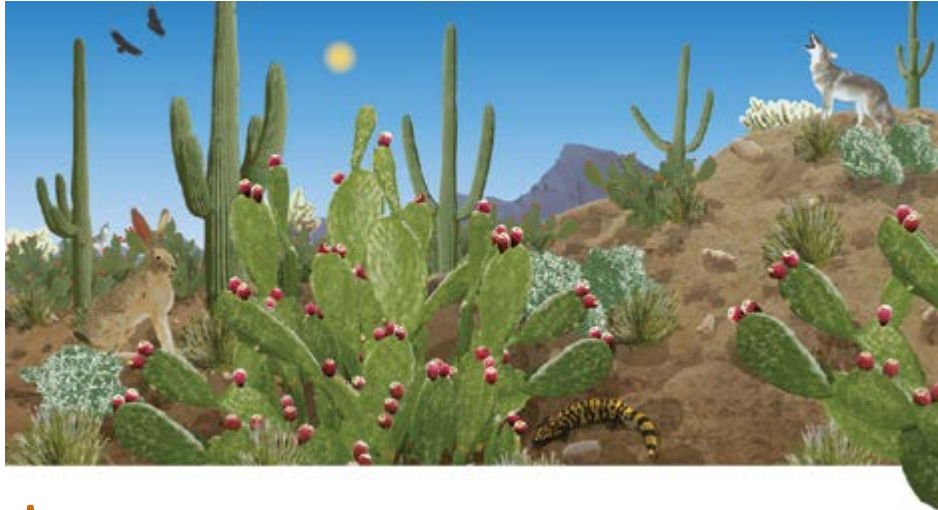
Karen Patkau is the award-winning author and illustrator of many books for children, including *Creatures Great and Small* and *Creatures Yesterday and Today*. Her first three books in the Ecosystem series were published to much critical acclaim. *Who Needs an Iceberg?* was a Green Book Festival Honor Book; *Who Needs a Jungle?* was chosen by the Canadian Children's Book Centre as a Best Book for Kids & Teens; and *Who Needs a Swamp?* received a Silver Birch Express nomination as well as being a Green Book Festival Honor Book. Karen Patkau lives in Toronto.



© Photo by Jane Molnar

Pre-Reading Discussion / Activities

1. Introduce/review the concept of an “ecosystem.”
2. Show the cover of *Who Needs a Desert?* to students without revealing the title. *What ecosystem does this book explore? How do you know?*
3. In pairs, small groups, individually or as a class, investigate students’ prior knowledge of deserts. Ask students to complete a Who/What/Where/When/Why/How chart with what they know. Younger students can draw a picture of what they think a desert looks like. Remind students to try and include both plant and animal life. As a class, brainstorm and record a list of words that come to mind when students think of deserts.
4. Record any questions students have about deserts.



Learning Activities

1. What Do You See?

- The vivid illustrations in the book enhance our understanding of the complex nature of the desert. Re-read the book and locate what is being described in the text within the illustration. Re-read the section at the end of the book about the desert’s inhabitants and challenge students to locate the living things in the illustrations.
- Assign chunks of text to individuals or pairs of students and ask them to illustrate the text. Encourage the use of bright, vivid colors and to further research any of the creatures or plant life that they are not sure about.

(RI.3.7)

2. Creatures of the Desert

- There are many unique and fascinating living things that live in a desert. Select one of them and write a fictitious story with the living thing as the main character. Use the desert itself as your setting and try to incorporate as much scientific knowledge about the desert into your story as possible.

(W.3.3, W.4.3, W.5.3)

3. Nocturnal vs. Diurnal

- The desert is a busy place for its inhabitants both during the day and at night. Divide a large piece of paper into two sections. Label one side “day,” and the other side “night.” Draw or paint a desert scene on each side that clearly shows how different animals and plants are active during the day or at night.
- If you were to visit the desert during the day, what would you need to wear and bring with you? What would you need at night? Draw and label a picture of yourself showing what you need at different times of day.

Learning Activities (Continued)

4. Food, Shelter, Water

- Consider the basics you need to survive (food, shelter, water). What characteristics of the desert might make it difficult for its inhabitants to find these basic necessities? What explanations can you find in the book that explain how some of the animals adapt to the harsh desert conditions?

(W.4.3, W.5.3, W.6.3)

5. Where in the World?

- Examine the map of where deserts can be found in the world. Make a list of the parts of the world that have deserts.
- Which continent has the most deserts? Which continent does not have any deserts? Research the name of the deserts shown on the map in the book. Write a list in order from largest to smallest.

(RI.3.1)

6. Glossary

- Select five of the terms included in the glossary to examine more closely. Carefully read and think about the definitions provided and rewrite the definitions in your own words. Use the terms in sentences that demonstrate your understanding.
- Add any other words within the book that you are unsure of to a glossary of your own making.

(RI.3.4, RI.4.4)



7. Existing in a Story

Provide the following list of questions for students to answer. Students can answer the questions in writing, pictures or orally depending on their level.

- How are deserts formed?
- Where can deserts be found around the world?
- How do plants and animals adapt to the severe desert environment?
- What wildlife thrives in the desert?
- Which plants bloom under the blazing sun of the desert?
- How do desert plants and animals get energy and food?
- Why is desert land so barren?
- Why do we need deserts?

(RI.3.1, W.3.2, W.4.2, W.5.2)

Learning Activities (Continued)

8. True or False

- Indicate whether the following statements about deserts are true or false. For any of the false statements, rewrite the statement to make it true.

Bacteria and fungi are examples of decomposers.

True / False

Meat eaters are called herbivores.

True / False

Nocturnal creatures are active at night.

True / False

Most deserts are found on the equator.

True / False

The desert air gets cooler at dusk.

True / False

Plants make their own food using carbon dioxide and air.

True / False

The roadrunner is the largest member of the cuckoo family.

True / False

The largest desert in the world is found in South America.

True / False

(RI.3.1)

9. Fill in the blanks using the words provided below.

- a) _____ passes from one living thing to another in a food chain.
- b) The _____ is an imaginary circle around the middle of the earth.
- c) _____ live on and break down leftover dead matter.
- d) An example of a desert herbivore is _____.
- e) An example of a desert carnivore is _____.
- f) The main growing season for trees and shrubs is _____.
- g) An animal that is hunted by another animal for food is called their _____.



ENERGY MULE DEER PREY EQUATOR HAWKS DECOMPOSERS SUMMER

(RI.3.1)

Wrap-Up Discussion Questions

1. Assign one of the living things listed at the end of the book that can be found in a desert to each student. Ask them to further research the creature or plant and present back what they have learned in small groups or to the class. Consider creating a class mural with each student contributing a drawing of their living thing.
2. Revisit what students recorded of what they knew about deserts before reading the book and their questions from the pre-reading discussion. What are three facts that the students learned about deserts? Were all of their questions answered? What further questions do they have to explore?
3. Read the other books in the Ecosystem series. Compare and contrast the different ecosystems.

(W.3.7, W.4.7)

PRAISE FOR the Ecosystem Series:

“Patkau introduces readers to the North American Arctic ecosystem efficiently and methodically, discussing habitat, the food chain and seasonal changes, along with the ever-important formation of the iceberg ... Her digitally composed illustrations at times offer informative scenic views, and at times, present readers with more direct scientific information. This, as well as its companion volumes *Who Needs a Swamp?* and *Who Needs a Jungle?*, offers a clear, readable introduction for budding naturalists and geographers.”

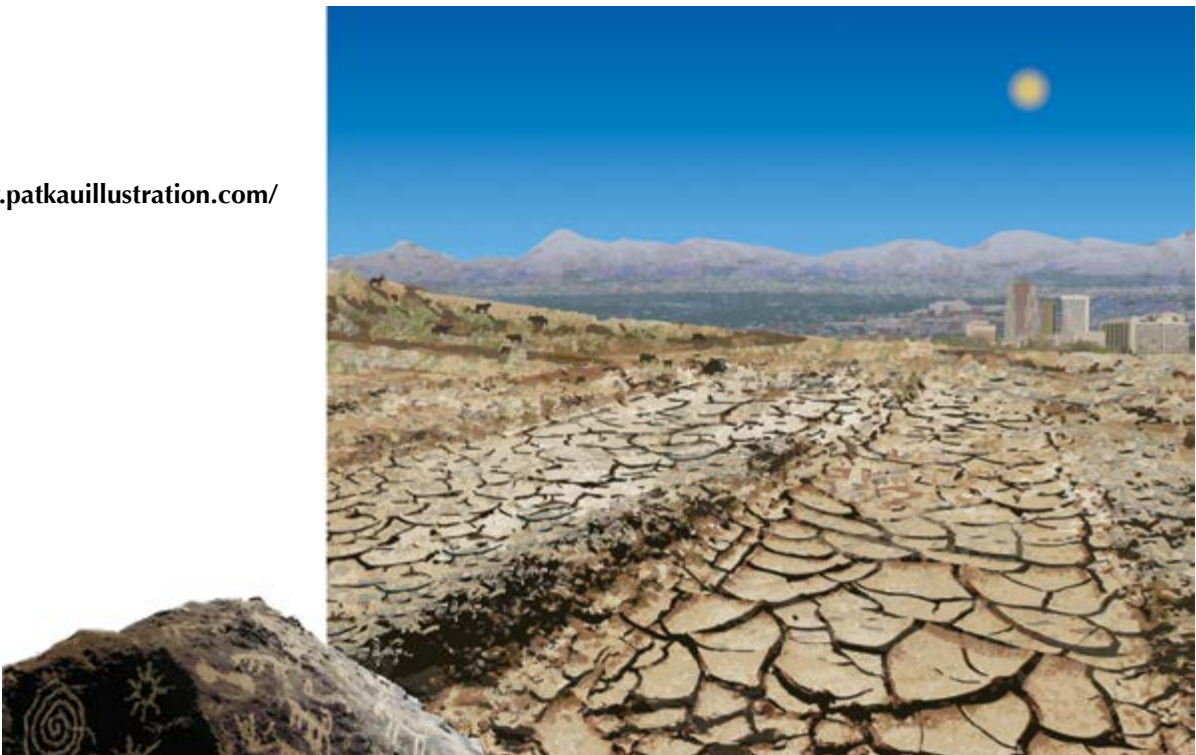
– *The Toronto Star*

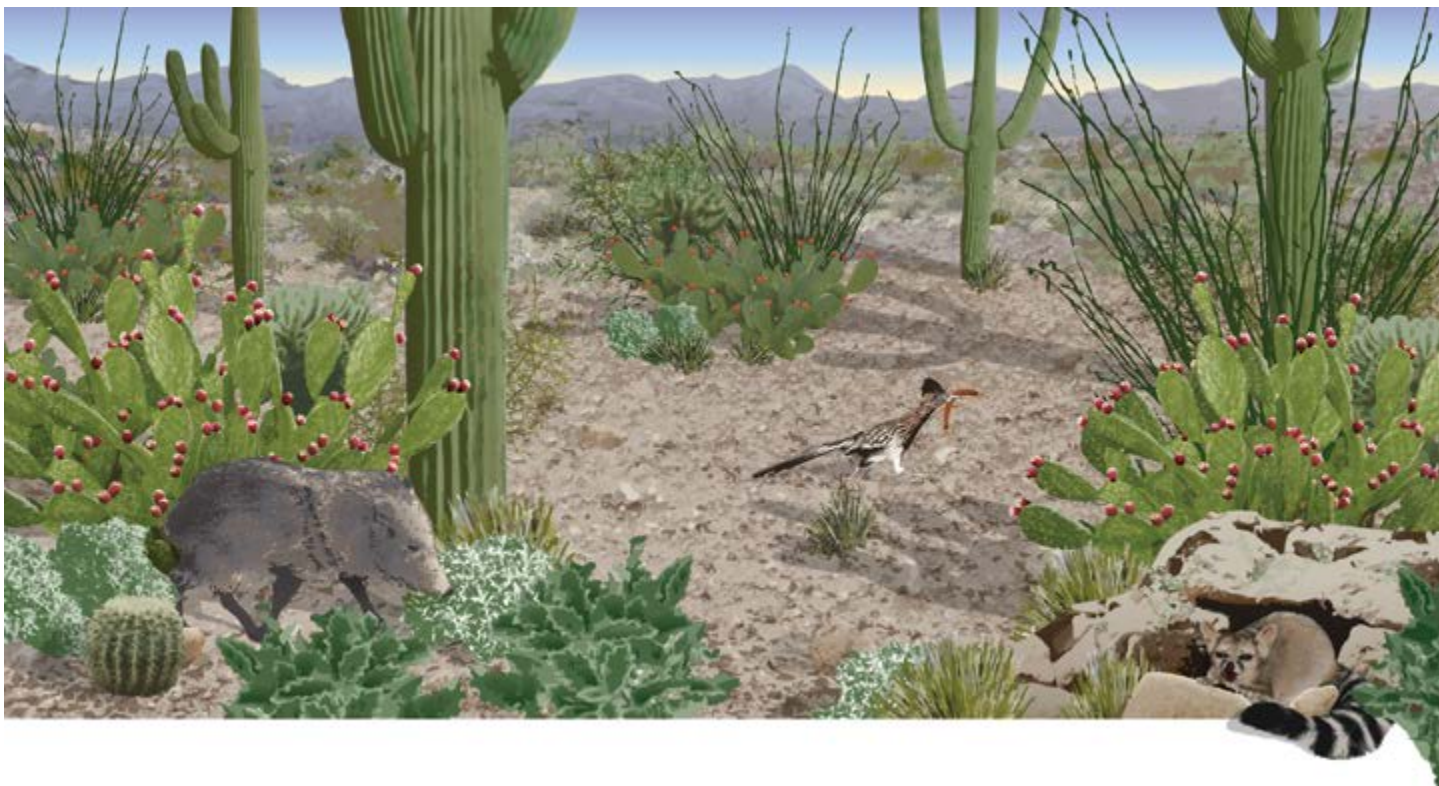
“... Patkau offers a series of vibrant scenes ... striking illustrations. The text both interprets the visual content ... and offers paragraphs of diverse facts.”

– *Booklist*

Links

<http://www.patkauillustration.com/>





Appendix: Common Core State Standard

CCSS.ELA-Literacy.RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
CCSS.ELA-Literacy.RI.3.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
CCSS.ELA-Literacy.RI.3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
CCSS.ELA-Literacy.RI.4.4	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
CCSS.ELA-Literacy.W.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
CCSS.ELA-Literacy.W.3.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
CCSS.ELA-Literacy.W.3.7	Conduct short research projects that build knowledge about a topic.
CCSS.ELA-Literacy.W.4.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
CCSS.ELA-Literacy.W.4.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
CCSS.ELA-Literacy.W.4.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic.
CCSS.ELA-Literacy.W.5.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
CCSS.ELA-Literacy.W.5.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.