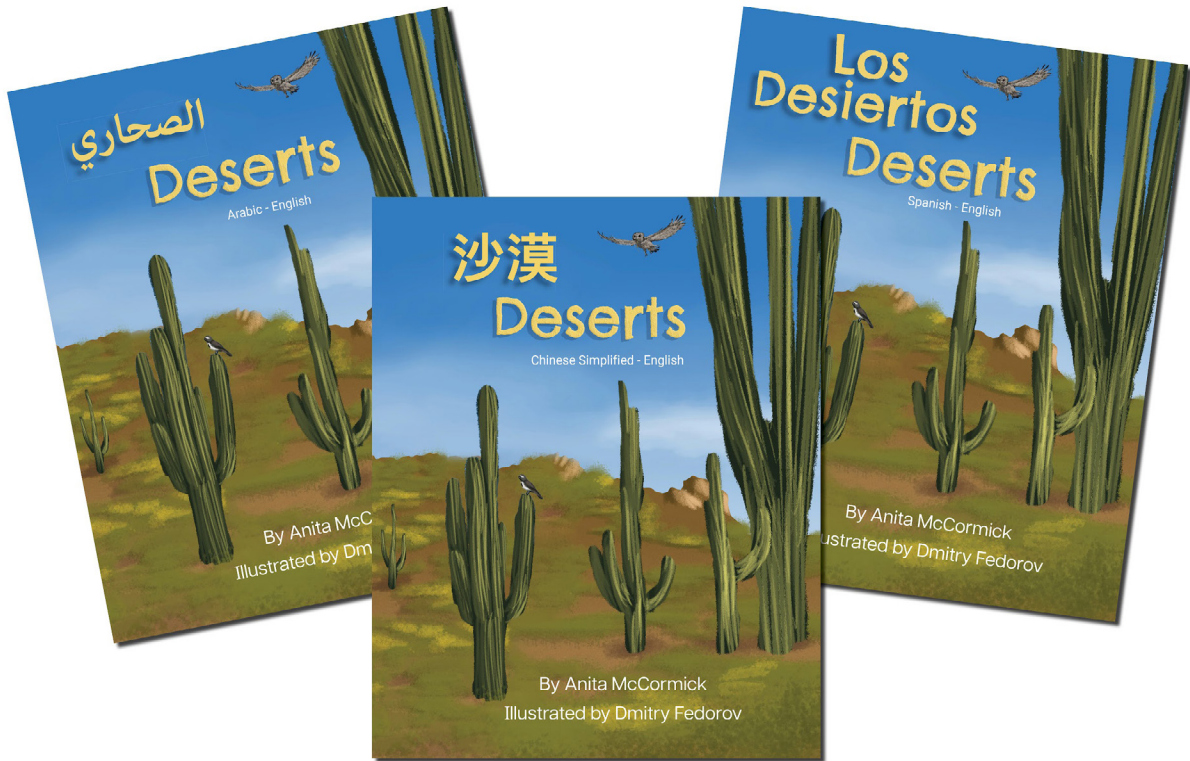


THEME: Habitats - Deserts



Lesson Goal: To develop one's knowledge of the flora and fauna of deserts, including how hot deserts are expanding and how cold deserts are depleting over time.

Book Used in Lesson:

Deserts by Anita McCormick

Snapshot of Lesson:

- The facilitator elicits the children's prior knowledge of deserts.
- The children learn new vocabulary needed to understand the book.
- The facilitator reads the text aloud to the children, applying the strategies of making connections and making inferences within the text as well as with other texts the pupil has interacted with.

- The children respond to the text by answering literal, inferential, and evaluative questions.
- In small groups, the children will consider creative ways of adapting to a hot or cold desert climate using information from the text and a graphic organizer as scaffolds.
- Each child will create an art trading card to aesthetically respond to the text.
- The lesson will conclude with a 10 fact round-up, whereby the class will synthesize and share 10 facts they learned during the lesson.

Grade Level: 2-5 (Note: the activities in this lesson plan can be tailored to suit the needs of the specific group of children, at the discretion of the facilitator.)

Time Frame: 40-60 minute session

Background Information and Discussion Points for Facilitator:

Deserts is a nonfiction picture book describing the landscape of a desert, describing details such as what the climate of a desert is like, where a desert landscape can be found, what animals and plants live there, and how they survive in desert conditions. In this book, there are various references to the animal and plant species noted below, both in the text and in the pictures.

This book shows all measurements in metric units. Facilitators may use this as an opportunity to teach about different types of measurements around the world using Language Lizard's measurements lesson [here](#). The measurements lesson can be utilized as a co-curricular math activity. Metric to imperial conversions for all the measurements in the Habitat series can be found [here](#).

It may be helpful for the lesson facilitator to be aware of where each of these species is located around the world, to support a fruitful discussion on the book content during and after the interactive read-aloud.



تساعد آذان أرنبوس أسود الذيل الطويلة على
تلطيف حرارة الصحراء. وهو يتغذى على الأعشاب،
والشجيرات، والأشجار الصحراوية.

Black-tailed jackrabbits have long ears
to help radiate the desert heat. They
eat desert grasses, shrubs, and trees.

Animal & Plant Species in the Book:

- **Pages 3, 6 & 11 - Giant Saguaro Cactus:** This cactus is only found in the North American Sonoran desert.
- **Page 5 - Ostrich:** Ostriches are native to Africa and are found in the savanna and desert regions.
- **Page 5 - Acacia Tree:** Acacia trees grow natively in Africa and Australia, Mediterranean climates, and the grasslands of North America, South America, Europe, and Asia.
- **Page 5 - Desert Scorpion:** Scorpions are found on every continent except Antarctica, in habitats ranging from tropical rainforests to grasslands and deserts.
- **Page 7 - Kit Fox:** Kit foxes can be found in the arid and semi-arid regions of the southwestern United States and northern and central Mexico.
- **Page 8 - Camel:** Camels are typically found in African, Asian, and Middle Eastern deserts.
- **Page 10 - Sand Cat:** Sand cats can be found in Africa's Sahara desert, throughout the Arabian peninsula, and in parts of central Asia.
- **Page 11 - Black-Throated Sparrow:** Black-throated sparrows are most often found on the dry desert landscape of the American Southwest and Mexico.
- **Pages 12 & 13 - Elf Owl:** Elf Owls are found in forest and desert-like environments on the USA's southern border and Mexico.
- **Page 15 - Dung Beetle:** Dung beetles are found on all continents except Antarctica.

- **Page 16 - Mesquite Tree:** These trees are found in the semi-arid regions of southwestern USA, Mexico, South America, Northern Africa, and eastern Asia.
- **Page 17 - Raven:** Ravens are very common in woodland areas and can be found across the Arctic regions, temperate regions of North America and Eurasia, and in South America and North Africa.
- **Page 19 - Black-Tailed Jackrabbit:** Black-tailed jackrabbits are found throughout the western United States in the desert, open plains, and foothills.
- **Page 20 - Polar Bear:** Polar bears live in Alaska, Canada, Russia, Greenland, and some Norwegian islands.
- **Page 21 - Ivory Gull:** Ivory gulls are found in northeastern Canada, northern Greenland, Svalbard, and parts of Russia.

Objectives:

- **Knowledge:** Identify and describe key descriptors of a desert habitat using keywords.
- **Skills:** Make connections to prior knowledge and compare and contrast the desert landscape to the knowledge of other known landscapes and habitats.
- **Attitudes:** Develop an appreciation for the differences between the local habitat and deserts, and a joy for learning through the transfer of language knowledge from one language to another.

Materials and Resources:

The text *Deserts* by Anita McCormick; a map of the world; access to ICT (interactive whiteboard or laptop or tablet/iPad); art and art utensils (coloring pencils, markers, crayons), graphic organizer.

Linkage and Integration Across Subject Areas:

- **Creative Arts:** drawing/depicting a desert landscape; sounds associated with the landscape; the movement of living things within this habitat.
- **Social Studies:** climate and climate change; positioning of desert habitats on a map.

Los camellos pueden vivir en el desierto sin agua y sin comida durante muchos días seguidos. Cuando los camellos encuentran agua, ¡pueden beber hasta 136 litros en 15 minutos!

Camels can live in the desert without water and food for many days at a time. When camels find water, they can drink up to 136 liters in 15 minutes!



Procedure:

- **Introduction:**
Elicit the children's prior knowledge of deserts. It may be useful to record these responses on a whiteboard/chart with older students.
- **Vocabulary Development:** The facilitator will introduce the following words, explain them using a child-friendly definition, and give several examples of how the word could be used in a sentence.
 - **endangered:** something that is at risk of becoming extinct
 - **species:** a group of living things with similar genetic traits
 - **nutrients:** important substances found in food
 - **roots:** a part of a plant (usually underground), which provides support, food, and water to the plant
 - **radiate:** to spread out from the center
 - **shrub:** a woody plant which is smaller than a tree
 - **precipitation:** rain, snow, sleet, or hail that falls from the sky to the ground

- **Vocabulary Game: Loop Game**

Put the children in groups (maximum size: 8 people), and give each group a set of loop cards (see Appendix A). Each child will get one card. If the group has fewer than 8 people, then some children will get more than one card. The child with the card that reads “START” begins the game by reading out their question (i.e., “Who has a definition for endangered?”). The child who holds the card with the answer to that question (i.e., “Something that is at risk of becoming extinct.”), reads out the answer along with the question written on their card. The game continues in a similar fashion until all the cards have been read aloud. Then the children shuffle and swap their cards and begin the game again.

- **Interactive Read-Aloud:** The facilitator will read the text, *Deserts*, aloud. The facilitator should pause on occasion to interact with the students by asking the questions below.

- **Reading Discussion to Encourage Reflection and Response:** Once the story has been read, allow for a class discussion based on the story. The facilitator may use questions from the list below or choose to ask other questions based on their own knowledge of the children with whom they are working.

- **Literal Questions:**

Readers use information directly from the text to answer this type of question.

- How much rain falls in deserts each year?
- Name the largest hot desert in the world. Where is it located?
- What is the average temperature of deserts during the day/night?
- Name two plants (including trees) that grow in the desert.
- Name two animals that live in the desert.
- What is the largest desert on Earth?

- **Inferential Questions:**

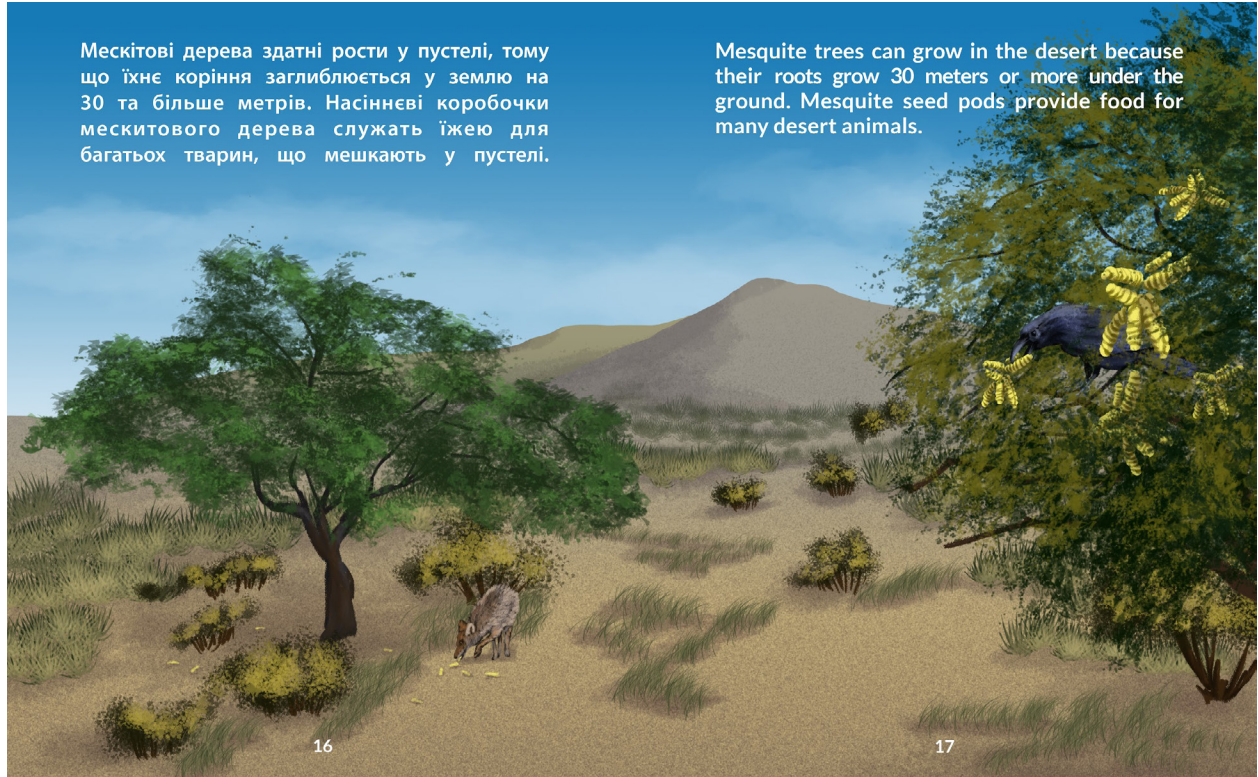
Readers use the information in the text, as well as background knowledge, to deduce the answer (not explicitly stated in the text).

- How can camels survive in hot deserts?
- Why do you think cactuses have many spikes?
- Why do you think mesquite trees have such long roots?
- Why are the ears of black-tailed jackrabbits very important for survival?

- **Evaluative Questions:**

Readers use knowledge from their personal lives and of the wider world to answer this type of question.

- Could humans survive in a desert? Why?
- How do you think the flora and fauna in cold and hot deserts differ?
- Why do you think cold deserts are shrinking? What can individuals do to slow down this process?



- **Group Activity: Creative Adaptations!**

In small groups, the children will think of creative ways in which they could adapt to a hot, dry climate. If time allows, they could also consider creative ways in which they could adapt to a cold, wet climate and compare and contrast both perspectives. The graphic organizer below should support this process.

On the left-hand side, the children should list features of a hot desert climate, by engaging in 'look-backs' using the text, **Deserts** (e.g., temperature day/night, rainfall levels, etc.). On the right-hand side, the children should consider ways of adapting to each of the climatic features identified on the left-hand side (e.g., ways of storing water, ways of cooling down, etc.). It is envisioned that this task would be undertaken in small groups, to allow for collaborative learning, as it would be too challenging to undertake individually. This task will encourage the children to think critically about climate adaptations, as they use their knowledge of the world to infer ways of surviving in extreme conditions. During this task, the children could produce innovative ways of adapting to these climates which do not currently exist in the world. Creativity of this nature should be encouraged!

Hot Desert 	⇒ ⇒ ⇒ ⇒ ⇒	Adaptations
Cold Desert 	⇒ ⇒ ⇒ ⇒ ⇒	Adaptations

- **Individual Activity: Art Trading Cards**

Each child will create a trading card for a desert of their choice, using art materials chosen by the facilitator (e.g., crayons, coloring pencils, oil pastels). Their trading card should draw on knowledge gleaned from the text explored during the lesson (recommended trading cardstock size: 5.8" x 8.3"). It is envisioned that each trading card would provide a snapshot into this habitat type. These trading cards could be displayed collectively to demonstrate the different angles that various children took when approaching this task.

- **Conclusion:** The facilitator will ask the class to collectively identify 10 new facts that were learned during this lesson. Each child will discuss 3 new facts they learned with a partner, and then in small groups. Finally, each group will share their facts at a whole class level. It is envisioned that collectively the class will be able to name 10 new facts that were learned after this discussion. These new facts could be recorded on a whiteboard or chart paper.

Assessment:

- **Questioning:** The students will be asked literal, inferential, and evaluative questions by the facilitator during and after the interactive read-aloud to promote deeper thinking about the text and assess whether the class has developed a coherent understanding of the text.
- **Art Trading Cards:** Examining the students' aesthetic response to the text to evaluate their text comprehension.
- **Graphic Organizer:** The group responses written in the graphic organizer will be a useful assessment tool of the children's understanding of climatic adaptations in desert habitats.
- **10 Fact Round-Up:** This assessment method will be used to conclude the lesson whereby each child will discuss their new learning in pairs/groups and then share this new learning at a whole-class level. Collectively the class will synthesize 10 new facts they learned during the lesson.



Accommodations/Differentiation:

- **Differential Questioning:** Use of higher and lower order questioning (i.e., literal, inferential, and evaluative questions).
- **Wait Time:** Provide extra wait time and language scaffolds/supports for students who need them (e.g., showing pages from the book, sentence starters).
- **Visual Supports:** All students (but especially English language learners) will benefit from pictures accompanying the vocabulary to be learned in the story.
- **Mixed-Ability Groups:** This lesson uses mixed-ability groups to allow for peer support as a way of scaffolding the children's needs in the classroom.
- **Home-School Connection:** It may be helpful to allow English language learners (ELLs) to take home the dual language book either before or after the lesson. It could then be read at home in the child's home language prior to or after class engagement with the text. English language learners would feel more confident in talking about the book in class and would have a deeper understanding of the content if the book is read to them in their home language.
 - If possible, ask the parents of English language learners to record the book being read in one's home language. The book and the recording could then be shared at school so that other students can see and hear some of the home languages spoken by their classmates, deepening their appreciation for language diversity.
 - English language learners should use the QR code in the book to listen to an English recording of the book before class to increase their familiarity with the English vocabulary presented in the text.
- **Open-Ended Tasks:** This lesson includes an open-ended task (art trading cards) which allows children to respond to the text in innovative and creative ways, supported by CAST's Universal Design for Learning Framework.

Additional Resources: These resources will support the facilitator in building their own background knowledge on the topic of deserts. In addition, these resources could be used during independent research time in older elementary grades.

- [Desert Habitat \(nationalgeographic.com\)](https://www.nationalgeographic.com)
- [Desert Facts For Kids | Desert Facts For Kids | DK Find Out](#)
- [desert - Kids | Britannica Kids | Homework Help](#)
- [Desert Biome — kidcyber](#)
- [Fun Desert Facts for Kids - Interesting Information about the Sahara & more \(sciencekids.co.nz\)](#)
- [25 Animals That Live in the Desert - Kid Activities](#)
- [KDE Santa Barbara \(ucsb.edu\)](#)

Appendix A: Loop Card Game

Instructions: Cut out each card individually before use.

START
Question: Who has a definition for endangered ?
Definition: Something that is at risk of becoming extinct.
Question: Who has a definition for species ?
Definition: A group of living things with similar genetic traits.
Question: Who has a definition for nutrients ?
Definition: Important substances found in food.
Question: Who has a definition for roots ?
Definition: A part of a plant (usually underground), which provides support, food and water to the plant.
Question: Who has a definition for radiate ?
Definition: To spread out from the center.
Question: Who has a definition for shrub ?
Definition: A woody plant which is smaller than a tree.
Question: Who has a definition for precipitation ?
Definition: Rain, snow, sleet or hail that falls from the sky to the ground.
END