

Exploring Social Studies: Texas Edition: Grade 3



The following sample pages are included in this download:

- ***Capital Resources and the Economy* Leveled Reader**
- ***Capital Resources and the Economy* Lesson Plan with Corresponding *Under Construction* Primary Source Document (included in lesson plan)**
- ***Deserts* Lesson Plan with Corresponding *Deserts* Photo Card**

Capital Resources and the Economy



Capital resources are used every day! These are tools that make it easier for us to do things. They are part of our economy. The economy helps us get the things that we want and need.



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TCM 18372

Capital Resources and the Economy

Prior

Capital Resources and the Economy



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Library of Congress Cataloging-in-Publication Data

Prior, Jennifer Overend, 1963-
Capital resources and the economy / Jennifer Overend
Prior, Ph.D.
p. cm
Audience: K to Grade 3.
Includes index.
ISBN 978-1-4333-7372-5 (pbk.)
SBN 978-1-4807-5158-3 (ebook)
1. Capital—Juvenile literature.
2. Infrastructure (Economics)—Juvenile literature. I. Title.
HC79.C3P697 2014
332'.041—dc23

2014010588

Teacher Created Materials

5301 Oceanus Drive
Huntington Beach, CA 92649-1030
<http://www.tcmpub.com>

ISBN 978-1-4333-7372-5

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Water is a natural resource.

A hammer is a capital resource.



What Are Capital Resources?

We have many **resources** (REE-sawr-suhz) available to us. A resource is something that we can use. Some of them are **natural resources**. This means that they are found in nature. Water and trees are natural resources. We drink water and use it for many things. We use trees to make houses and paper.

Capital resources are things that people use to make goods and provide services. For example, wood is a natural resource. People can use wood to make a house. But nails are capital resources. People use nails to hold the wood together. We could not build a house without capital resources.

Think about some of the things around you right now. What tools do you think were needed to make your chair? What was used to turn trees into pencils? All of these things are capital resources.

Capital Resources Then and Now

People have always used capital resources. Our **ancient** (EYN-shuhnt) **ancestors** used them. When we dig in the ground where the first humans lived, we find tools. Our ancestors used these tools to hunt animals. These tools were capital resources.

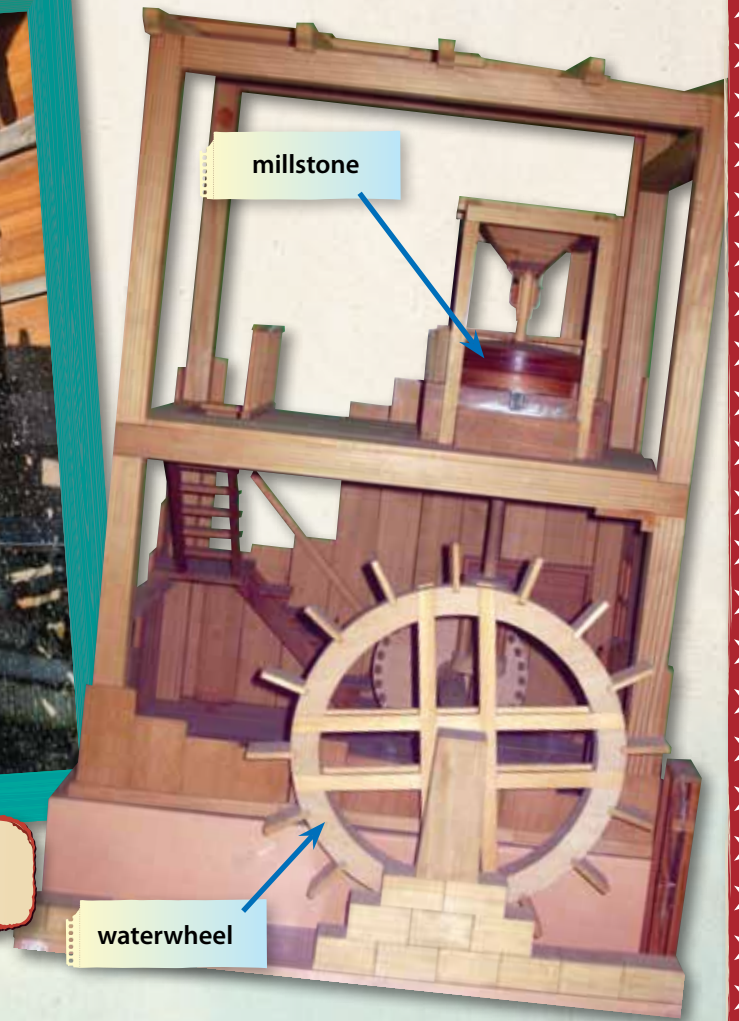
Ancient Resources

Our ancestors made fishhooks, nets, spears, arrowheads, and many other tools to help them hunt and fish.

Our ancestors turned rocks into tools such as arrowheads.



This waterwheel turns wheat into flour.



waterwheel

Later, people found a way to turn water into power. They put a large wheel in a river. The flowing water made the wheel spin. This was called a *waterwheel*. The waterwheel was connected to a **millstone** in a building. When the waterwheel spun, the millstone spun, too. The millstone ground against another large stone. This could be used to turn wheat into flour. Then, people could use the flour to make food, such as bread. The flowing water is a natural resource. But the waterwheel, millstone, and building are capital resources.

We use many different capital resources today. Much of the food we eat comes from nature. Eggs are a natural resource. Chickens lay them on farms. Then, the eggs are brought to stores where people buy them. But most of us do not like to eat raw, or uncooked, eggs. We need to use capital resources before we eat them. The trucks that take the eggs from the farm to the store are capital resources. The frying pans we use to cook the eggs are capital resources, too.

This farmer collects eggs to be brought to stores.



Think about the bricks used to make buildings. Bricks are made of a mixture of natural resources, such as sand, clay, and water. But people need capital resources to make bricks, too. We need tools to shape the bricks and ovens to heat them. All of these items are capital resources. Capital resources help us use natural resources in different ways.

This man uses capital resources to make bricks.





PRIMARY SOURCE READERS
Content and Literacy
in Social Studies

Grade 3

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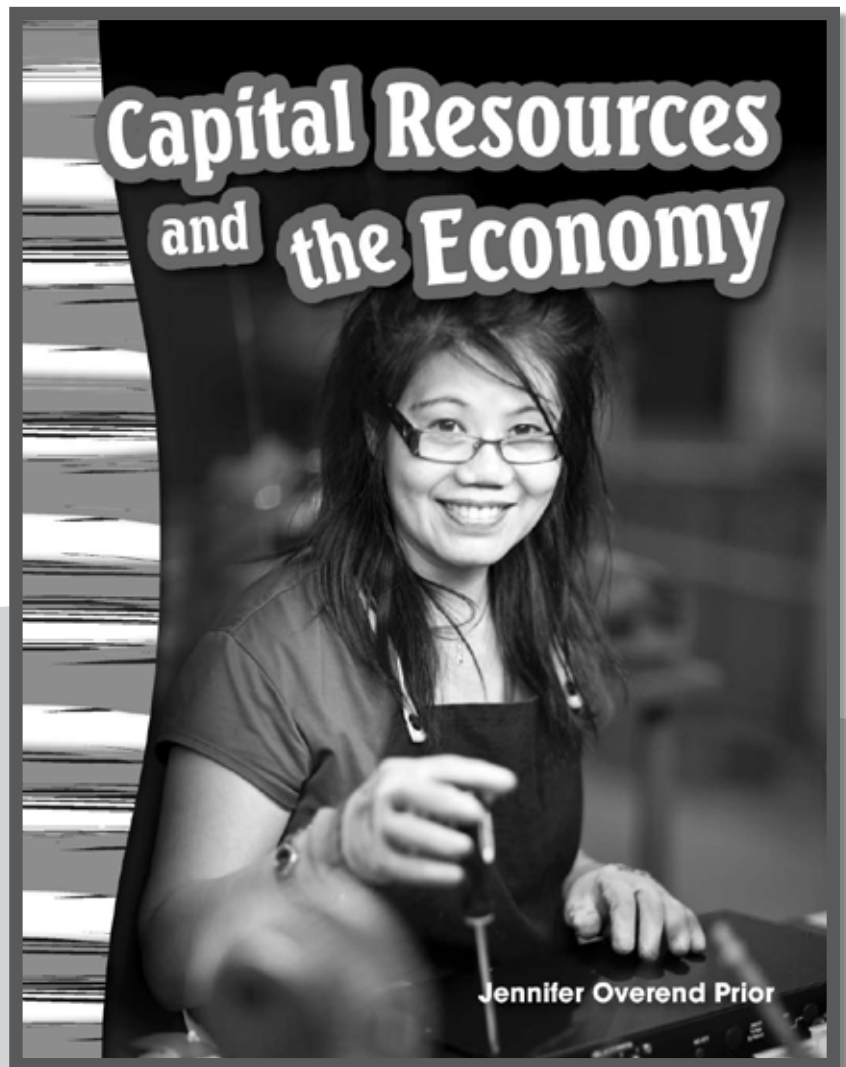
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The Power of Primary Sources

“One really cannot understand any era unless immersed in the lives of the people of the time.” The author Elizabeth Brown Pryor, in discussing the research behind her award-winning biography *Reading the Man: A Portrait of Robert E. Lee Through His Private Letters*, wrote, “Along the way I discovered a treasure trove of unpublished or unused documents in scores of archives and attic trunks. In so doing, I have been a privileged listener as he reveals himself.” Masterfully, Pryor reinterpreted for the world both Lee and his legacy. The key word Pryor uses in her passage is *listener*, for documents do speak to us!

“Listening” to documents is at the core of historical research and understanding. It matters little whether you read a document that dates from the ancient world or from the 21st century. All documents are crafted by human beings and therefore permit those who are holding them to interpret the past and form a construct—the stuff of history. In many ways, it is the historian who re-creates the past with the evidence available to him or her; hence, the study of history remains fluid as the narrative changes over time, with subsequent generations influenced by past generations as well as by any previously unknown primary materials that surface.

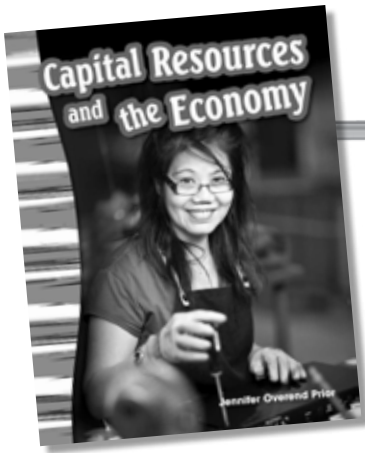
As a history educator for the past 30 years, I have witnessed the dramatic shift in changing interpretations about the past. When I first started teaching, the Civil Rights Movement and the Vietnam War were considered “current events.” There was yet to be any kind of Civil Rights Movement or Vietnam War memory. Now those moments are properly labeled as historical, since we are living more fully in the era of the results of those two events. It is easier in our present state to understand how and why we are where we are because we have the prism of time on our side. An African American has been elected to the presidency, and the Vietnam War has been over for many years. Documents related to those past events now must be reexamined within the new historical contexts.

Young people today are chroniclers of their own lives, and they usually employ means that were unavailable to our forebears through today’s electronic social networking. It is incumbent upon history educators to point out this fact for young people, who are largely unaware that they are recording history as well. Consider, too, that historic sites are now creating Facebook pages for people who lived in those places! There is no telling what researcher of the future might be reading the Facebook pages of your current students.

No matter what person or period students are studying or researching—whether it is Gandhi, Eleanor Roosevelt, the Civil Rights Movement, or the Vietnam War—they are not only tapping into the lives and times of these historical people and places but they are also developing a sense of historical empathy. In the end, that bodes very well for the future.

—James A. Percoco
Award-winning history educator and author

James A. Percoco has taught at West Springfield High School in Springfield, Virginia, since 1980. An award-winning history educator, he is the author of three books, most recently *Summers with Lincoln: Looking for the Man in the Monuments* (Fordham University Press). Percoco serves as history educator-in-residence at American University.



Capital Resources and the Economy



Learning Objectives

Students will:

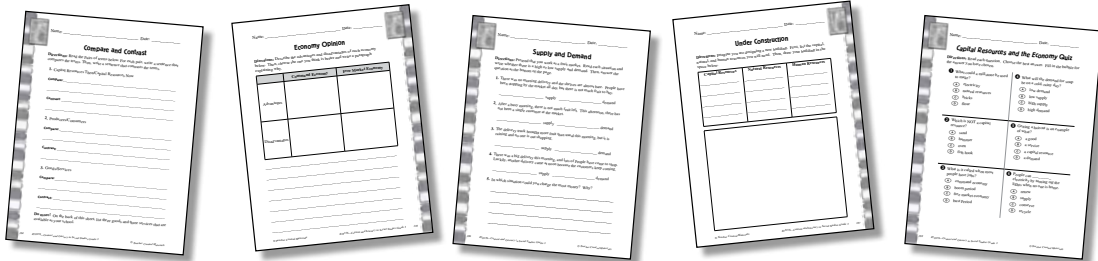
- ▶ compare and contrast sections of the text.
- ▶ write an opinion paragraph about an economic system.
- ▶ understand, identify, and categorize different types of resources.

Standards

- ▶ **Reading:** Make inferences and draw conclusions about an expository text.
- ▶ **Writing:** Create brief compositions that establish a central idea, include supporting sentences, and contain a concluding statement.
- ▶ **Content:** Understand that scarcity of productive resources requires choices that generate opportunity costs.
- ▶ **Language:** Communicate information, ideas, and concepts necessary for academic success in the content area of Social Studies.

Materials

- ▶ *Capital Resources and the Economy* books
- ▶ copies of student reproducibles (pages 8–12)
- ▶ *Under Construction* primary source (page 13)
- ▶ copies of the Student Letter Template (page 16) optional
- ▶ 4–6 everyday objects
- ▶ index cards
- ▶ movie theater time listings from a newspaper or website (optional)



Timeline for the Lesson

	Task	Summary of Student Learning Activities
Day 1	Before Reading (page 4)	Practice comparing and contrasting familiar things.
Day 2	During Reading (page 5)	Compare and contrast topics from the book, and write an opinion paragraph about different types of economies.
Day 3	After Reading (page 6)	Decide whether different situations have a high or low supply and demand.
Day 4	Primary Source Activity (page 7)	Plan the resources needed for the construction of a building.
Day 5	Activities from the Book (pages 28 and 32 in the books)	Make a good for family and friends and identify different types of resources used to make a classroom object.



Capital Resources and the Economy *(cont.)*

Vocabulary Word Bank

- ▶ capital resources
- ▶ conserve
- ▶ demand
- ▶ economy
- ▶ human resources
- ▶ natural resources
- ▶ recycle
- ▶ scarce
- ▶ supply

Before Reading

1. Introductory Activity—Before the lesson, gather 4–6 types of everyday objects, such as a shirt, soccer ball, candy, DVD, cardboard box, and fork. Make sure you include something that is obviously made from a natural resource, such as wood or cotton.

- ▶ Display the objects one at a time and ask students the following discussion questions:
- ▶ What is this made of?
- ▶ How do you think it was made?
- ▶ Who do you think helped make it?
- ▶ Tell students that they will learn more about the economy and how things are made.

2. Vocabulary Activity—Distribute index cards to students and assign them vocabulary words. Have students write their vocabulary word on the index cards. Explain the meaning of each word.

- ▶ On the index card, instruct students to draw a picture to represent the word.
- ▶ Guide the class in writing student-friendly definitions. Have them write these on the other side of their index cards.

3. Prereading Activity—Review the meanings of the words *compare* and *contrast*. Explain that when you compare things you describe how they are the same and when you contrast things you describe how they are different.

- ▶ Provide examples of things students can compare and contrast, such as a cat and a dog.
- ▶ Have students compare and contrast other things. Tell students they will compare and contrast things in the book.

Capital Resources and the Economy *(cont.)*



During Reading

1. Reading Activity—Distribute the *Capital Resources and the Economy* books to students. Conduct a choral read for the first reading of the book.

- ▶ To help keep students engaged, switch the groups of students who are reading aloud. One paragraph or page could be read by boys, then girls, then students at a particular table.
- ▶ Pause at the end of each chapter (or page if necessary) and briefly discuss any important information or clarify concepts.
- ▶ For the second reading of the book, place students in small groups. Review the concept of comparing and contrasting. Distribute copies of the *Compare and Contrast* activity sheet (page 8) to students. Instruct students to take turns reading page spreads aloud in their groups. Have them complete the activity sheet as they read.

2. Writing Activity—Reread pages 18–19 about command and free market economies. Describe each economy and how they are alike and different. Be sure to discuss the example of the price of gum from the text.

- ▶ Distribute copies of the *Economy Opinion* activity sheet (page 9) to students. As a class, work together to complete the table at the top of the activity sheet. Write the advantages and disadvantages of each on the board.
- ▶ Have students write a paragraph stating which type of economy they think is best and why.
- ▶ Work with **below-level learners** and **English language learners** to outline their paragraphs before they begin writing.



Capital Resources and the Economy *(cont.)*

After Reading

1. Vocabulary Activity—Play Charades to review the vocabulary words. Divide the class into two teams. Give a student from the first team a vocabulary word. Have him or her act out the word without any words or noise. If his or her team guesses the word, reward them with a point.

- ▶ Have teams take turns until all vocabulary words have been reviewed.
- ▶ To extend the game, you may wish to include additional words from the book.

2. Reading Activity—Distribute copies of the *Capital Resources and the Economy* books to students. Have them reread pages 17–18 about supply and demand. Have them compare and contrast the ideas of high and low supply and demand. Discuss this concept with students using the following example about movies:

- ▶ Imagine a new movie is coming out, and everyone is excited to see it. When the movie finally comes to the theater, are there many showings or few showings? Why? (*There will be many showings—or high supply—because there is a high demand.*) After the movie has been out in the theater for several weeks, most people have seen it. Now how many showings are there? Why? (*There will be fewer showings—or a low supply—because there is a low demand.*) If time allows, show students a real-life example from a newspaper or online theater website listing movie showings.

- ▶ Distribute copies of the *Supply and Demand* activity sheet (page 10) to students. Review the directions with students and have them complete the activity sheet with a partner.

3. Assessment—A short posttest, *Capital Resources and the Economy Quiz* (page 12), is provided to assess student learning from the book. A document-based assessment is also provided on page 14.

Activities from the Book

- ▶ **List It! Activity**—Read the List It! prompt aloud from page 28 of the *Capital Resources and the Economy* book. Encourage students to make goods at home and share their experiences. A *Student Letter Template* is provided on page 16. You may wish to have students complete the template to explain the assignment to their families.
- ▶ **Your Turn! Activity**—Read the Your Turn! activity aloud from page 32 of the *Capital Resources and the Economy* book. As a class, choose an object from the classroom. On the board, create a triple T-chart labeled *Capital, Natural, and Human resources*. Work together to complete in the chart with the needed resources.

Capital Resources and the Economy *(cont.)*



Primary Source Activity

Historical Background

America's economy was booming in the 1920s. World War I was over and many advancements were being made in automobiles, appliances, and construction. Prior to the 1920s, buildings were seldom over six stories tall because pumps could not get water up to higher floors, and because climbing so many flights of stairs was impractical. With improved water pumps and the inventions of steel and reinforced concrete, taller buildings became more feasible. The concept of the skyscraper was born!

About the Primary Source

This photo shows two construction workers taking a break in Washington, DC, during the summer of 1929. During this time, construction was a very dangerous job. Injuries, losing a limb, and even death were common. The working conditions were very dangerous and there were not many laws protecting construction workers. Today, there are organizations called *labor unions* that protect workers' safety and rights. There are also laws construction sites must follow to help keep the workers safe.



Teaching Suggestions

1. Display the primary source *Under Construction* (on page 13).
2. Ask students the discussion questions below:
 - ▶ When do you think this photograph was taken? What makes you think that?
 - ▶ What job do you think these men have? How do you know?
 - ▶ What kind of resources do you see?
3. Share the historical background information with students.
4. Distribute copies of the *Under Construction* activity sheet (page 11) to students.
 - ▶ Read the directions aloud and allow time for students to complete the activity.
 - ▶ Challenge **above-level learners** to create a "blueprint" drawing of their building.



Name: _____ Date: _____

Compare and Contrast

Directions: Read the pairs of terms below. For each pair, write a sentence that compares the terms. Then, write a sentence that contrasts the terms.

1. Capital Resources Then/Capital Resources Now

Compare: _____

Contrast: _____

2. Producers/Consumers

Compare: _____

Contrast: _____

3. Goods/Services

Compare: _____

Contrast: _____

Do more! On the back of this sheet, list three goods and three services that are available at your school.

Name: _____ Date: _____



Economy Opinion

Directions: Describe the advantages and disadvantages of each economy below. Then, choose the one you think is better and write a paragraph explaining why.

	Command Economy	Free Market Economy
Advantages		
Disadvantages		



Name: _____ Date: _____

Supply and Demand

Directions: Pretend that you work at a fruit market. Read each situation and write whether there is a high or low supply and demand. Then, answer the question at the bottom of the page.

1. There was no morning delivery and the shelves are almost bare. People have been stopping by the market all day, but there is not much fruit to buy.

_____ supply _____ demand

2. After a busy morning, there is not much fruit left. This afternoon, there has not been a single customer at the market.

_____ supply _____ demand

3. The delivery truck brought more fruit than usual this morning, but it is raining and no one is out shopping.

_____ supply _____ demand

4. There was a big delivery this morning, and lots of people have come to shop. Luckily, another delivery came at noon because the customers keep coming.

_____ supply _____ demand

5. In which situation could you charge the most money? Why?

Name: _____ Date: _____



Under Construction

Directions: Imagine you are designing a new building. First, list the capital, natural, and human resources you will need. Then, draw your building in the space below.

Capital Resources	Natural Resources	Human Resources
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____



Name: _____ Date: _____

Capital Resources and the Economy Quiz

Directions: Read each question. Choose the best answer. Fill in the bubble for the answer you have chosen.

- | | |
|---|---|
| <p>1 What could a millstone be used to make?</p> <p><input type="radio"/> (A) electricity</p> <p><input type="radio"/> (B) natural resources</p> <p><input type="radio"/> (C) bricks</p> <p><input type="radio"/> (D) flour</p> | <p>4 What will the demand for soup be on a cold, rainy day?</p> <p><input type="radio"/> (A) low demand</p> <p><input type="radio"/> (B) low supply</p> <p><input type="radio"/> (C) high supply</p> <p><input type="radio"/> (D) high demand</p> |
| <p>2 Which is NOT a capital resource?</p> <p><input type="radio"/> (A) sand</p> <p><input type="radio"/> (B) hammer</p> <p><input type="radio"/> (C) oven</p> <p><input type="radio"/> (D) fish hook</p> | <p>5 Getting a haircut is an example of what?</p> <p><input type="radio"/> (A) a good</p> <p><input type="radio"/> (B) a service</p> <p><input type="radio"/> (C) a capital resource</p> <p><input type="radio"/> (D) a demand</p> |
| <p>3 What is it called when most people have jobs?</p> <p><input type="radio"/> (A) command economy</p> <p><input type="radio"/> (B) boom period</p> <p><input type="radio"/> (C) free market economy</p> <p><input type="radio"/> (D) bust period</p> | <p>6 People can _____ electricity by turning off the lights when no one is home.</p> <p><input type="radio"/> (A) renew</p> <p><input type="radio"/> (B) supply</p> <p><input type="radio"/> (C) conserve</p> <p><input type="radio"/> (D) recycle</p> |

Under Construction



Name: _____ Date: _____

What Is for Dinner?

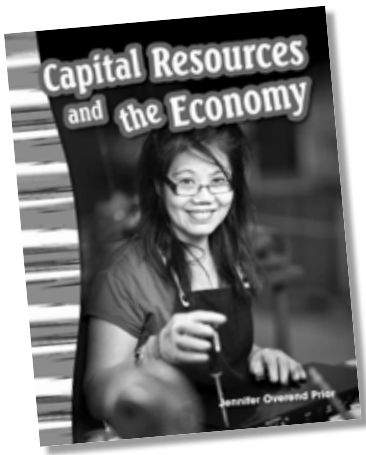
Directions: Look at the photo closely. Then, answer the questions about the photo.



1. What is this family doing? Use evidence from the photo to justify your answer.

2. What is one capital resource in the picture?

3. Is there a high or low supply of food? How can you tell?



Answer Key

Capital Resources and the Economy

page 8—Compare and Contrast

Answers will vary, but examples are:

1. People have always needed capital resources; Then, people used wells for water, now we use plumbing.
2. Producers and consumers are people; Producers make a product and consumers buy a product.
3. Both goods and services cost money; Goods are physical things, and a service is something someone does for another.

Do more! Answers will vary but may include: goods—T-shirt, pencils, food; services—teaching, cleaning, nursing

page 9—Economy Opinion

Answers may vary, but an example is:

	Command Economy	Free Market Economy
Advantages	consumers get the same price everywhere	prices can compete
Disadvantages	producers cannot decide prices for themselves	people might charge an unfair amount

Paragraphs will vary but should explain why one system is better.

page 10—Supply and Demand

1. low supply, high demand
2. low supply, low demand
3. high supply, low demand
4. high supply, high demand
5. You can charge the most on number one. Since a lot of people want fruit, but there is not much to sell, they will pay a higher price.

page 11—Under Construction

Answers will vary, but examples are: capital resources—bulldozer, cement truck, hammer; natural resources—wood, land, oil; human resources—carpenter, plumber, contractor

Drawings will vary, but should show students' planned buildings.

page 12—Capital Resources and the Economy Quiz

1. D 2. A 3. B 4. D 5. B 6. C

Document-Based Assessment

page 14—What Is for Dinner?

1. This family is grocery shopping because the shelves are filled with food.
2. Answers may vary, but examples are: shopping cart; plastic wrap on food; shelves.
3. There is a high supply of food because the shelves are full.

Student Letter Template



_____ (date)

Dear _____, (name)

Today in class we learned about _____

But now I need your help! I need to _____

This will help me learn more about _____

We will share what we learned on _____

Thank you for helping me!

Love,
_____ (your name)



Places and Ecosystems

Standards/Objectives

- Students will know and understand the physical characteristics of places. (National Geography Standard 4.1)
- Students will know and understand the distribution and patterns of ecosystems. (National Geography Standard 8.2)
- **Part A:** Students will understand the physical characteristics of deserts.
- **Part B:** Students will understand the plants associated with a desert ecosystem.

Materials

Deserts photograph card and *Junior Ranger Official Program* document facsimile; Copies of the student reproducibles (pages 20–22); Copies of the *Deserts* graphic organizer (page 88); Copies of the *Junior Ranger Checklist* (checklist.pdf) available on the CD; World map or globe; Paper; Index cards

Part A: The Photograph Card

Discussion Questions

To activate prior learning, ask students: When you think of a desert, what is it like? Ask if any students have ever visited a desert. What is the soil like in a desert? What kinds of plants are in a desert? Explain that a desert is a dry place that receives very little rainfall.

Top Photograph: Show students the photograph of the Australian Outback from the *Deserts* photograph card. Ask a student volunteer to point out Australia on a world map or globe. Allow students a few moments to study the photograph, and then ask the following questions:

- What kind of place is this? How can you tell?
- What kind of soil does the photograph show?
- What kinds of plants do you see in this photograph?

Bottom Photograph: Show students the photograph of Socotra Island in Yemen from the *Deserts* photograph card. Ask a student volunteer to point out Yemen on a globe or world map. Allow students a few moments to study the photograph, and then ask the following questions:

- How is this desert different from the desert in the first photograph?
- What kinds of plants are growing here? What is the soil like?
- What clues can you find about the amount of rain that falls here?

Using the Primary Source

1. Have students sit around you on the floor or at a table. Show them the photographs from the photograph card, one at a time. Remind students that all living things, including plants, need water to survive. Ask if they have ever had a houseplant that they forgot to water. Ask students what happened to the plant.
2. Read the background information from the back of the photograph card to the class. If you prefer, you can give students copies of *Deserts Here and There* (page 20), which contains both the photographs and the student background information.

Places and Ecosystems *(cont.)*

Part A: The Photograph Card *(cont.)*

Using the Primary Source *(cont.)*

3. Then, share information from the background information for the teacher, *Desert Essentials* (page 18), with students.
4. As a class, work together to create a list of adjectives that describe a desert. Remind students that adjectives are describing words like *hot, cold, big, small*, etc. Keep the list on the board. Then, have each student choose one adjective and use it to write a sentence about a desert.
5. Next, on the board, draw a graphic organizer like the one on the back of the photograph card. Show students how to fill out the graphic organizer. Then distribute copies of the graphic organizer (page 88) to students to fill out independently.

Part B: The Facsimile

Discussion Questions

- Who do you think this program was made for?
- Why are pictures of plants included in this program?
- What do these plants have in common?

Using the Primary Source

1. Prior to students entering the classroom, print copies of the *Junior Ranger Checklist* (checklist.pdf). Cut out all the plants from *one* copy of the checklist and hide them around the classroom. The other copies will be distributed to student pairs later in the lesson.
2. Begin the lesson by asking students if they have ever visited a national park. Tell students that the National Park Service takes care of natural places around the country so that people can visit them. Explain that they give visitors brochures or programs to help them enjoy their visits.
3. Display the *Junior Ranger Official Program* document facsimile for students. Then, ask students the discussion questions listed above. Explain that this program or guide is from the Joshua Tree National Park, which is located in California. Show them where the park is located using a world map or globe. Then, distribute copies of *Desert Plants* (page 21) to students and read the information aloud.
4. Next, read off the names of the plants listed for students. Tell students that these plants are hidden around the classroom. Place students in pairs and distribute a copy of the checklist to each pair. Have the pairs find the plants on the list, checking them off as they find them. Once they have found all the plants, have the pairs pick their favorite plant and research it. Have each pair write one fact about their plants on an index card. Have each pair share their fact with the class.

Places and Ecosystems *(cont.)*

Part B: The Facsimile *(cont.)*

Using the Primary Source *(cont.)*

5. Next, ask students how they think these plants are able to survive in the harsh desert environment. Use knowledge gained from the background information for the teacher, *Desert Vegetation* (page 19), to help students fill in any gaps.

Part C: Connecting to Primary Sources

Home-School Connection

- Distribute copies of the *Deserts Home-School Connection Letter* (page 22) to students. Explain the assignment and answer any questions. Have each student fill in the date and name at the top of the letter and sign it. On the day the assignment is due, connect what the class has learned to the concept that if moisture is not added to soil through precipitation, the soil will become dry (desert).

Content-Area Connections

- **Mathematics**—Measure the amount of precipitation that your area receives. Talk about variations in the amount of precipitation over a period of a week, month, or year, and how it affects the vegetation of the location.
- **Science**—Place two potted plants, one a desert plant and one a plant from a humid climate, on a classroom windowsill. Do not water the plants, but do finish the experiment if either looks as if it is going to die. After several days, have students observe the plants. Help them understand that the desert plant can survive longer without being watered, because it has developed adaptations to help it survive in drier environments.
- **Art**—Find copies of desert paintings by the artist Georgia O’Keefe. Ask students to describe how the paintings make them feel about deserts. Then, have students paint their own desert landscape pictures.
- **Social Studies**—Locate desert regions throughout the world with the class. Then, on a world map, label the continents where deserts are found so students can clearly see them. Then, have students record the names of those deserts on their own copies of a world map.
- **Language Arts**—Have students write a travel guide for early desert explorers. The book should include what the travelers will encounter in the desert and how they will meet their needs while traveling.

Read-Aloud Titles

- *The Desert Is My Mother/El desierto es mi madre* by Pat Mora
- *I Live in the Desert/Vivo en el desierto* by Gini Holland

Desert Essentials

Photograph Background Information for the Teacher

Desert Climates

Deserts are areas of dry land that receive less than 10 inches (25 cm) of rainfall annually. Specifically, deserts receive less water from rainfall than the amount of water that they lose through evaporation and transpiration (water used by plants). Together, these two methods of water loss are called *evapotranspiration*.

People think of deserts as hot places, but deserts can also be cool. There are two main types of deserts: hot and dry deserts, and cold deserts. Both hot and dry deserts, as well as cold deserts, have a variety of plants and animals. Desert animals have adapted to the harsher climates. The animals living in hot and dry deserts must be able to burrow underground in order to stay cool. The same is true for cold-desert animals. They too burrow underground to survive the cold elements. Plants in hot and dry deserts are typically short shrubs or trees, while mosses can be found in cold deserts. Many people also live in deserts. In 2010, one-sixth of the Earth's population, over a billion people, lived in desert locations.

Desert Locations

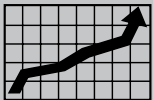
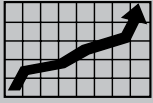
Deserts cover about one-fifth of Earth's land surface. Deserts are found in many parts of the world. However, most of the hot and dry deserts are found near the Tropic of Cancer and the Tropic of Capricorn. Cold deserts are found in the Arctic region. The largest hot desert in the world is the Sahara Desert, located in Africa. This desert's temperatures can reach over 120 degrees Fahrenheit (55 degrees Celsius). Antarctica, a cold desert, is the world's largest desert.

The Australian Outback

The first photograph was taken in the outback of central Australia. The term *outback* is used to describe areas of Australia that are sparsely populated. The Outback covers most of Australia's interior, as well as much of northern and northwest Australia. The Outback is very inhospitable, with extreme temperatures and infrequent rain. Temperatures in the Outback can range from 15–120 degrees Fahrenheit (–10 to 50 degrees Celsius). Plants are widely spaced because they need room for their wide, shallow root systems. These plants often contain their own oils to slow down the process of evaporation.

Socotra Island Desert

The second photograph was taken on Socotra Island, off the coast of Yemen. The island is a largely untouched desert, and hosts several species of rare plants that are found nowhere else on Earth. One such species is the Dragon Blood Tree, shown on the right in the foreground of the photograph. Though unique, the island's plants share many of the same adaptations found in other desert vegetation. Plants grow far apart, have stout bodies to retain water, and have large root systems.



Desert Vegetation

Facsimile Background Information for the Teacher

Desert Plants

Most deserts are not barren sand dunes. Instead, they support a wide array of diverse life. Desert plants have developed specific adaptations for surviving with little water. Hearty exteriors defend against water loss. The spines on cactus plants, for example, prevent animals from taking water from the plant. Cacti also have a waxy outer membrane, which keeps water from evaporating. Their thick stems provide storage for the infrequent rainwater. They also have very little surface area, so that water does not evaporate through their skin as quickly. Desert plants' root systems are also well suited to the dry environment. Some spread out horizontally near the surface of the ground to gather water over a wide area after infrequent rains. Others grow deep to tap water from naturally occurring underground wells. Desert plants tend to be widely spaced, since there is enough water for only a few plants in one location. They also flower quickly after a rain so that they may immediately spread seeds.

National Parks

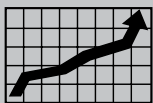
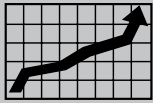
The first idea to preserve areas of land across the United States began in 1872 in Yellowstone National Park. This idea spread rapidly. Today, there are over 450 national parks, monuments, or other historically significant areas of the United States being protected by the government. In 1906, the Antiquities Act was established by President Theodore Roosevelt to protect land in the Western United States. Ten years later, in 1916, the National Park Service was created by President Woodrow Wilson. He established the service to protect and preserve important landforms and monuments in the United States. The National Park Service oversees national parks, cemeteries, and monuments, making sure they are preserved and protected.

Joshua Tree National Park

The Joshua Tree National Park was declared a national monument by President Franklin D. Roosevelt in 1936. Roosevelt created a proclamation that protected this part of the desert. Almost 60 years later, in 1994, the California Desert Protection Act made the area a national park. The park is located in southern California. Spanning over 800,000 acres (323,749 hectares), it houses two large deserts: the Colorado Desert and the Mojave Desert. The arid and dry Colorado Desert sits at a lower elevation, while the Mojave Desert sits higher, giving way to cooler temperatures and differing vegetation.

Desert Plants in Joshua Tree

Joshua Tree National Park hosts a variety of desert plants. The creosote bush is abundant in the eastern area. The ocotillo cactus and the cholla cactus also call this part of the park their home. These cacti need dry soil and rocky slopes to grow. The Mojave Desert's wet and cooler climate makes the perfect environment for the Joshua Trees, which are spread throughout the western half of the park.



Deserts Here and There

Source: Shutterstock, Inc.



The Australian Outback

Socotra Island, Yemen



Source: Dreamstime

Deserts are dry places. They have very little water. A desert gets less than 10 inches (25 cm) of rain each year.

Deserts look different. Some deserts have dunes. Dunes are hills made of sand. Other deserts have rocks and plants.

Most people think that deserts are hot all the time. But, deserts can be hot and cold. Some deserts get hot during the day and cold at night. Other deserts are cold all year long. Did you know that Antarctica is a desert?

Only special plants can live in deserts. They have to live without food and water for a long time. They have to survive the heat. They also have to survive the cold.

Desert Plants

Plant Sketch
 Desert plants have many different adaptations to survive the summer heat. Some plants store water. Some have little white hairs on their leaves or white spines to reflect heat from the sun's rays. Other plants have hairs, spines, or leaves that provide shade for their stems. Still others have a waxy coating on their stems and leaves to prevent water loss. Draw plants that you find with these adaptations. You can use a plant guide or ask a ranger to help identify what you drew so you can label your sketches. Remember not to pick any plants inside the park!

Desert Shopping
 Walk through a natural area that has native plants. Imagine that you are an American Indian child living in this desert area and your parents are teaching you to be a skilled hunter and gatherer. They give you the list below of items that your family needs. Look closely at the things around you. Draw pictures in the boxes below of what you would bring back.

Something to grind seeds with. Plant with fibers for basket-making.

A sharp point for a sewing needle. Straight sticks for arrow-making.

This plant stores water. This plant has a waxy coating.

This plant reflects sunlight. This plant provides its own shade.

Plant Checklist
 Check off the plants you have seen.

- Scrub Oak
- Beavertail Cactus
- Cholla
- Brittlebush
- Joshua Tree
- Sacred Datura
- Creosote Bush
- Cholla Cactus
- Mojave Yucca
- California Fan Palm
- Juniper
- Barrel Cactus

JOSHUA TREE NATIONAL PARK
 Official Program and Activity Booklet

Written by the Education Staff of Joshua Tree National Park
 Graphic design and illustration by Christine Elder

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Printed in 2010

JUNIOR RANGER
 NATIONAL PARK SERVICE

Source: National Park Service

Junior Ranger Official Program

Have you ever been to a national park in the United States? A national park is a special place. People come from all over the world to see these parks.

Joshua Tree is a national park in California. It is in the Mojave Desert. Many plants and animals live there. The park is named for the Joshua trees that grow there. They have spines and white flowers.

The park has a program for children. It is called Junior Rangers. It teaches children about the desert. When they visit, children get the booklet shown here. It tells all about the park. It tells about the plants that live in the desert. It has lots of pictures. There are fun games, too. Would you like to visit this national park?

Deserts

Home-School Connection Letter

(date)

Dear _____,

I am learning about deserts at school. Deserts are places that get very little rain. Only certain kinds of plants can live there.

I would like to do an experiment to see how soil in deserts gets so dry. I will need two cups that are the same size. I would like to fill each cup with soil or dirt and add an equal amount of water to each soil sample in order to make them both very wet.

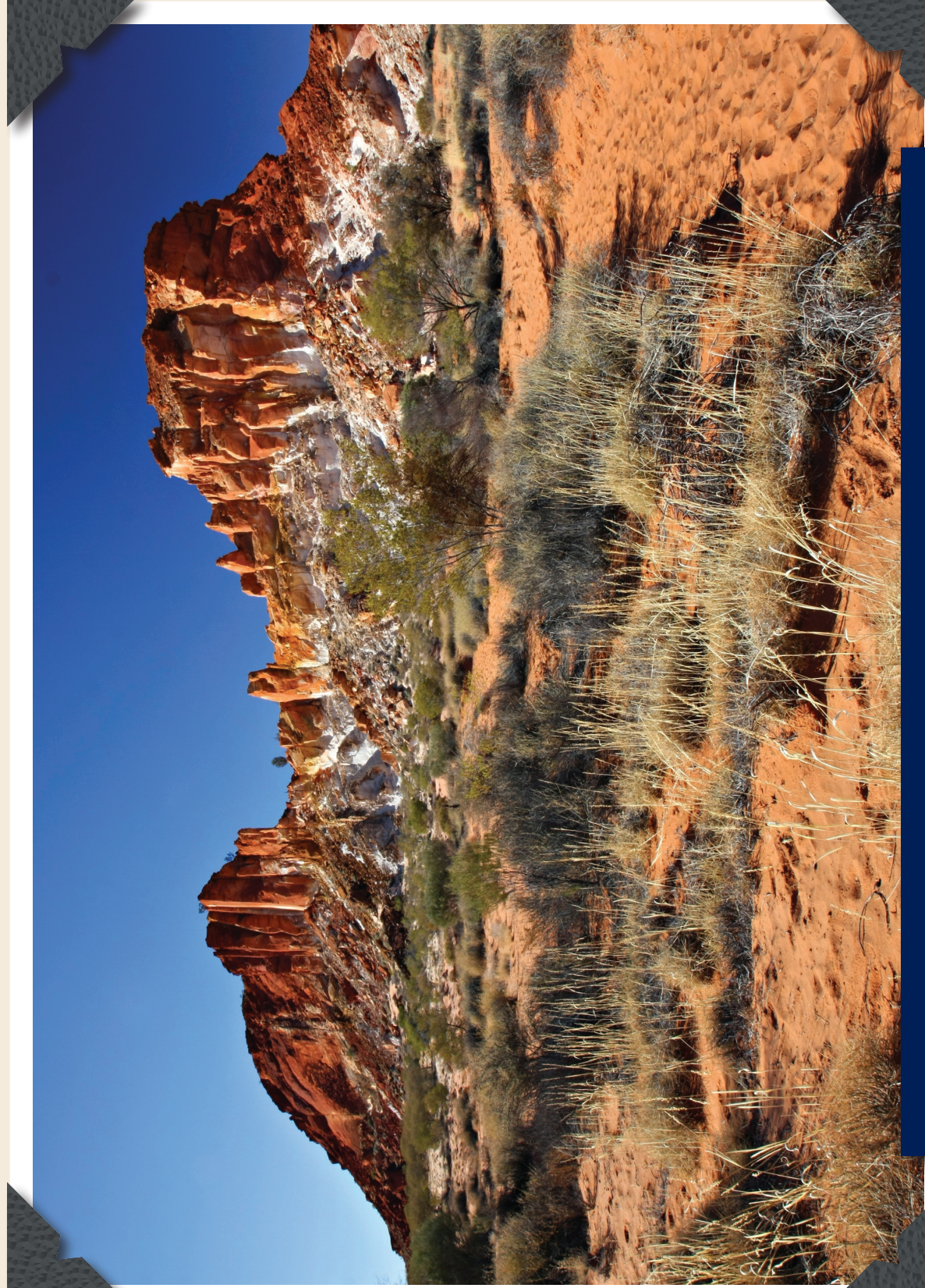
I will keep one cup inside away from the sun and set one cup outside where it will be in the sun (or safely near a heat source if it is winter time). After one day, I will examine the soil in each cup to see how moist it is. I will check them again after two days and share my results with my class.

I will share what I learn with the class on _____.

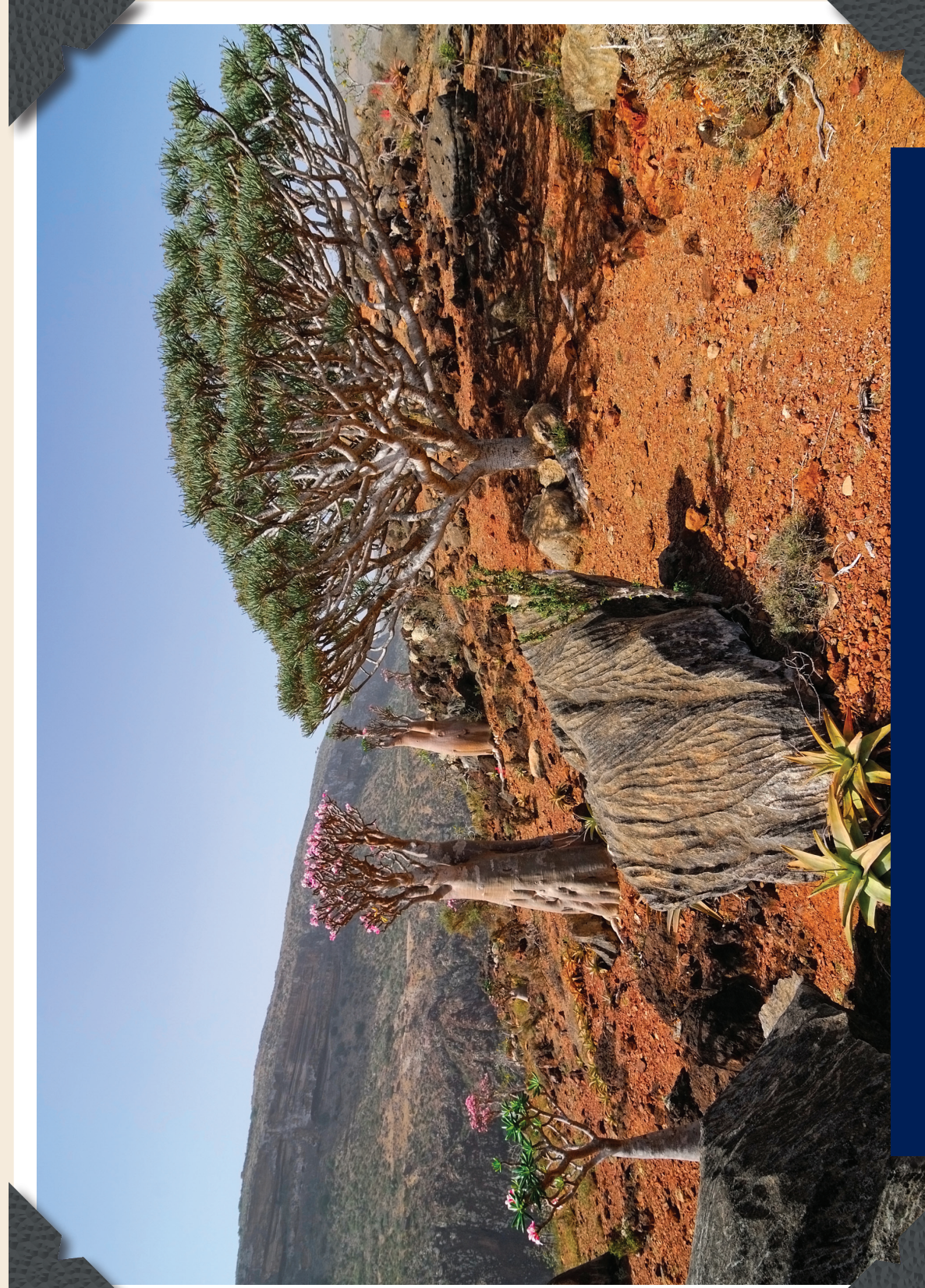
Thank you for helping me with this project.

Love,

Deserts



This is the Australian Outback.



This is Socotra Island in Yemen.

Deserts

Showing What You Know

Directions: Fill in the squares below to show what you know about deserts.

Deserts	This means . . .
Draw a picture.	Write a sentence.

Deserts Here and There

Deserts are dry places. They have very little water. A desert gets less than 10 inches (25 cm) of rain each year.

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Only special plants can live in deserts. They have to live without food and water for a long time. They have to survive the heat. They also have to survive the cold.

Geography Challenge

There is one continent in the world that has no major deserts. Can you find out which continent it is? Draw a picture of that continent. Then write a sentence about that continent.