The Voyageur Experience in Global Geography

Teacher's Guide

Agency for Instructional Technology

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In 1989 the Agency for Instructional Technology developed and produced *Global Geography,* a 10-video series that presented thematic issues within major regions of the world. Nearly all the states and the Canadian provinces participated in its development on a cost share basis. It became one of the most widely used video series in U.S. and Canadian schools. It is now 13 years later and the need for high-quality, standards-driven, multimedia is as great as ever. *Global Geography* met a huge need for thematically aligned, regional geography on video in 1989. A standards-driven *Voyageur Experience in Global Geography* will benefit geography classrooms through media for the coming decade plus.

Prof. Joseph P. Stoltman
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Contents

Welcome to *The Voyageur Experience in Global Geography*

The Voyageur Experience in Global Geography is a video series that helps students understand lessons in geography, and introduces them to the global issues that have had an impact on countries around the world. Each lesson consists of a 25-minute video program along with accompanying printed material to facilitate classroom activities.

The Voyageur Experience in Global Geography video series is based on students' explorations of world regions and the issues facing that region. The students explore and investigate these issues with the objective of answering key questions surrounding those issues.

Components of the Program

Videotapes

The videotapes in your kit contain ten lessons, or video programs. Each video program includes closed captioning.

Teacher's Guide

This is your guide to using the series. The following materials are included:

- Geographical information and introduction
- Key questions and answers
- Presentation synopsis, with standards and objectives
- Before-viewing teaching options, and while- and post-viewing discussion questions
- Lesson reinforcement and extension activities
- List of supplementary materials
- Vocabulary and key question handout

Scripts

You can find the closed captioning scripts for these programs at the World Geography ClassZone Web site: www.classzone.com.

Using *The Voyageur Experience in Global Geography* in the Classroom

The Voyageur Experience in Global Geography is designed to supplement and enhance your teaching of world geography. When you wish to use a video, the following procedures will assist you.

Previewing

You may preview the video by watching it or by reading the Location, Introduction, and Synopsis sections in this Teacher's Guide. Then decide when and how you will use it in your geography lesson.

Before viewing the video with your students, you may wish to assign one of the Before Viewing activities to help familiarize students with the country or the issues that will be discussed.

Viewing

Encourage students to be active viewers and to write down questions and impressions as they watch the video. Consider letting them view the video a second time, particularly if you want them to reconsider a scene or study a particular image. The While Viewing portion of this Teacher's Guide can help you provide a more interactive viewing experience and facilitate discussion.

Discussion

The Teacher's Guide provides numerous opportunities for discussion before, during, and after viewing. The answers to these questions and the key questions posed at the beginning and end of the video are provided in the After Viewing section.

Extension Activities

Projects for enrichment and ideas for extending the lesson are also provided. Students are encouraged to explore local geography, complete a cross-curricular activity in math, science, or literature; or make global connections—all with the objective of furthering the lesson.

Duplication Masters

For each video program, there are two duplication masters: Key Terms, Names, and Concepts, which defines the terminology used in the video; and Key Questions, which enables students to take notes on the main ideas of each program.

Resources

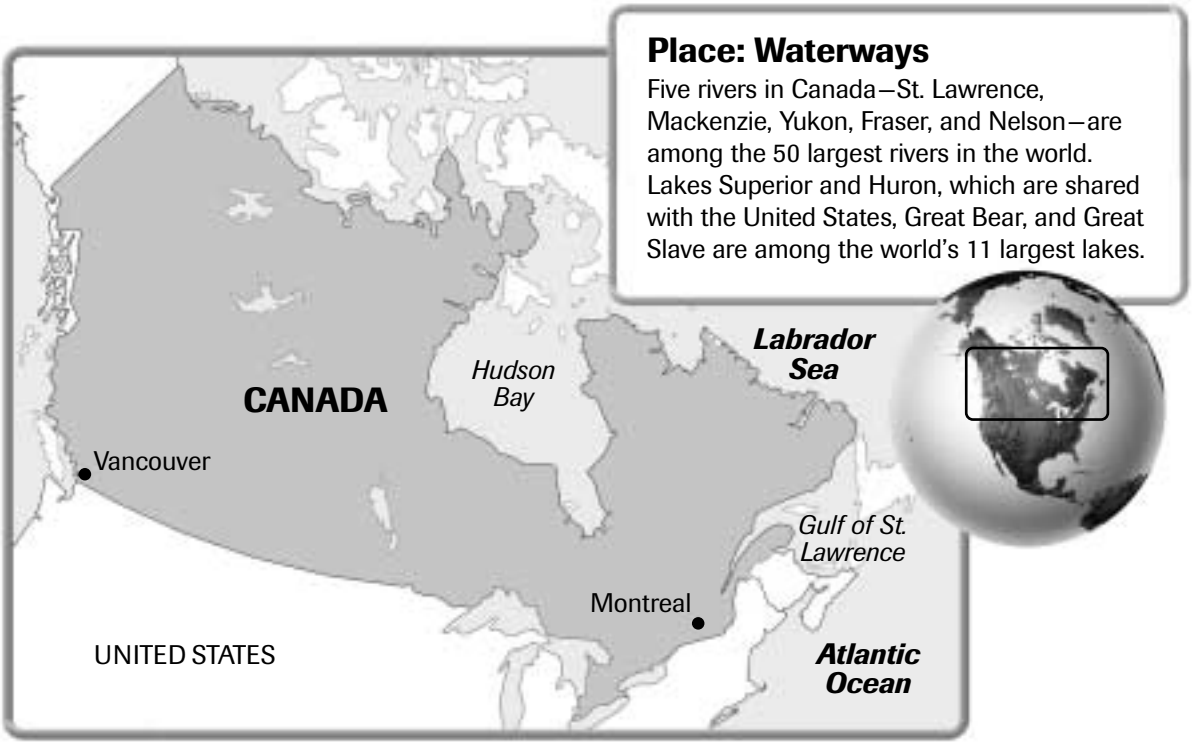
If you or your students want to explore the subject matter further, refer to the annotated list of related books, articles, Web sites, and other supplementary materials.

The Voyageur Experience in Global Geography Video Matrix

Region	Case Study & Topic	Missions	Key Questions
Canada	A Diverse Culture	• Experience the variety of Canadian cultures through observation, interviews, and cultural activities. • Research why and how people immigrated to Canada. • Evaluate conflicts between various cultures in Canada. • Study western Canada's fishing industry and its importance to the country's immigration history. • Investigate how hockey draws Canadians together.	• What are the different cultures of Canada? • What role has language played in unifying or dividing Canadian society? • How has Canada been affected by immigration over the last century? • What factors pushed people away from their native lands and pulled them to Canada? • What conflicts have emerged as a result of immigration? • How have the conflicts been addressed?
Costa Rica	Ecotourism and Economic Development	• Explore a cloud forest in Monteverde to research its vegetation's unique watering system. • Research the concept of ecotourism with local experts. • Experience ecotourism during a visit to a remote rain forest resort. • Travel to banana and coffee plantations to learn about sustainable economic development.	• What are Costa Rica's major exports, and what do they mean to its economy? • What is ecotourism, and why is it important to Costa Rica? • What is the real state of the tropical rain forests in Costa Rica and throughout the world? • What is being done to preserve rain forest ecosystems? • Can people and natural ecosystems coexist?
Greece	Urbanization and the Environment	• Explore ancient cities; experience the appeal of today's cities. • Research the impact of rapid transit on a city's environment; study Athens' new subway system. • Survey the impact of air pollution on Athens' ancient sites. • Discover steps being taken to reduce pollution.	• Why do cities appear where they do? • What draws people to cities? • What must cities do to prosper and survive? • How do cities affect their surrounding environment?
Italy	Natural Hazards and Disasters	• Research the Arno River's history of flooding. • Discover the steps being taken to control flooding in Italy. • Descend into Mount Vesuvius; discuss the volcano's history and dangers with local experts. • Survey the effects of a volcanic eruption. • Research the precautions being taken to protect people from future eruptions.	• What are natural hazards? • Where do they happen? • How do natural hazards become natural disasters? • Can natural disasters ever be avoided? • Why would people ever live around them? • Does any good ever come from natural disasters?
Russia	Rebuilding a Nation	• Investigate Russia's natural resources. • Spend a day with Russian students to learn about daily life. • Visit Moscow to study its history. • Meet with Russian entrepreneurs to explore the country's economic system. • Visit U.S. Embassy in Moscow for a perspective on Russian environmental issues, natural resources, and the future.	• What are Russia's natural resources and how are they managed? • Why are Russia's natural resources so important? • How has life changed for the Russian people since the early 1990s? • Why did these changes occur? • What does Russia's future look like?

Region	Case Study & Topic	Missions	Key Questions
Kenya	National Identity and Unity	• Learn about Kenya's culture by interviewing Kenyan students. • Research the country's colonial period and its impact on modern Kenya. • Experience Kenya's wildlife and study efforts to preserve it. • Visit local villages to observe lifestyle in relation to Kenya's environment.	• What peoples and cultures make up Kenya today? • What attracted Europeans to Kenya, and how did colonialism affect Kenya? • How important is Kenya's natural wildlife to the country's economy? • How does the Kenyan environment impact lifestyles and cultures?
United Arab Emirates	Oil and Water Resources	• Visit experts to learn about the petroleum industry. • Observe and survey the impact of the oil industry on UAE daily life. • Explore water resource options in a desert nation. • Contrast American and Middle-Eastern cultures by talking with local students. • Participate in a recreational activity unique to deserts.	• How does the scarcity of an important natural resource affect people's daily lives? • How is oil produced, distributed, and used? • How have oil resources affected life in the United Arab Emirates? • Who benefits from oil wealth in the UAE? • How do the policies of the UAE and other governments affect oil resources?
India	Population and Resources	• Explore the changing role of young people and women in India's economy. • Survey the impact of economics on India's culture. • Discuss the relationship of population and resource issues with a Bangalore architect. • Experience the poverty of India by talking to a representative from a nonprofit humanitarian organization.	• How do India's large population and economic development interact? • How is daily life affected by such a large population? • How has India been affected by world economic growth? • What resources does India possess that contribute to its role in a global economy? • What roles do young people and women play in India's economy?
China	Agriculture and Environmental Issues	• Learn Chinese food preparation techniques and help prepare a meal. • Tour farms to study agricultural practices. • Visit the U.S. Embassy in Beijing to research agricultural trade with China. • Study how China's population, its agricultural demands, and growing technology impact the country's environment.	• How does a nation of over 1 billion people feed itself? • How does China produce, manufacture, and distribute food to such a large population? • How did industrialization and technology affect urban and rural cultures and economies? • How does a population this size affect the environment?
Singapore	Industrialization and Migration	• Visit the world's largest seaport and experience its operations. • Tour a leading Singapore manufacturer to understand why industry favors Singapore's location. • Participate in cultural activities to explore Singapore's society. • Study the factors leading to Singapore's economic success. • Experience daily life with local students.	• Who is immigrating to Singapore? Why? • How has immigration affected Singapore? • How did Singapore become an industrial center? • How has industrialization change Singapore? • What is at the heart of Singapore's economic success?

Canada: A Diverse Culture



Location

Canada is a country of tremendous size. It is second only to Russia in square miles, and shares a similar latitudinal extent. Most of Canada is found north of 50° north latitude. Canada is larger than the United States in square miles, but its population is only about 11 percent of the size of the U.S. population.

Thirty-one and one-half million people live in Canada, as compared with 278 million in the United States. The population, however, is mostly concentrated in the southern part of the country. The southern part of Canada has several noteworthy advantages. It has a milder climate. It is closer to economic markets in the United States. The south has trade advantages due to its proximity to well-developed transportation routes. The St. Lawrence Seaway provides access to the Great Lakes for ocean going ships. Shared by Canada and the United States, the Great Lakes region is the heartland of industry in North America and one of three core areas for the Canadian population. Another is Quebec Province, which boasts about 25 percent of the population of Canada. The third population concentration is on the Pacific coast in the greater urban region of Vancouver, British Columbia.

Canada has one of the highest standards of living in the world for its population, which is the result of having a rich supply of many different natural resources. The natural resources, added to the long periods of political and economic stability, and an excellent location relative to the world's major markets give Canada many advantages. Canada has good ports on the east coast for trade with Europe, good ports on the west coast for trade with Asia, and excellent roadway, railway, and waterway connections with the United States.

Introducing Canada

The region of Canada has a long history of human settlement. People are thought to have crossed the land bridge from Siberia to North America about 20,000 to 40,000 years ago. The people who arrived became the First Nations peoples, Inuits, and Native Americans and became widely dispersed throughout North and South America. Despite instances of conflict, many early contacts between Europeans and the First Nations in Canada were peaceful and based on trade.

As long ago as the tenth century, Europeans began coming to the east and Newfoundland. The Nordic people were looking for land to settle and available natural resources. Later, two waves of explorers came from Europe—the fishermen and the fur traders. Fish, such as cod, mackerel, haddock, and redfish, were abundant along Canada's east coast. Fur traders followed the fishermen. Europe had a huge demand for fur to make coats, hats, boots, and other items. The French penetrated the Canadian interior in search of pelts, especially beaver. Companies looking for a water passage as a shortcut to Asia fostered further exploration of northern Canada. This Northwest Passage was never found. However, during its search, much of Hudson Bay and other northern bodies of water were mapped.

Today, Canada's southeast is heavily populated by French, British, and other European cultural backgrounds (especially northern Europeans). A variety of First Nations peoples and Inuit are found throughout Canada. A strong minority of Asian immigrants populates the west coast. Asians migrated to Canada looking for work and to escape war and persecution in their homelands.

Additional resources to introduce Canada could include

- a textbook on the geography of the United States and Canada, such as *The United States and Canada: The Land and the People* (Arthur Getis and Judith Getis)
- a map of the cultural regions of Canada
- a map of the original distribution of First Nations peoples in Canada
- *classzone.com*—select *World Geography* for links, current data, and activities related to Canada

Key Questions

This video, *Canada: A Diverse Culture,* focuses on these key questions:

1. **What are the different cultures of Canada?**
2. **What role has language played in unifying or dividing Canadian society?**
3. **How has Canada been affected by immigration over the last century?**
4. **What factors pushed people away from their native lands and pulled them to Canada?**
5. **What conflicts have emerged as a result of immigration?**
6. **How have the conflicts been addressed?**

Teaching with the Video

Running Time: 25 minutes

Synopsis

Marshella, Nicole, and Mark explore the cultures of Canada. They begin in Montreal, learning about its history and the importance of French language in Quebec. After a white-water trip on the Lachine Rapids, they learn about native peoples. The trio next visits Vancouver, British Columbia, and discovers the different cultures involved in the fishing industry and the conflicts that can result. The group ends its journey with an interview of Asian immigrants and the children of Asian immigrants to Canada.

A list of key terms, names, and concepts covered in this video (page 9) will help familiarize students with important vocabulary.

Standards and Objectives

Canada: A Diverse Culture covers the following objectives and standards.

Objectives

- Learn about the value of a multicultural atmosphere.
- Explore the distribution of Canada's distinct cultures.
- Discuss the potential gains and conflicts related to immigration.
- Chart the paths of people who have recently immigrated to Canada from Asia.
- Develop an understanding of the push-and-pull factors that cause people to leave their homelands and move to a new land.

National Geography Standards

Standard 1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective

Standard 3. How to analyze the spatial organization of people, places, and environments on the Earth's surface

Standard 9. The characteristics, distribution, and migration of human populations on Earth's surface

Standard 10. The characteristics, distribution, and complexity of Earth's cultural mosaics

Standard 12. The processes, patterns, and functions of human settlement

Standard 17. How to apply geography to interpret the past

Before Viewing

Choose one of the following leveled activities. Activity 1 is the easiest; Activity 3 is the most difficult.

1. Engage students in an exploration of their own cultural heritage. Have them interview family members or trace their family tree. What different cultures contributed to their family's lineage? When did their ancestors come to North America? Why did they come? Why do students think their ancestors settled in your area? What traditions do students' families continue to this day?

Be sensitive to those students from nontraditional families. If more appropriate, divide your class into small groups and ask one student from each group to volunteer his or her family to study.

2. Have students identify the various cultures that make up your region. Who founded your town or city? Ask students to design a simple historical time line showing the immigration of people into your region. What influences of these different cultures can students see reflected in your region today? You might suggest that students go on a "taste-testing" adventure to various restaurants in the area that serve ethnic foods. Which foods are most popular in your area? What local festivities honor the different cultures that make up your community? What festivities bring all cultures together?

Students may suggest fireworks on the Fourth of July.

3. Use an atlas or a geography textbook on Canada to identify native peoples and their historical range. Pick one First Nations peoples for each of the following zones: Arctic, Subarctic, Northwest Coast, Plateau, Great Plains, and Northeast. Conduct research to identify the characteristics that made each group unique.

Students will find that many things that identify First Nations peoples involve their looks. Jewelry, hairstyles, beadwork on clothes, and other such features help to distinguish among different groups. Language or physical characteristics define some groups; others are primarily defined by the territory that they inhabited.

More about Canada's Culture

- North central Canada is the site of the largest land claim settlement made in Canada's history. Known as the Nunavut Territory, this area is home to the Inuit, the native people of the Arctic and Subarctic regions of Canada.
- Nunavut means "our land" in the language of the Inuit. This settlement gives the Inuit—sometimes known as Eskimos, a name given to them by early Europeans—a greater voice in the workings of the Canadian government.
- The Nunavut Territory is part of the former Northwest Territories and comprises an area of 772,000 square miles (2 million sq km), which is one-fifth the landmass of Canada.
- The Inuit held their first elections in February 1999. Canada held formal ceremonies to inaugurate the territory on April 1, 1999.

While Viewing

To provide a more interactive viewing experience, pause the video at these points for class discussion.

Pause Viewing 1

Pause the video after the students visit the Lachine Rapids. Ask:

- What characteristics made Montreal an attractive site to build a city?
  The Lachine Rapids prevented navigation of large boats upstream of Montreal, which concentrated people here as a staging area for land travel.
- What are the benefits of promoting a multicultural society?
  Different language, food, and music, for example, can enrich people's lives. Bilingual students say they will have more job opportunities.

Pause Viewing 2

Pause the video after the First Nations segment. Ask:

- How can First Nations peoples preserve their culture through the presentation of traditional music and dance?
  Traditional music and dancing build interest in one's culture; they keep traditions alive for the younger generation.

Pause Viewing 3

Pause the video after the students visit with Doug Suto, the fisherman. Ask:

- What different ethnic groups are involved in the fishing industry of Vancouver?
  Norwegians, Finns, Japanese, Vietnamese, First Nations peoples
- What problems can arise when new immigrants are unaware of local customs or laws?
  First Nations peoples are exempt from many fishing limitations. In some cases, new immigrants or foreign fleets do not know the local rules and customs or feel that the First Nations peoples' exemption is unfair. Misunderstandings and conflicts sometimes are the result of these situations.

After Viewing

Key Questions

The following key questions are the focus of *Canada: A Diverse Culture.* A Key Question handout on page 10 enables students to take notes on possible answers to these questions. Discuss the key questions:

1. What are the different cultures of Canada?

First Nations peoples and the Inuit were the first Canadians. British, French, and those of northern European heritage form the majority today. Many recent immigrants to western Canada have come from Asia.

2. What role has language played in unifying or dividing Canadian society?

Conflict has arisen between the French-speaking minority and the English-speaking majority. (French-speaking people make up about 25 percent of Canada's population.) Language and culture have led to discussions about whether Quebec should secede from Canada. The acceptance of French as a second official language in Canada has been a unifying force.

3. How has Canada been affected by immigration over the last century?

Canada has benefited from new ideas and new workers coming in from other countries. While Canada has a wealth of natural resources, it needs an increasing population to provide for growth in business and industry.

4. What factors pushed people away from their native lands and pulled them to Canada?

Push factors: Political turmoil, war
- *Population growth and pressure*
- *Agricultural changes and Industrial Revolution displacing workers*
- *Religious persecution*

Pull factors: Freedom of religion, speech, lifestyle
- *Industrial growth providing abundant jobs*
- *Resource development providing jobs*
- *Inexpensive farmland*
- *Positive word of mouth and connections with other immigrants*

5. What conflicts have emerged as a result of immigration?

New immigrants do not always understand the local rules and established customs. This can lead to friction between immigrants and those people already living in Canada and working in the same industry. Some established citizens also believe that immigrants saturate the job market and lower wages for all those in the industry.

6. How have the conflicts been addressed?

National acceptance of French as a second official language of Canada has alleviated some of the problems with French-speaking peoples. National programs promoting native art and music help ease many concerns of First Nations peoples. New groups, such as the Vietnamese, have become acclimated to their new surroundings and local laws and customs. The two students interviewed in Montreal commented that dealing with conflicts on a person-to-person basis helps to resolve issues.

Activities

Use these activity options to reinforce the concepts in the video.

Map Activity
Have students research and create a simple time line to identify immigrants who have come to Canada in the last century. Provide a world map and ask students to trace migration for those immigrants. Have them use arrows to point to places that the immigrants would most likely look to settle in Canada. Why would these places be attractive to each segment of the immigrant population?

Ideas in Action
How does the United States compare with Canada with its location and treatment of diverse culture groups? Have students research the Hispanic culture in America. What is the percentage of Hispanic residents in America? Where are their relative numbers the highest?

Debate
Every country has citizens who argue that immigration laws are too lax. They would like to see immigration stopped, or at least limited. Other people feel that immigration is a right preserved by free societies such as Canada and the United States. Divide students into groups to make their best arguments on each side of the issue. What are the negative implications of increased immigration? How does society gain from encouraging immigration? What businesses need immigrants in order to be competitive and survive?

Discussion
Bring in and discuss First Nations and Inuit creation stories. The creation of the earth, animals, and people is a strong theme for stories of the native peoples of Canada. Most of their creation stories are based on power residing with the animals and the earth, leaving people humble in their role on earth. Compare these ideas with Christian creation explanations. Christianity describes a world created for humans, but gives instructions for proper stewardship. Discuss how these stories differ. How are they similar? These perspectives can help explain how the two groups differ in their approach to life's goals and values, especially in regard to the use of natural resources.

Learn more about . . .

- immigration policies of the United States. Is it a simple or difficult process to immigrate to the United States as compared to immigrating to Canada? Do students think the events of September 11, 2001, will influence future immigration policy?
- immigration data by visiting the Census Bureau Web site at: *www.census.gov.* Another good site for information is the Population Reference Bureau at *www.prb.org.*

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Ask students to investigate the reasons why your town or city was established in its present location. Encourage them to think about the story of why the city of Montreal exists in its current location. What physical feature or features in your region may have prompted the settlement of a community? Were there economic or political reasons that may have influenced why your town or city was settled? Why did the settlers stay?

1. Have students use the local library to research historical archive information on the early years surrounding your community.
2. Ask them to write a brief summary of their findings.

Cross-Curricular Activity: Art

Have students research First Nations and Inuit art and handicrafts. In what ways is artistic expression a symbol of different cultures? Are they familiar with totem poles, for example, and the mystical human-earth relationships reflected in the carvings? What purposes do totem poles serve in the culture of these native peoples?

1. Have students create a piece of art that is representative of the First Nations peoples or the Inuit.
2. Ask students to write a brief explanation of the meaning of their artwork.
3. Have students display their art together with the explanation.

Making Global Connections

Historically, people left Europe to emigrate to places such as the United States and Canada. Now, Europe is the immigration destination of some people. Who is going to Europe? What forces are causing them to leave their homeland? What problems are the countries of Europe facing with the waves of immigrants coming to their cities? Is this situation any different from the historic immigration to Canada over the last century?

Have students select two countries in Europe. Ask them to compare the immigration policies of those countries with those of Canada and the United States. How are they similar? How are they different? Based on immigration policies alone, which country would students prefer as an immigration destination?

Name_____ Date _____

Canada: A Diverse Culture

Key Terms, Names, and Concepts

cultural mosaic—a term used to describe a society comprising many different cultural traditions that survive acculturation

emigration—the movement of people away from their homelands and to another place

First Nations and Inuit—the native peoples of Canada

immigration—the movement of people into a country from some other place

Lachine Rapids—the point at the St. Lawrence River where people were forced to leave large boats because of rapids upstream; this staging area for land travel set the site for the city of Montreal

melting pot—a term used to describe the blending of different cultures

multicultural—a term used to describe a society that contains a diversity of cultures; a multicultural society reaps the benefits of diversity but also faces some conflicts between different interest groups

pull factors—the factors that make a place attractive to those who are looking to move

push factors—the factors that make a location unattractive and force people to make the decision to leave for another location

Quebec—the Canadian province that is French in heritage and where French language dominates; French-speaking people are known as Francophones in Canada, while English-speaking people are known as Anglophones; although Quebec has about 25 percent of the population of Canada, it is less than one-sixth of the size of the country

separatist movement—a movement to secede and make a region an independent entity; the question of separation from Canada to become a separate, French-speaking country has been voted upon in Quebec but has failed to win a majority of the vote; this remains an unresolved issue today

Treaty of Paris—the 1763 treaty that ended the nine-year war between the British and the French and Indians

Name_____ Date _____

Canada: A Diverse Culture

Key Questions

1. What are the different cultures of Canada?

_____

_____

2. What role has language played in unifying or dividing Canadian society?

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3. How has Canada been affected by immigration over the last century?

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4. What factors pushed people away from their native lands and pulled them to Canada?

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5. What conflicts have emerged as a result of immigration?

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6. How have the conflicts been addressed?

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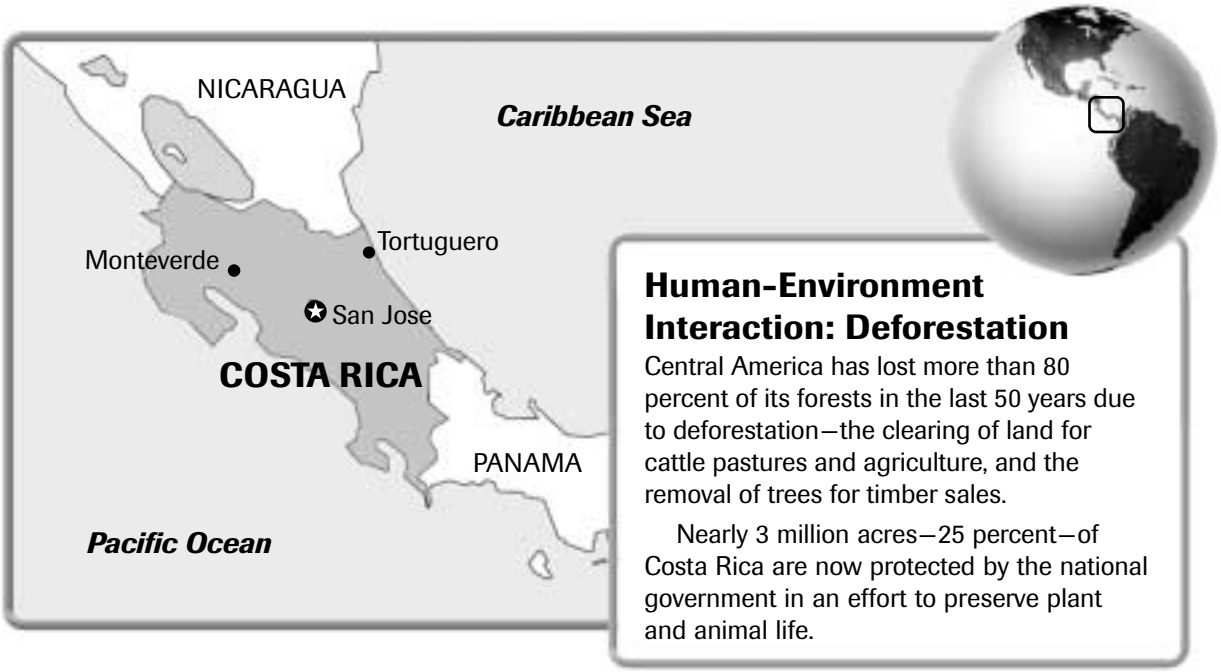
Costa Rica: Ecotourism and Economic Development



Human-Environment Interaction: Deforestation

Central America has lost more than 80 percent of its forests in the last 50 years due to deforestation—the clearing of land for cattle pastures and agriculture, and the removal of trees for timber sales.

Nearly 3 million acres—25 percent—of Costa Rica are now protected by the national government in an effort to preserve plant and animal life.

Location

Costa Rica is located on the isthmus of Central America, bordering the Caribbean Sea and the Pacific Ocean, between Nicaragua and Panama. The country's landscape features such striking contrasts as banana plantations in the steaming lowlands and cloud forests in the high mountains. The capital of San José is located at approximately 10° north latitude and 84° west longitude, designating Costa Rica a tropical country. Land located between the Tropic of Cancer (23.5° north) and the Tropic of Capricorn (23.5° south) is considered tropical.

The economy of Costa Rica is driven by both agriculture and tourism. Crops commonly grown for export include bananas, coffee, and pineapples; cattle are also an export product. In recent years, the country has seen an influx of tourists visiting the beautiful tropical rain forests and cloud forests. This type of tourism is known as ecotourism and is characterized by an interest in visiting natural areas not only for enjoyment but for education. Environmentalists hope the economic return from ecotourism will provide revenue to protect forest resources from being cleared for lumber or burned down to increase agricultural potential.

Tropical rain forests around the globe are rapidly disappearing. While some are being logged for timber products such as exotic woods or paper, the majority of forests are lost to agriculture. As worldwide population increases, developing countries like Costa Rica have seen forest acreage shrink as subsistence farmers and ranchers grow in number, crowding nature out. Fortunately, increases in reforestation and protected areas in all parts of the world are beginning to have a positive impact on rain forest preservation.

Introducing Costa Rica

Costa Rica ranks the highest among Central American countries in literacy and life expectancy rates. The standard of living is also high for the region. Because of its political stability, high education levels, and steady economy, Costa Rica is able to consider options regarding natural resource protection. Unfortunately, many tropical countries are too poverty stricken or war torn to consider environmental conservation a high priority.

Costa Rica contains many unique ecoregions and plant and animal species. These ecoregions attract both tourists and scientists. The land and its resources may be important for the future, as scientists unlock the potential medicinal values of unclassified tropical species. Costa Rica is also a testing ground for the Debt for Nature Swap program. This program eliminates a country's debt in return for the protection of internationally important swaths of nature. If the program succeeds, many other countries may be able to save their rain forests and help preserve the global ecosystem, without suffering short-term losses in economic benefits.

Costa Rica's diverse landscape contains more than rain forests. Although most of Costa Rica's volcanoes are dormant, several active volcanoes still exist, and their fresh minerals enrich the soil on the slopes of the mountains, creating ideal conditions for growing coffee. Land elevation ranges from sea level to more than 10,000 feet above sea level, with tremendous local variation in precipitation, vegetation, and wildlife.

Additional resources to introduce Costa Rica could include

- a world ecoregion map and/or biome map. There is one available at the National Geographic Society's Web site
- *Physical Geography of the Global Environment* (H. J. de Blij and Peter O. Muller)
- a CD of rain forest sounds
- *classzone.com*—select *World Geography* for links, current data, and activities related to Latin America

Key Questions

This video, *Costa Rica: Ecotourism and Economic Development,* focuses on these key questions:

1. **What are Costa Rica's major exports, and what do they mean to its economy?**
2. **What is ecotourism, and why is it important to Costa Rica?**
3. **What is the real state of the tropical rain forests in Costa Rica and throughout the world?**
4. **What is being done to preserve rain forest ecosystems?**
5. **Can people and natural ecosystems really coexist?**

Teaching with the Video

Running Time: 25 minutes

Synopsis

Amy, Sara, Corey, and Casey travel to Costa Rica to learn about the country's efforts to combine its economic system with the protection of its tropical environment. In Monteverde, the group explores a cloud forest, learning about the vegetations' unique watering system. Within Costa Rica's lush forests, they come to understand both the appeal and importance of ecotourism, as they become ecotourists themselves. Their journey takes them to a thriving banana plantation and up the steep mountainside to pick coffee beans. A plane trip to a resort in remote Tortuguero allows the group to view firsthand the benefits and potential environmental impacts of ecotourism.

A list of key terms, names, and concepts covered in this video (page 19) will help familiarize students with important vocabulary.

Standards and Objectives

Costa Rica: Ecotourism and Economic Development covers the following objectives and standards.

Objectives

- Study the physical geography and agriculture of a mountainous tropical country.
- Learn about the global importance of rain forests and the species within that habitat. Students should learn about threats to rain forests, and what steps can be taken to slow deforestation.

National Geography Standards

Standard 1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective

Standard 3. How to analyze the spatial organization of people, places, and environments on Earth's surface

Standard 8. The characteristics and spatial distribution of ecosystems on Earth's surface

Standard 11. The patterns and networks of economic interdependence on Earth's surface

Standard 14. How human actions modify the physical environment

Standard 15. How physical systems affect human systems

Standard 16. The changes that occur in the meaning, use, distribution, and importance of resources

Before Viewing

Choose one of the following leveled activities. Activity one is the easiest; Activity 3 is the most difficult.

1. Use library resources, the Internet, or a world map to identify the ecoregions and biomes of Costa Rica. What other areas of the world share similar ecoregions?

Physical geography may be similar to that of other countries, but students will find that both the species and the cultural impacts vary from place to place. Most areas with ecoregions similar to Costa Rica will be located in the tropics. Students may debate how similar ecoregions should be before adding them to the list.

2. Locate maps and information about agriculture in Costa Rica. Determine the altitude and soil conditions required to grow bananas, coffee, and other major crops.

A world regional geography textbook should describe the zones of altitude and agricultural production. Central American countries have named their altitudinal land use zones. Each has its prominent agricultural crop.

0–2,500 feet, tierra caliente—plantations of sugar and bananas

2,500–6,000 feet, tierra templada—coffee

6,000–12,000 feet, tierra fria—potatoes, barley

12,000–15,000 feet, tierra puna—sheep or llama grazing

over 15,000 feet, tierra helada—snow or ice-covered, no agriculture

3. Ask students to answer these questions:

- Is there ecotourism in your area?
- What endangered or threatened species are found in your region?
- What roles do these species fill in the ecosystem?
- What is the likelihood of success for these endangered species?

Nearly every region of the world has plant or animal species critical to the success of the food chain, or has an endangered species as a symbolic figure or theme in conservation. Students should understand that these threatened species are found throughout the world—often in their own backyard.

More about Ecotourism and Economic Development

- Foreign investors are attracted to Costa Rica because of its political stability and high education levels.
- In addition to agricultural products like coffee and bananas, Costa Rica exports microprocessors, textiles and clothing, construction materials, fertilizer, and various plastic products.
- Ecotourism in tropical areas like Costa Rica involves much more than seeing wildlife in its natural habitat. Such travel plays an important role in educating people about the value of rain forests and their species within the world's ecosystem.
- Since 1960, most of Costa Rica's economic development in agriculture has shifted from the Caribbean coast to the Pacific coast. At one time, the hot lowlands of the Caribbean contained various diseases that infected crops and people, hurting yields and productivity. The abandoned Caribbean plantations are now used by families to grow subsistence crops.

While Viewing

To provide a more interactive viewing experience, pause the video at these points for class discussion.

Pause Viewing 1

Pause the video early in the program, after Corey's first narrative about Costa Rica's landscape. Ask:

- How many different landscape types are found in Costa Rica?
  swamps, rain forests, cloud forests, grasslands, mountains, volcanoes
- What vegetation and animal species would you expect to find in each landscape type?
  Refer to an ecoregion or biome map or Web site.

Pause Viewing 2

Pause the video after the students interview Dr. Robert Matlock Jr. at the La Selva Biological Station. Ask these questions:

- How stable is the rain forest in Costa Rica?
  Some areas are protected, while others are threatened by agricultural expansion.
- What is being done to prevent the loss of the rain forest?
  Local, national, and international efforts are underway, but the forests are still not fully protected; the expansion of ecotourism helps to preserve existing rain forests.
- Will this ecosystem be saved by current efforts?
  Only time will tell. Economic returns will have to come from the forest in order for it to be saved.

Pause Viewing 3

Pause the video after the students visit the coffee plantation. Ask:

- What conditions do coffee plants need to be healthy?
  cool (for tropical), moist climate with fertile, steep volcanic soils at 2,500 feet of altitude
- How old is the coffee industry in Costa Rica?
  more than 200 years old

After Viewing

Key Questions

The following key questions are the focus of *Costa Rica: Ecotourism and Economic Development*. A Key Question handout on page 20 enables students to take notes on possible answers to these questions. Discuss the key questions:

1. What are Costa Rica's major exports, and what do they mean to its economy?

Costa Rica receives most of its income from agriculture. Its biggest exports are coffee and bananas. Pineapples, ornamental plants, and beef are also important products. Conflict arises in many developing countries between economies based on resource use and extraction and resource conservation. The benefits of extraction are the quick profits. However, these methods can cause long-term damage to land and lead to future problems, such as erosion, flooding, and mudslides. Therefore, the agricultural methods used for their major exports will affect the economy in the short- and long-term.

2. What is ecotourism, and why is it important to Costa Rica?

Ecotourism is a type of tourism of which the main goal is to allow visitors to see nature in an unaltered state and learn about a particular region. Ecotourism brings much needed income into the country by promoting the protection of rain forests, cloud forests, and the species that reside in them.

3. What is the real state of the tropical rain forests in Costa Rica and throughout the world?

Rain forests throughout the world are threatened and rapidly shrinking. Most countries with tropical rain forests are currently experiencing rapid population growth. To feed the growing numbers, more land must be cleared for crops or profit. As a result, many rain forest zones are becoming too small to support the variety of life they once maintained. Programs such as reforestation and protected areas, as well as growth in ecotourism, are beginning to play a role in reversing rain forest shrinkage.

4. What is being done to preserve rain forest ecosystems?

Many governments are trying to protect species or tracts of land, but their success is limited and often outweighed by the potential profits of development. Also, efforts to increase education and awareness of environmental issues through ecotourism, for example, and research into potential future economic uses help to preserve and protect rain forest ecosystems.

5. Can people and natural ecosystems really coexist?

Theoretically, yes. However, it is unlikely that people and nature can coexist until international attention is paid to the importance of the global ecological system, including air, water, soil, vegetation, and animal species. Such a change in policy would require governments to raise the priority of nature conservation and recognize the costs of pollution.

Activities

Use these activity options to reinforce the concepts in the video.

Map Activity
Using a detailed map of Costa Rica, have students trace a route through the country from the Caribbean coast to the Pacific coast, using different colors to show a change in vegetation/ecoregion type. Have them draw a legend on the bottom of the map to identify what each color represents and list examples of species found in each zone. What species are found in the lowlands? What species are found in the middle and highlands? Are the species indigenous to the Pacific Coast different from those found on the Caribbean coast? Why?

Ideas in Action
Although Costa Rica's formal economy is supported by agriculture and tourism, it is estimated that nearly half of all transactions within Central and South America occur in an "informal economy." Rather than exchanging money, bartering is the primary system of purchasing items in rural Central and South America. To allow students to better grasp another aspect of Costa Rica's economy, give each student 5–10 small items (pencils, beads, pebbles, pieces of candy, or other inexpensive items) that they will trade for different items held by other students. The purpose is to discover who can get the best trade or the most goods out of the barter system. Give students 5–10 minutes to barter. What personality traits help people succeed in bartering? How does bartering differ from a one-price cash purchase? Describe the strengths and weaknesses of each system.

Oral Presentation
Costa Rica is a diverse society, drawing people from all over the world. Challenge students to explore Costa Rica's earlier civilizations, focusing on the Mayan. When did the Mayas live in Central America? What is known about their culture? Were their agricultural crops similar to what Costa Rica is producing today? Explore the Mayan attitude toward nature. How is this concept seen in present-day Costa Rica? What happened to the Mayan culture?

Compare and Contrast
Students should pick an African or Asian country at a similar latitude to Costa Rica. Have them apply the five key questions from the video to the other country. What similarities can you find? Differences? Issues to research include colonial history, climate and vegetation, natural resources, cash crops, political stability, and education.

Learn more about local environmental information . . .

- Visit your local National Weather Service office or Web site, Natural Resource and Conservation Service office, state conservation Web site, or your state Alliance of Geographic Education Web site.
- The United States Geological Survey maintains a Web site for map information (*www.usgs.gov*).

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Take a field trip or assign an individual trip to a local nature center, state park, or the students' own neighborhood. Have students prepare a report on their observations of wild animal and botanical species important to that area. A county soil survey or local plant identification book will be extremely helpful. Students might interview officials at the nature center or park to determine the health and diversity of the local environment. Depending on location, it might be useful to pick an aquatic ecosystem, such as a local stream or lake. Is the local ecosystem at risk? If so, recommend a restoration strategy.

Cross-Curricular Activity: Music

Help students find selections of traditional and pop music from Central and South America. Are students familiar with the various styles of Latin American music? Can they give examples of Latin influence on American pop music?

Making Global Connections

Map areas around the world that produce coffee and bananas. Ask students where these products originated. How did they get from their source region to where they are grown today?

Name_____ Date _____

Costa Rica: Ecotourism and Economic Development

Key Terms, Names, and Concepts

barter—a system of trading for needed goods rather than paying cash

biodiversity—biological diversity as indicated by numbers of different species of plants and animals

biogeography—the study of the distribution of plants or animals

biome—a generalized zone of vegetation and related animal species, marked by specific climate parameters and physical features

cloud forest—a dense tropical forest that receives its precipitation from the condensation of cloud droplets on trees

deforestation—the action or process of clearing forests; also, the state of having been cleared of forests

ecoregion—a zone defined by its unique plant and animal species, covering a much smaller area with a more particular definition than a biome

ecotourism—a type of tourism that allows visitors to see nature in an unaltered state and promotes education about the value of retaining intact natural ecosystems

rain forest—a forest zone that receives considerable moisture, contains more species, and generates more oxygen per acre than any other type of land cover

reforestation—the process of increasing net forest area over vast regions through natural regeneration or human effort

San José—the capital city of Costa Rica

sustainable—a system or strategy that allows for resources to be used in the future without degradation of the natural environment

tropical deforestation—the process of clearing trees from cloud or rain forests, often to provide new agricultural land, to sell for lumber, or to open land for mineral development

Name_____ Date _____

Costa Rica: Ecotourism and Economic Development

Key Questions

1. What are Costa Rica's major exports, and what do they mean to its economy?

_____

_____

2. What is ecotourism, and why is it important to Costa Rica?

_____

_____

3. What is the real state of the tropical rain forests in Costa Rica and throughout the world?

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4. What is being done to preserve rain forest ecosystems?

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5. Can people and natural ecosystems really coexist?

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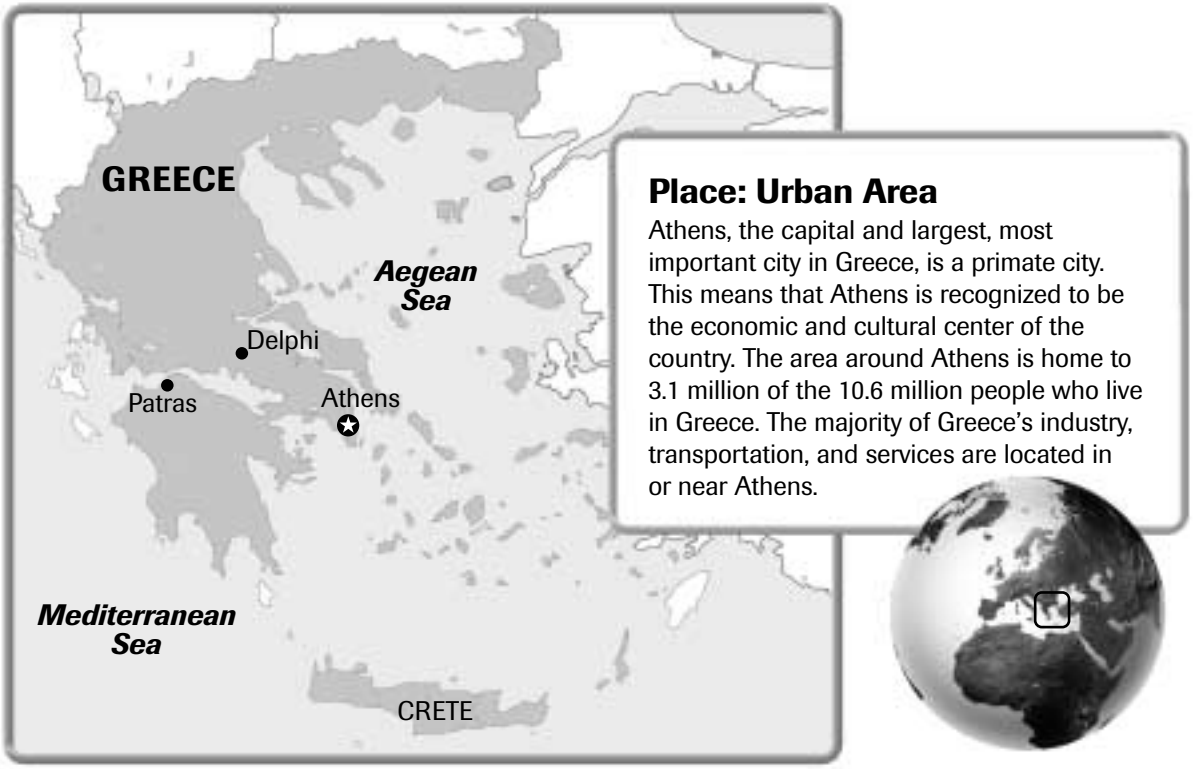
Greece: Urbanization and the Environment



Location

Greece, located at 39° north latitude and 22° east longitude, has reaped the benefits of its location since its beginnings some 3,000 years ago. In ancient times, people were drawn to the area around the Mediterranean Sea in order to take advantage of the pleasant climate. Winters to the north were cold; south of the Mediterranean, in the deserts of Arabia and northern Africa, it was very hot. People also came originally to fish by the water's edge. They used this plentiful food supply to add protein to their diets, while also growing grains, grapes, figs, olives, and other agricultural products. The success of Mediterranean farmers led to surpluses. They soon found that they could trade these surpluses for needed products. Shipping was the means of trade access for Greece, Crete, Troy, Egypt, and other locations near the Mediterranean Sea.

The Greek archipelago includes more than 2,000 islands. They range in size from Crete (more than 3,000 square miles), to tiny rock outcrops in the Cyclades. With a need to transport products and spread information among these islands, the Greeks were logically some of the earliest great shipbuilders. Another reason for Greece's development of maritime trade was the ruggedness of its landscape. Greece is very mountainous. Overland transportation was difficult through the Pindus Mountains or to the north in the Balkans.

Greece has several good ports, and their relative location led to rapid urban development. Athens is at the geographic center of Greece's territory. Its largest port is called Piraeus. It sits on the Bay of Phaleron, an inlet of the Aegean Sea.

Introducing Greece

Early city planners in Greece chose the sites for cities and monuments very carefully. They designed temples to worship the Greek gods and goddesses, stadiums for sports, outdoor amphitheaters for plays and political debates, and marketplaces. Many of these architectural marvels are still standing and still beautiful, a testament to Greece as the cradle of Western Civilization.

Today Greece confronts many challenges. Its capital, Athens, is overcrowded and polluted. It is among the poorest countries in the European Union, with a persistent trade deficit, and it relies heavily on tourism for income. Political conflict with Turkey, its neighbor across the Aegean Sea, diverts important resources and hinders domestic economic development. However, Greek investment and trade exchanged with its Balkan neighbors have recently increased. Today, Greece is the second largest investor in Albania, and the third largest investor in Bulgaria.

The strength of Greece is its agricultural sector. Despite thousands of years of land use, farmers still produce surpluses of Mediterranean crops in almost 30 percent of the country—all because of Greece's ideal climate. Greece is self-sufficient for agricultural produce, and exports grapes, figs, olives, olive oil, citrus, wine, and other products. The agricultural industry employs 20 percent of the population. The Greeks are also trying to improve and showcase Athens as a regional and global center. They are building an infrastructure to ease traffic and allow development to spread out from the center of the city. A new airport and subway system have been built to make travel to and from Athens easier and to reduce automobile emissions in the center of the city, improving air quality.

Additional resources to introduce Greece could include

- an ancient history textbook on the growth and development of the Greek empire
- a classic of Greek literature, such as *The Iliad* or *The Odyssey* by Homer
- a recent article (journal or Internet) on air pollution in Europe, especially the Mediterranean
- *classzone.com*—select *World Geography* for links, current data, and activities related to Europe

Key Questions

This video, *Greece: Urbanization and the Environment,* focuses on these key questions:

1. Why do cities appear where they do?

2. What draws people to cities?

3. What must cities do to prosper and survive?

4. How do cities affect their surrounding environment?

Teaching with the Video

Running Time: 25 minutes

Synopsis

Sailing on an overnight ferry from a port in Italy, Karen, Michael, and Richard travel to Greece to explore the differences between ancient and modern cities and their effects on the environment. Once off the ferry, they tour Greece's cities. The students explore the sites of Patras before traveling to Delphi to study the cultural artifacts of this ancient city. In Athens, the students experience firsthand the blend of old and new. There, they talk with Alex Deloukas about the ongoing rapid transit development and other efforts to control Athens' air pollution and preserve the country's ancient ruins.

A list of key terms, names, and concepts covered in this video (page 29) will help familiarize students with important vocabulary.

Standards and Objectives

Greece: Urbanization and the Environment covers the following objectives and standards.

Objectives

- Discover what qualities contribute to a location evolving into a major city.
- Learn about the causes and potential solutions to urban air pollution.
- Discuss the threats that air pollution poses to people and ancient artifacts.
- Investigate how large cities are handling growth and its resulting effect on the quality of life.
- Use Greece as an example of how cities evolve and change through time.

National Geography Standards

Standard 3. How to analyze the spatial organization of people, places, and environments on Earth's surface

Standard 4. The physical and human characteristics of places

Standard 9. The characteristics, distribution, and migration of human populations on Earth's surface

Standard 12. The processes, patterns, and functions of human settlement

Standard 14. How human actions modify the physical environment

Standard 17. How to apply geography to interpret the past

Before Viewing

Choose one of the following leveled activities. Activity 1 is the easiest; Activity 3 is the most difficult.

1. Use the Internet and other resources to research major cities around the globe and their levels of air pollution. Which of the world's major cities are the most polluted? What kinds of contaminants are present? Are there any trends among those cities?

The world's most polluted cities include Mexico City, Jakarta, Beijing, Karachi, Manila, São Paulo, Bombay, New Delhi, Calcutta, Cairo, Shanghai, Seoul, and Los Angeles. The most serious pollutants include particulates, sulfur dioxide, nitrogen oxide, carbon monoxide, ozone, and others. Since the mid-twentieth century, air pollution in the United States and many other industrialized nations has declined. Cities in poorer nations suffer from greater air pollution levels. The gravest air pollution problem in developing countries is indoor cooking and heating.

2. Why was your state capital chosen? What characteristics make a location a good site for a capital? Can you suggest another city that would better represent your state?

Many states had long debates over which town should be the capital. They often changed the capital at least once in order to find a town that was centrally located, growing economically, and that best represented the state.

3. Read about the organization and society of ancient Athens. How does its politics, lifestyle, and daily life compare to an American city today? What aspects of ancient Greece would benefit today's society? What aspects of life have improved?

Athens was a thriving city with plays, musical performances, shopping, sports, politics, and trade. It also had constant conflicts with Persia and other states about naval supremacy, trade, and imperial boundaries. Athens had slaves, and women were considered second-class citizens. The city was organized so everything was within walking distance. Answers will vary about the comparison to American cities. To expand on education issues, ask students to consider the following. Some of the world's greatest scholars were found in ancient Greece. Who benefited from their wisdom? How many people received a formal education?

More about Urbanization and the Environment

The ongoing settlement of land surrounding the Mediterranean Sea has had many negative environmental impacts. The ancient Greeks (like many other cultures) cut down forests to expand cities and farmland and to produce timber for ships and homes. The loss of forest cover caused increased flooding, the erosion of soil, and even a change in the climate. The Mediterranean basin is warmer and drier today than when people first settled there. Evidence from literature, paintings, and science all indicate climate changes in the Mediterranean region.

While Viewing

To provide a more interactive viewing experience, pause the video at these points for discussion.

Pause Viewing 1

Pause the video after the students discuss the importance of water to city location on the ferry ride to Greece. Ask these questions:

- Why do cities develop along water?
  transportation for trade, waste disposal, industrial cooling water, recreation, fresh water, fishing, and access to long-distance travel
- What is the nearest major river or port in your area? Are there any major cities along it? Why or why not?
  Many large cities built for trade and industry are found along large rivers like the Mississippi.

Pause Viewing 2

Pause the video just as the students begin their visit to the Athens metro, after Karen discusses pollution and cities. Ask these questions:

- What are the primary sources of air pollution in Athens?
  automobile emissions, industry, acid rain, and municipal wastes
- How does air pollution affect the ancient ruins?
  Polluted air marks stone monuments and buildings, damaging them over time.

Pause Viewing 3

Pause the video after Karen discusses the mountains of Athens and Santiago, Chile. Ask these questions:

- How can nature make air pollution worse? What can be done about it?
  Cities surrounded by mountains face the threat of temperature inversions. This is a natural, sometimes dangerous, meteorological condition that traps air and pollution in a noncirculating condition. Cities must reduce the concentration of pollution that might build up against the mountain ranges.
- How can nature provide relief from air pollution?
  Cities exposed to frequent winds will find relief from air pollution as the winds dissipate the contaminated air.

After Viewing

Key Questions

The following key questions are the focus of *Greece: Urbanization and the Environment.* A Key Question handout on page 30 enables students to take notes on possible answers to these questions. Discuss the key questions:

1. Why do cities appear where they do?

Human exploration and migration led to the discovery of new places to locate cities. Trade patterns developed shipping routes along coastlines, while trade inland created roads and crossroads, natural sites for settlement. Human interest in resources and colonization often led to the development of cities around major bodies of water. People also build cities as a reflection of their culture. Other cities develop out of religious centers.

2. What draws people to cities?

Location, trade, employment, education, and entertainment all serve their purpose in attracting people to cities. Also as people built cities that reflected their culture, these cultural expressions (theaters, coliseums, architecture, and religious shrines), in turn, drew more people.

3. What must cities do to prosper and survive?

Cities require both growth and planning. A successful city needs to be built with an eye toward growth while still meeting the needs of the current population (e.g., sewage systems and transportation). Historically, cities also required protective locations, as wars often led to both the birth and death of cities. Today, as pollution continues to challenge cities and their inhabitants, the preservation of the environment becomes a key issue of survival.

4. How do cities affect their surrounding environment?

Traffic and industry sometimes become too concentrated for natural air cycles to dilute pollution to comfortable or safe levels. Athens is taking steps to limit air pollution with two strategies. The first strategy is to monitor the air, rerouting traffic when air quality gets bad in a certain part of the city. The other strategy is to build and expand a subway system. The current lines are replacing almost 40,000 car trips a day. The subway system will also allow development to spread out over a larger area.

Activities

Use these activity options to reinforce the concepts in the video.

Theater Activity
Have students perform a Greek play. The ancient Greeks were known for tragedies and comedies. Students should try to imitate the dress worn during the play's time period. Analyze the topic of the play. Is it something that we would consider relevant today? What are the qualities of the characters? What kind of mannerisms do the actors exhibit? What does this development in the theater world tell us about Greek civilization?

Ideas in Action
While acid rain damages monuments in Greece, it also has large-scale implications in other parts of the world. Study the problem of acid rain. How serious is this global problem? What causes acid rain? What is being done to significantly reduce the acid rain threat for the future? Have steps been taken to reclaim landscapes and lakes damaged by acid rain? How can individuals reduce the effects of acid rain? Using what you've learned from your research, contact a professional in the field of acid rain to conduct an interview. Think about what you'd like to learn more about, then write down your questions. After the interview, compare notes with two classmates. Share your findings with the rest of the class. You might want to use a map in your presentation to show the areas of the world of most concern.

Oral Presentation
Greece is promoting the development of a subway to ease traffic pressure in downtown Athens. Have students research various large cities in the United States to learn how they are handling growth and quality of life. Have students explain which proposal they think is the strongest.

Debate
Divide the class into two groups. One group is pro-development and growth; the other advocates stability and limiting growth. Allow students to debate positive and negative aspects of city growth by posing the questions: How big should a city get? What are the long-term implications of the growth of cities, and population in general? Does it make sense to limit the growth of cities? If it makes sense, what factors make it difficult to do?

Learn more about . . .

- urban pollution in Ronald Bailey's *Earth Report 2000: Revisiting the True State of the Planet* (New York: McGraw-Hill, 1999).
- traffic congestion in Athens, Greece, by visiting the National Technical University of Athens' Department of Transportation Planning and Engineering Web site (*www.transport.ntua.gr/map/index.html*).

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Conduct research on the founding of your town. What physical and cultural factors led to its establishment in this particular location? How successful has the site's location been? Success can be determined by the level of growth and economic opportunity found in the city. Most towns were founded for sound reasons based on physical location, such as access to transportation routes, water, and natural resources. Sometimes towns sprang up for cultural or political reasons. Long-term success is often determined by factors not foreseen when the town was founded, such as a change in transportation routes or the exhaustion of natural resources. Natural disasters or wars can also cause the death of a town. Consider these aspects when evaluating your town's success.

Cross-Curricular Activity: Science

The huge number of people living today complicates the study of the human impact on the environment. Have students investigate exponential growth, or the doubling effect. Using Internet or library resources, students should research the growth of human population. In what year do experts predict that human population will be double its present size? What happens as population continues to grow, but resources, including land, remain the same or decrease in availability?

Making Global Connections

Discover more about the founding and development of Greece. Who founded the Greek civilization? Where did they come from before they moved to the Mediterranean region? Who were their primary early trading partners? What products did they buy and sell? What products is Greece known for today? What does the United States import from Greece?

Name_____ Date _____

Greece: Urbanization and the Environment

Key Terms, Names, and Concepts

acropolis—the upper fortified part of an ancient Greek city

agora—the marketplace in ancient Greece

Apollon System—an air quality monitoring system for Athens that helps city planners regulate traffic and pollution concentrations

Aegean Sea—the body of water located between Greece and Turkey

Athens—the capital of Greece

city-state—an autonomous state consisting of a city and surrounding territory

Cyclades—a group of islands included in the Greek archipelago found in the southern Aegean Sea

democracy—government by the people, especially by the rule of the majority

Hippodamos—ancient Greek credited with the invention of formal city planning; according to Aristotle, he invented the division of cities by classes

Oracle of Delphi—a woman selected by priests to serve as a messenger of the gods; in ancient times, people would travel great distances to bring her gifts and to ask for advice

Patras—a city and port in western Greece on the Gulf of Patras

Name_____ Date _____

Greece:
Urbanization and the Environment

Key Questions

1. Why do cities appear where they do?

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2. What draws people to cities?

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3. What must cities do to prosper and survive?

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4. How do cities affect their surrounding environment?

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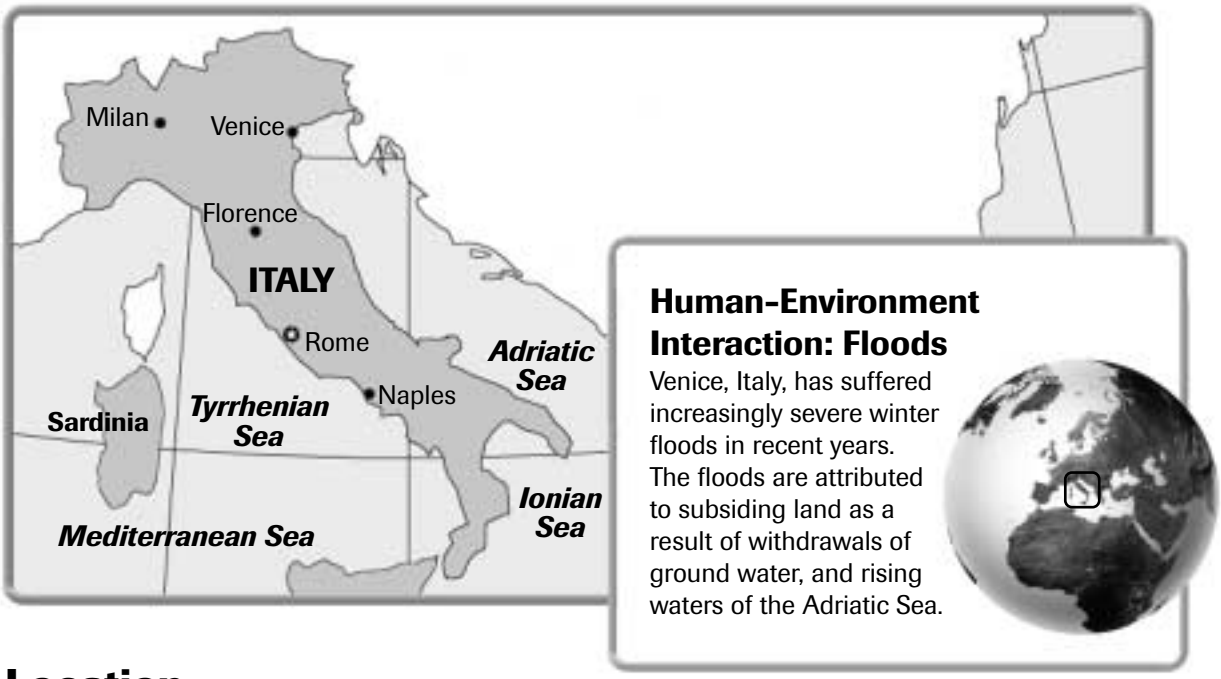
Italy: Natural Hazards and Disasters



Location

Italy is a country with a sense of the past as well as the present. In ancient times, its capital, Rome, was the center of an empire that covered much of Europe, North Africa, and Southwest Asia. Many artifacts of this golden age, such as the Coliseum, remain today.

The physical landscape of Italy is as complex as its cultural landscape. The country stretches from the snowy peaks of the Alps in the north, to the hot, dry, lowlands of the Mediterranean south.

The city of Florence lies in a region of north-central Italy called Tuscany. Tuscany is known for its vineyards, olives, fruits, vegetables (such as artichokes), and grains. Florence is located 43°46' north latitude and 11°13' east longitude. It is an ideal place to study flooding because the city is split by the Arno River. The river is very important to the people of Florence because it supplements the limited groundwater supply during the hot, dry summer. The Arno has a history of flooding the city, and people have made adjustments in recent times to control its flow upstream from Florence.

Naples is one of the ancient cities of Italy. It is a port city in the south, on the Tyrrhenian Sea. The Tyrrhenian is one of many smaller water bodies that collectively make up the Mediterranean Sea. Naples is found at 40°51' north latitude and 14°15' east longitude.

This section of south Italy was influenced and partly built by the eruption of volcanoes, such as Mt. Vesuvius. Mt. Vesuvius constantly vents gases and has erupted as recently as 1944. Natural hazards associated with volcanoes include earthquakes, lava flows, pyroclastic flows, mudflows, and ash deposits.

Introducing Italy

Italy is a perfect place to study natural hazards for several reasons. It is a tectonically active zone, containing earthquakes and volcanoes. It has a long written history, so natural disasters can be studied and tracked back through time. Its civilization has altered the natural landscape tremendously. Some land use changes have increased the threat of natural hazards, such as floods and mudslides. Students will realize how many regions around the world share the same natural threats and make the same environmental mistakes.

In addition to studying the physical characteristics of Italy, students will also enjoy studying the cultural characteristics, such as food. Ask students to find out how and when noodles from China arrived in Italy and when tomatoes came from the Americas. Have students make pasta from scratch, cook it, and add the sauce of their choice. Discuss how the foods of the world have come together to form the modern cuisine of Italy.

Additional resources to introduce Italy could include

- a physical geography textbook, such as *Physical Geography of the Global Environment* (H. J. deBlij and Peter O. Muller) and *Introducing Physical Geography* (Alan Strahler and Arthur Strahler)
- an atlas of Italy
- travel guides from the local bookstore or travel agency
- *classzone.com*—select *World Geography* for links, current data, and activities related to Europe
- an Italian cookbook

Key Questions

This video, *Italy: Natural Hazards and Disasters,* focuses on these key questions:

1. What are natural hazards?

2. Where do they happen?

3. How do natural hazards become natural disasters?

4. Can natural disasters ever be avoided?

5. Why would people ever live around them?

6. Does any good ever come from natural disasters?

Teaching with the Video

Running Time: 23 minutes

Synopsis

Richard, Karen, and Michael travel to Italy to study natural hazards. They talk with experts in Florence who explain the importance of the Arno River and its history of flooding Florence. They travel upstream to see the dam that controls flooding now.

The team then travels to Naples. They see the remnants of Herculaneum. Richard and Karen climb down into Mt. Vesuvius to look at the processes occurring in the crater of an active volcano. The students meet with experts to explore the hazards of volcanoes.

A list of key terms, names, and concepts covered in this video (page 39) will help familiarize students with important vocabulary.

Standards and Objectives

Italy: Natural Hazards and Disasters covers the following objectives and standards

Objectives

- Increase knowledge of the location of Italy and its major landforms.
- Develop an understanding of how Italians are affected by their natural environment.
- Develop a respect for processes such as flooding and volcanism.
- Understand the importance of planning to deal with natural hazards.

National Geography Standards

Standard 1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective

Standard 3. How to analyze the spatial organization of people, places, and environments on the Earth's surface

Standard 7. Physical processes that shape the earth's surface

Standard 12. The processes, patterns, and functions of human settlement

Standard 14. How human actions modify the physical environment

Standard 15. How physical systems affect human systems

Standard 18. How to apply geography to interpret the present and plan for the future

Before Viewing

Choose one of the following leveled activities. Activity one is the easiest; Activity 3 is the most difficult.

1. Ask students to find and describe the relationship between the hazards in the video and those found locally. Using newspaper clips, the Internet, books, or other sources, have students explore natural hazards that threaten their community.

Few locations are directly affected by volcanoes, but we are all at risk if enough volcanic activity takes place because volcanic ash can affect the global climate. For example, the winters were colder for several years following the Mt. St. Helens eruption. Students should describe not only the threats, but also their likelihood of occurrence, and the reasoning for why their community faces this threat.

Personnel from the Natural Resource and Conservation Service (NRCS), National Weather Service, city planning office, or other source could visit the classroom, or the class could take a field trip to see the NRCS facility and tools.

2. Ask students to use newspapers, the Internet, and other sources to gather information on recent natural disasters. Have students find an example of a disaster and describe the region where it happened.

Students should explain the causes of the disaster and decide whether and under what circumstances it could occur somewhere else in the world. Floods, earthquakes, and volcanoes are common occurrences, so the news should have ample resources. Potential for natural hazards or disasters can be estimated with a physical geography textbook or world atlas.

3. Ask students to answer the following questions:

- What causes earthquakes and volcanoes?
  plate tectonics
- Look at a map of the global distribution of volcanoes. Where are volcanoes found?
  rift zones, subduction zones, hot spots like Hawaii
- How was the theory of continental drift proven?
  Geologic measurements on either side of the mid-Atlantic Ridge showed spreading was occurring.
- How do scientists measure the power of earthquakes?
  the Richter scale or the Mercalli scale

More about Floods and Volcanoes

- Studies have shown that urban areas are likely to see what was once a 50-year flood, about once every 15 years because pavement and other impervious surfaces increase runoff.
- Channelization and deforestation were believed to be major factors that made the 1993 Mississippi River floods some of the worst in recorded history.
- The eruption of Mt. St. Helens on May 18, 1980, has been described as the worst volcanic disaster in U.S. history. The blast had the explosive force of a 30-megaton bomb and obliterated everything within 8 miles of the crater.
- The eruption of Mt. Pinatubo in the Philippines in June, 1991, was the largest eruption of that century. It spewed enough sulfur dioxide into the atmosphere to affect the global climate and atmospheric chemical balance through 1995.

While Viewing

To provide a more interactive viewing experience, pause the video at these points for discussion.

Pause Viewing 1

Pause the video when Richard, Karen, and Michael are near the Arno River in Florence and the scientist shows them the water line on the wall. Ask these questions:

- Why are cities so often built near rivers?
  transportation, water supply, good farmland
- What human activities upstream can lead to greater flood potential?
  Deforestation increases the speed of runoff water and lessens infiltration and evaporation. Urban sprawl adds pavement and rooftops, which leads to up to 99 percent of rainfall becoming runoff in developed areas.

Pause Viewing 2

Pause the video when the students visit the dam upstream from Florence. Ask:

- How effective are dams at preventing flooding?
  At less than peak times, dams are very effective. During extreme events, dams fail or water flows over them, so they are ineffective.
- Why is flooding most common in fall and winter in Tuscany?
  The summer is normally hot and dry, while winter is cooler and wetter. The soil moisture is normally higher in winter because there is less evaporation. This leads to soils becoming saturated and increases the amount of runoff.

Pause Viewing 3

Pause the video when the students have just climbed down into the volcano and looked at the measuring devices. Ask:

- What things are measured to check the activity of the volcano?
  seismic activity, gas activity and content of gases from the fumarole, changes in groundwater chemistry
- Would you go into this volcano? Why or why not?
  Answers will vary.

After Viewing

Key Questions

The following key questions are the focus of *Italy: Natural Hazards and Disasters.* A Key Question handout on page 40 allows students to take notes on possible answers to these questions. Discuss the key questions:

1. What are natural hazards?

Natural hazards are risks to humans posed by natural phenomena. They include hurricanes, tornadoes, fires, floods, mudslides, avalanches, volcanoes, high winds, lightning, earthquakes, and tidal waves.

2. Where do they happen?

Each location on Earth has its own set of natural hazards. Many of these can be predicted from latitude, topography, plate tectonics, or climate.

3. How do natural hazards become natural disasters?

When a natural hazard occurs at a specific time and place and causes serious damage or loss of life, it is considered a natural disaster.

4. Can natural disasters ever be avoided?

Yes. We could move many people out of disaster-prone areas. For example, in 1993, towns along the Mississippi River moved to higher ground after the river flooded. We could also design stronger buildings and develop better warning and evacuation systems. However, the cost to do this may be high. In addition, we could try to raise awareness of the risks of living in a disaster-prone area, but more people are moving to hazardous zones than ever before.

5. Why would people ever live around them?

Many people don't have a choice about where they live. They may be unaware of the risk or live in such difficult conditions that they can not afford to worry about things that seem out of their control. People may also choose to live in hazardous areas because they like the view, the price, or think the risk is small.

6. Does any good ever come from natural disasters?

Yes. New life often springs from disasters. Volcanic zones yield fresh, fertile soil. Volcanoes create new land and new islands, and they recycle soil and minerals. Fires often clear out old vegetation and allow new to move in. Floods bring fresh topsoil to agricultural regions, lessening the need for chemical fertilizers.

Activities

Use these activity options to reinforce the concepts in the video.

Oral Presentation
Divide the class into six teams and assign each team a key question from the video. Have each team conduct research outside class on their question. The team should use their findings to create an oral presentation that outlines the answer to their key question. The presentation may also include a visual that illustrates a key point.

Debate
Divide the class in half to conduct a debate. Have one half of the class argue that all people should be moved out of hazardous zones. Have the other side argue that hazards can be controlled by people or predicted in time to reduce the risk. Have three students act as judges of the debate. You can serve as the mediator and time-keeper.

Research Paper
Divide the class into teams of 6 students each. Assign each team member a different key question to research outside of class. Have each team create a comprehensive paper by combining their research and writing.

Map Activity
Gather large-scale maps of Tuscany and the Naples region to post in the classroom. Have students plot the sites that the characters in the video visited and sketch in the significant natural and cultural features. For Florence, this could include the Arno River, cities, vegetation, dams, and mountains. For Naples, this could be Pompeii, other cities, mountains (especially Mt. Vesuvius), roads, and railroads. Students may also also include geologic zones, fault lines, and dormant volcanoes.

Learn more about . . .

- natural hazards and their effects in Andrew Goudie's *The Human Impact on the Natural Environment* (Cambridge, MA: MIT Press, 2000).
- case study readings by G. Tyler Miller, *Living in the Environment* (Pacific Grove, CA: Brooks/Cole, 1999).

Extending the Lesson

Exploring Local Geography

Set up a project to investigate the flood potential of your school's neighborhood. Have students:

1. Collect maps from city hall or insurance companies and plot where your school and houses fall in the 25-, 50-, and 100-year floodplain.
2. Create a time line showing the results.

Cross Curricular Activity: Mathematics

Have students calculate the amount of water that runs off your school's yard or parking lot on a rainy day, or calculate the discharge of a small stream near your school. Students will need a measuring tape, a calculator, and some string (to stretch across a stream or drainage ditch).

1. Divide the class into teams of two, three, or four.
2. Have them go to where the water runs off your school's parking lot or yard. They should measure the depth, speed (in feet per second), and width of the water flowing off the lot.
3. Next, students should multiply these three values—depth, speed, and width—together to get the number of cubic feet per second (discharge) coming off the lot.
4. To calculate the total cubic feet of water that flowed from the lot during a rain event, students should convert the hours of rainfall into seconds and multiply that by the discharge number. Have students try measuring both a grassy or forested lot and a paved lot, to compare the runoff.
5. Have the teams compare their data. This will help them judge the accuracy of their work. They should also discuss the variables that may have accounted for different results.

Making Global Connections

Flooding is a result of global weather patterns and the hydrologic cycle. Have students use data from local weather or climate offices or the National Weather Service to determine the weather processes that cause local flooding conditions. Then investigate the route and distance surface water takes from your school to a terminal lake or the ocean.

Students should use maps to trace and measure their findings. Ask students to summarize the information they gather in a paper in which they describe the unique characteristics of weather, climate, and location that provide moisture to their neighborhood. The National Weather Service can be called or reached on the Internet to provide information. This project will complete one circuit of the hydrologic cycle.

Name_____ Date _____

Italy: Natural Hazards and Disasters

Key Terms, Names, and Concepts

50-year flood—the highest point any stream is expected to reach once every 50 years, on the average

Arno River—the river that bisects Florence, Italy

continental drift—a theory, developed by Alfred Wegener in 1912, that the earth's land masses were once connected as one supercontinent, Pangaea, and have since moved to their current positions

channelization—dredging and straightening of streams and rivers to improve navigation or irrigation potential

deforestation—removal of trees from a region where the natural forest won't be able to rejuvenate in the foreseeable future

fumarole—a hole that is a vent for volcanic gases

infiltration—the movement of surface water through pores in the soil to lower levels

Mercalli scale—measures earthquake intensity from I to XII based on how the quake affects people and buildings; I is negligible and XII is catastrophic

Mt. Vesuvius—the volcano that erupted in 79 A.D. and destroyed the Roman city of Pompeii and Herculaneum

plate tectonics—the movement of the earth's major plates; earthquakes and volcanoes occur along plate boundaries

pyroclastic flow—a potentially deadly flow of hot gases and ash that sometimes accompanies a volcanic eruption

Richter scale—measures earthquake magnitude on a scale of 1 to 8; it is a logarithmic scale, so an earthquake with a measurement of 3.0 is 10 times more powerful than a 2.0 earthquake and 100 times more powerful than a 1.0

seismic activity—shaking of the ground related to earthquakes or volcanoes; activity is measured by a seismograph

urban sprawl—the expansion of urban areas into rural areas

Name_____ Date _____

Italy: Natural Hazards and Disasters

Key Questions

1. What are natural hazards?

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2. Where do they happen?

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3. How do natural hazards become natural disasters?

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4. Can natural disasters ever be avoided?

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5. Why would people ever live around them?

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6. Does any good ever come from natural disasters?

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Russia: Rebuilding a Nation

Location

With 6.6 million square miles of land, Russia sprawls over a large portion of the globe. Russian territory extends from the Baltic Sea in the west to the Pacific Ocean in the east. In the south, Russian territory begins at approximately 42° north latitude and extends beyond 80° north latitude, in the Arctic Ocean. More than half of Russia lies north of 60° north latitude, and a significant portion of the country lies beyond the Arctic Circle, at 66.5° north latitude. This location contributes to the relatively cold climate that prevails in much of the country.

The great span of the Russian landmass affects its climate in another way. Because of Russia's enormous size, a great share of its territory lies distant from the moderating influence of surrounding seas—with some areas as far as 1,500 miles away. This great distance results in extreme temperatures, especially during the bleak Russian winters. In Siberia, the area of Russia between the Ural Mountains and the Pacific Ocean, winter temperatures often drop below –90° F.

Siberia is freezerlike not only with regard to its frigid temperatures. The region is also like a freezer in that it is the repository of valuable resources. Siberia is known for its large reserves of oil, natural gas, minerals, diamonds, and gold. Even so, Siberia's harsh climate has helped to keep the region a remote place despite its abundant wealth of resources. Extreme temperatures frequently cause roads and railroad tracks to crack, sag, and fail. This makes the movement of people and resources in and out of the region extremely difficult.

Introducing Russia

Recently, Russia has experienced dramatic political and economic changes. Even so, many Russians believe that they have a bright future. Russia boasts a tremendous wealth of natural resources and growing ties with Western Europe and the United States. Russia also has a large workforce, with a population exceeding 145 million. Approximately four-fifths of the population is concentrated in the European part of Russia, west of the Ural Mountains.

Today, many Russians place their hopes on the ability of elected officials to rebuild a nation that is still struggling with the social, political, and economic transition from communism to a free-market system.

Additional resources to introduce Russia could include

- interesting travelogues, such as *In Siberia* (Colin Thubron) and *Reeling in Russia* (Fen Montaigne)
- an atlas of Russia
- guidebooks from a local bookstore or travel agency
- *classzone.com*—select *World Geography* for links, current data, and activities related to Russia

Key Questions

This video, *Russia: Rebuilding a Nation,* focuses on these key questions:

1. **What are Russia's natural resources, and how are they managed?**
2. **Why are Russia's natural resources so important?**
3. **How has life changed for the Russian people since the early 1990s?**
4. **Why did these changes occur?**
5. **What does Russia's future look like?**

Teaching with the Video

Running Time: 25 minutes

Synopsis

Marshella, Jeff, and Casey begin their journey outside of Moscow at a petroleum storage facility. At the facility, they learn about Russia's oil resources and the challenges of accessing those resources. The students then tour Moscow, learning about its history and how life has changed since the fall of the Soviet Union. The students also speak with the owner of a door and window company about the privatization of business. They learn how the Russian economy made a transition to a more capitalistic marketplace. The trip concludes at the U.S. Embassy with a discussion about Russia's vast resources and the environmental concerns related to resource development.

A list of key terms, names, and concepts covered in this video (page 49) will help familiarize students with important vocabulary.

Standards and Objectives

Russia: Rebuilding a Nation covers the following objectives and standards.

Objectives

- Learn about the value and future potential of Russia's abundant natural resources.
- Discuss the challenges faced by Russians since the breakup of the Soviet Union in 1991.
- Study the problems associated with developing natural resources in an extreme climate and across long distances.
- Explore the idea of climatology and the role that climate plays in the development of Russia's natural resources.

National Geography Standards

Standard 4. The physical and human characteristics of places

Standard 5. That people create regions to interpret Earth's complexity

Standard 11. The patterns and networks of economic interdependence on Earth's surface

Standard 14. How human actions modify the physical environment

Standard 16. The changes that occur in the meaning, use, distribution and importance of resources

Standard 18. How to apply geography to interpret the past and plan for the future

Before Viewing

Choose one of the following leveled activities. Activity 1 is the easiest; Activity 3 is the most difficult.

1. Use an atlas or a textbook on physical geography to identify the climate regions of Russia. What are the temperature and precipitation criteria that identify each of these climate types?

Monthly average temperature and precipitation are used to identify climates. The standard average is calculated over 30 years. This time period is large enough to show average conditions, but small enough to represent longer-term fluctuations.

2. Ask students to carry out research on economic aspects of the gulag system that the former Soviet Union established in Siberia.

Ask students to write a research paper that describes their impression of this system. The gulag system was a series of concentration camps established in 1918. The Russian secret police were allowed to arrest "class enemies"—people ranging from independent farmers to prisoners of war. These millions of prisoners were used as forced laborers on major Soviet projects, such as the building of canals. Estimates suggest that millions of people died in the gulag system.

3. Engage students in an abbreviated research project focusing on the republics that have become independent of the Soviet Union since 1991. Divide students into groups and assign a republic to each group. Ask students to examine the quality of life in their republic before and after the republic gained independence.

Ask each group to compose an oral report that gives their opinion of whether their republic is better off as a result of independence.

More about Russia's Resources and Economy

The export of Russia's resources, especially oil, has led to a recent economic rebound. This recovery, together with a renewed government effort to carry out important economic reforms, has raised business and investor confidence. Yet serious problems persist.

- Russia remains heavily dependent on exports of commodities, particularly oil, natural gas, metals, and timber. These products account for more than 80 percent of exports and leave Russia vulnerable to swings in world prices.
- Russia's agricultural sector remains troubled by uncertainty over land ownership rights. This uncertainty has discouraged investment and restructuring.
- Russia has also suffered from a "brain drain"—the departure of bright, well-educated Russians who emigrate hoping for greater opportunities overseas.
- The former Soviet republics were typically able to overcome the challenge of market reforms three to five years after independence.

While Viewing

To provide a more interactive viewing experience, pause the video at these points for class discussion.

Pause Viewing 1

Pause the video after the visit to the petroleum storage facility. Ask:

- Why is the extraction and use of Russia's natural resources such a challenge?
  Most of Russia's population lives in west Russia, hundreds and sometimes thousands of miles away from the location of many of the country's most valuable resources.
- What are the physical challenges faced by Russia in trying to develop its natural resources?
  remoteness (the sheer distance between resources and market); severe climate (limited season for development); permafrost (difficult to drill wells and build roads, railroads, and stable buildings)

Pause Viewing 2

Pause the video after the students visit with the owner of the plastic door and window company. Ask:

- What conditions favor new businesses in Russia?
  tax benefits, an open market, lack of competition (according to the factory owner), and potential foreign investment opportunities
- What conditions make it difficult to start a business in Russia?
  It is hard to get cash to start a business. Government connections and access to resources can be difficult to establish and maintain.

Pause Viewing 3

Pause the video after the U.S. Embassy visit. Ask:

- What future challenges does Russia face?
  environmental cleanup, stabilization of its economy and government, and access to remote resources, and others

After Viewing

Key Questions

The following key questions are the focus of *Russia: Rebuilding a Nation.* A Key Question handout on page 50 enables students to take notes on possible answers to these questions. Discuss the key questions:

1. What are Russia's natural resources, and how are they managed?

Russia is the world's second largest producer of oil. It also has the most forest resources per capita of any nation. Natural gas, gold, diamonds, other gemstones, and strategic minerals are also abundant. The ownership and management of these resources are divided between private and government enterprises. Government assistance is needed to maintain the roads and railroads that keep people and resources moving between distant locations.

2. Why are Russia's natural resources so important?

Russia would face serious economic difficulties without its many resources. They provide the Russian economy with revenue and hope for the future.

3. How has life changed for the Russian people since the early 1990s?

Russians have struggled through difficult times since 1991. The political and economic reforms necessitated by the fall of the Soviet Union have brought major change and adjustment for Russian citizens. Opportunities do exist, however, for private enterprise. Russians enjoy more personal freedoms than they did under the Soviet Union. Many Russians are hopeful for a new era of personal freedom and economic prosperity.

4. Why did these changes occur?

The collapse of the communist government of the Soviet Union in 1991 opened the door for political and economic reform. The political reforms included incentives for more trade and openness with other countries. This led to international investment and new business ventures in Russia. Russia has a large work force. Unfortunately, worker productivity was historically poor in Russia, and some new businesses have failed. People are not used to competition, and some resent it. The result has been prosperity for some and confusion and continued poverty for others.

5. What does Russia's future look like?

Russia has many hurdles to overcome if it wants to achieve a standard of living similar to that which prevails in many Western European countries. However, people have many new chances for a good future and a better life. The two primary needs are to provide individuals with the training they need to be successful, and to provide a stable political system that can maintain international relations while building a national infrastructure.

Activities

Use these activity options to reinforce the concepts in the video.

Map Activity
Using the large scale map of Russia's east coast, have students discuss why Russia has not developed the east coast in the way that the United States has developed its west coast. The east coast of Russia is nearest to many Siberian resources and would have ideal access to the Pacific Ocean and trade with the United States, Japan, Canada, and South America.

Ideas in Action
Have students investigate the history of the Iron Curtain. What was the Iron Curtain? Who coined the term? How did the construction of the Berlin Wall in 1961 contribute to Soviet isolation? When did the Iron Curtain fall? Why did Russia open its borders?

Oral Presentation
Prepare a report on the youth of Russia today. Topics may focus on questions such as: What is school like for students in Russia? What type of clothes do they wear? What do they eat and drink? What sports do they follow? What are their goals? Using the discussion in the video as a model, have several groups of students write a short scripted conversation between two American students and two Russian students. Ask them to act out their conversation in front of the class. You also may wish to encourage students in the audience to ask questions of the group of students.

Debate
The economic policies of the former Soviet Union often caused severe environmental damage. After the fall of the Soviet Union, many people hoped that new regional leaders would work harder to balance the need for economic development with the responsibility to protect the environment.

In May 2000, President Vladimir Putin abolished Russia's main environmental protection agency and transferred the agency's main functions to the more business-friendly Ministry for Natural Resources. Environmentalists say that the change was made under pressure from powerful businesses that hoped to avoid environmental regulations. They believe the change will harm Russia. Business leaders argue that the change was necessary because environmental regulations were blocking much-needed economic development. They believe that the change will help Russia.

Divide the class into groups and have them take the side either of the environmentalists or those with business interests. Ask them to defend their positions by using a variety of resources to find as many supporting arguments as possible. Does the evidence that students discover support one side over the other? What are the strengths and weaknesses of each theory?

Learn more about . . .

- local ties to Russia by visiting your Chamber of Commerce. Ask if there are local products that might end up in Russian markets or whether Russian products can be found in local stores.
- international commerce by using the U.S. Department of Commerce Web site (*www.doc.gov*) or other search engines to access current trade information between the United States and Russia.

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Take a field trip or assign an individual trip to local stores and businesses to find out if they make or sell products that have a connection to Russia. Students can also gather this information by conducting telephone interviews.

1. Ask students to prepare survey questions similar to the ones used by the students in the video when they interviewed Russian businesspeople.
2. Have students ask the business representatives if they see any future growth potential for their business regarding products and resources in Russia, and why.
3. Students might also ask how doing business with Russia would be the same as or different from conducting business with other countries abroad.

Cross-Curricular Activity: Mathematics

Prepare a dartboard by attaching a world map to a corkboard. Have students take turns throwing darts or otherwise marking the map until they hit or mark the map 100 times. Have them participate with their eyes closed to ensure that the areas they hit are random and not aimed at. Make sure to keep everyone safely away from the board. After each throw, ask students to write down the name of the country they hit. Only a hit on the map counts; categories should include lake, sea, ocean, and country. Once 100 hits on the map are reached, ask students to calculate the percentage of hits on Russia. Have students compare that percentage to the percentage of global area encompassed by Russia. Did the numbers match up? Why or why not?

Making Global Connections

Have students research the purchase of Alaska from Russia. When did it happen? How much did it cost? How many acres of land and what resources did America gain from the purchase? Who profited from the deal? Why did some critics at the time refer to this purchase as "Seward's Folly"? How did the sale of Alaska compare to the loss of territory and resources following the breakup of the Soviet Union?

Name_____ Date _____

Russia: Rebuilding a Nation

Key Terms, Names, and Concepts

1991 breakup—social, political, and economic changes loosened the Communist Party's control over the Soviet Union; in 1991, these changes resulted in the collapse of the Soviet Union and emergence of 15 independent republics

climate—long-term trends in temperature and precipitation; climate is normally determined by calculating average monthly temperatures and precipitation over a period of 30 years

free market—an economic system in which trade is conducted without government interference; no pure free market exists, but Europe and the United States have relatively free markets

globalization—often refers to the opening of markets in all countries to worldwide trading activity

natural resources—material sources of wealth, such as timber, fresh water, or mineral deposits, that occur in a natural state and have economic value

permafrost—a layer of subsoil that remains frozen throughout the year

privatization—the transfer of ownership of property or business from the government to private companies or individuals; Russian leaders undertook privatization to integrate Russia into a capitalist economy

Revolution of 1917—this revolution ended the reign of the czars and paved the way for the emergence of the Soviet Union

Soviet Union—also called the Union of Soviet Socialist Republics (USSR); the Soviet Union was the world's first and most powerful communist country; it existed from 1922 to 1991

Name_____ Date _____

Russia: Rebuilding a Nation

Key Questions

1. What are Russia's natural resources, and how are they managed?

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2. Why are Russia's natural resources so important?

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3. How has life changed for the Russian people since the early 1990s?

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4. Why did these changes occur?

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5. What does Russia's future look like?

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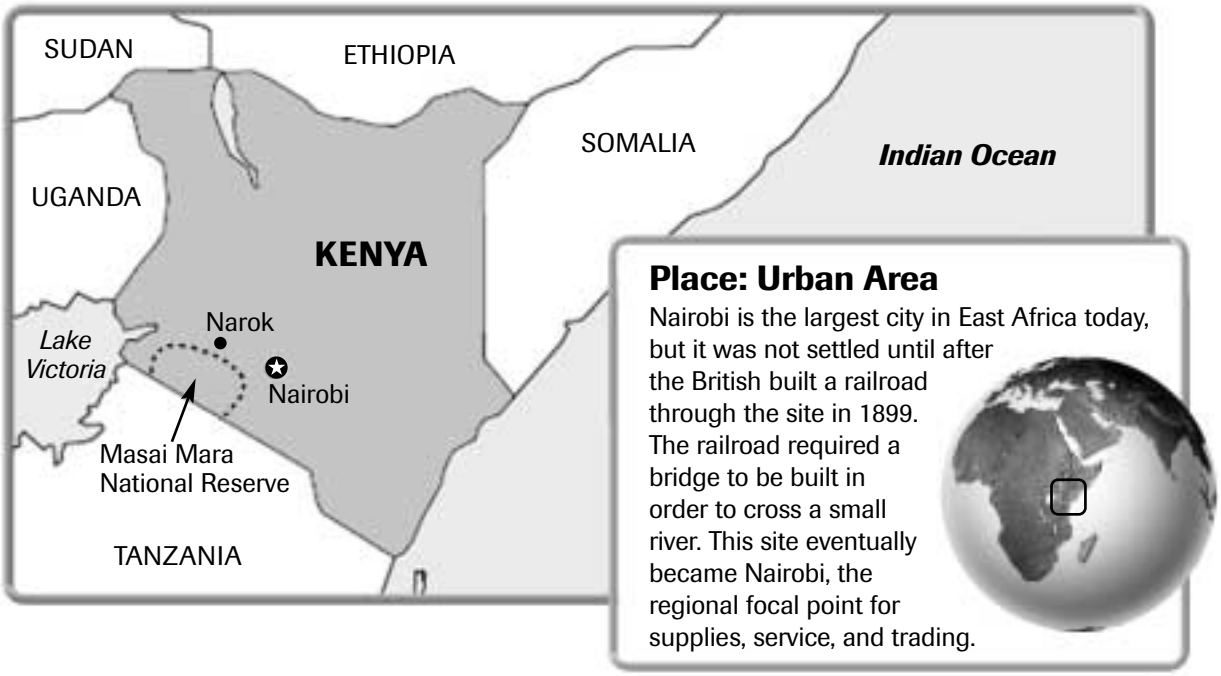
Kenya: National Identity and Unity



Location

Kenya is located in the tropical climate region of Africa. The country has half of its area north and the other half south of the equator. This location would suggest that Kenya would be covered with dense, tropical rain forests, like its western neighbors in Central Africa. However, Kenya has very few rain forests. It is dominated by arid, semiarid, and savanna climates. The wind patterns near the equator do not deliver much moisture from the Indian Ocean to the east. Moisture from the Atlantic Ocean falls as rain far to the west of Kenya. As a result, the country is dry, and the vegetation consists of grasslands and scrub bushes. Grassland, or savanna vegetation, is productive as an ecosystem, despite the lack of water. Savannas support a tremendous number of wild animals, including many of Africa's most famous, such as lions, zebras, elephants, giraffes, impalas, cheetahs, and rhinoceroses.

Nairobi is the capital of Kenya. It is home to over two million people. The city is found at 1°29' south latitude and 36°82' east longitude. Despite the concentration of people and businesses coupled with the equatorial location, Nairobi's weather is quite pleasant. While Nairobi is located near the equator, it sits at over 5,000 feet above sea level. The high elevation in the East Africa Highlands provides Nairobi with natural air conditioning, since air at higher elevations is cooler than air at lower elevations at the same latitude.

Introducing Kenya

Understanding Africa, and thus Kenya, requires a look at history as well as geography. Historical boundaries were very different in Africa than they are today. Most ancient borders were drawn along cultural lines, when large groups of people who formed tribes controlled the region where they resided. This changed in 1884, when the Berlin Conference was held in Germany. The Berlin Conference began a process that divided lands in Africa among European nations that claimed colonial rights to various parts of Africa. Britain received the colonial rights to Kenya, which led to big changes for the African tribes living there. Christianity and the English language were introduced, and the colony of Kenya became an extension of English rule and law. During the 1940s opposition to British rule began. Throughout the 1950s opposition grew, and in 1961 Britain agreed to local elections. Kenya gained full independence in 1963.

Kenya faced many challenges when British rule ended. The country included 42 different ethnic groups that often did not agree on how to divide power and resources and did not see themselves as a single nation. Few people had the experience to be effective national administrators. However, they needed to pull together to survive and to build a new country.

Additional resources to introduce Kenya could include

- Information on the Berlin Conference from *Geography Realms, Regions, and Concepts* (H. J. de Blij and Peter O. Muller)
- *Hammond's Comparative World Atlas* for information about climate, vegetation, and population distribution
- Local or online travel organizations for information about tourism to Kenya and its wildlife and wildlife park systems
- *classzone.com*—select *World Geography* for links, current data, and activities related to Africa

Key Questions

This video, *Kenya: National Identity and Unity,* focuses on these key questions:

1. **What peoples and cultures make up Kenya today?**
2. **What attracted Europeans to Kenya, and how did colonialism affect Kenya?**
3. **How important is Kenya's natural wildlife to the country's economy?**
4. **How does the Kenyan environment impact lifestyles and cultures?**

Teaching with the Video

Running Time: 25 minutes

Synopsis

Nicolle, Zack, and Dawn travel to Kenya to learn about the country's people and wildlife. First, they learn about Kenya's physical geography from students at Braeburn High School. Next, Joseph Makokha explains the important changes and problems caused by colonialism. At Sheldrick Wildlife Trust Animal Orphanage, the students' focus switches to wildlife and preservation. Later they take a safari ride into the Masai Mara National Reserve. Then the students travel to see Kenya's capital, Nairobi.

A list of key terms, names, and concepts covered in this video (page 59) will help familiarize students with important vocabulary.

Standards and Objectives

Kenya: National Identity and Unity covers the following objectives and standards.

Objectives

- Discover how colonialism has affected Africa.
- Learn about the importance of native wildlife to Kenya.
- Learn about the peoples of Kenya and their cultures.
- Understand the problems that face Kenya and its capital, Nairobi.

National Geography Standards

Standard 3. How to analyze the spatial organization of people, places, and environments on Earth's surface

Standard 4. The physical and human characteristics of places

Standard 6. How culture and experience influence people's perceptions of places and regions

Standard 8. The characteristics and spatial distribution of ecosystems on Earth's surface

Standard 9. The characteristics, distribution, and migration of human populations on Earth's surface

Standard 10. The characteristics, distribution, and complexity of Earth's cultural mosaics

Standard 13. How the forces of cooperation and conflict among people influence the division and control of Earth's surface

Before Viewing

Choose one of the following leveled activities. Activity 1 is the easiest; Activity 3 is the most difficult.

1. Ask students to study the importance of tourism to Kenya's economy. Have them gather promotional materials about Kenya's tourism from travel agencies or Internet sites. Ask them to use the information found to answer the questions: Why do people visit Kenya? What will Kenya need to do to promote tourism in the future?

The benefits of tourism are key in explaining the importance of parks and wildlife for the economic present and future of Kenya. The research also provides students with an opportunity to judge for themselves if the cost of a trip to Kenya would be worthwhile for them. If it is not, they should determine what elements would need to be added to attract them to Kenya.

2. Ask students to perform a search for resources in their library or on the Internet that describe Kenya prior to and during the period of colonialism. What was traditional African life and culture like? How did it change when European culture was introduced? How was the traditional lifestyle and level of civilization of the African people perceived by Europeans?

For hundreds of years prior to the British colonial period, Kenya was partially colonized by Arabs and Portuguese, but their control was predominantly along the coastal areas. The farmer, herders, and hunters of the interior were more autonomous. The British had much wider control over Kenya during the colonial period. During these times, Europeans viewed traditional Kenya as "primitive" rather than as a group of people from a different culture.

3. Research the events in Kenya that followed the end of colonial rule. What challenges did Kenyans face? How were they overcome?

When Kenya gained independence from Britain on December 12, 1963, the African people were left with the task of rebuilding the organizational infrastructure. Kenyan leaders developed a new constitution that provided for a constitutional monarchy. Jomo Kenyatta became the country's prime minister. In 1964, Kenya became a republic, and Kenyatta's title was changed to president. Since its independence, Kenya has faced numerous challenges. The government has attempted to improve opportunities for its people by increasing the number of schools. Today, it maintains the schools in most parts of the country.

More about National Identity and Unity

- Kenya is not the largest country in either area or population in East Africa, but it has become the dominant country in the region politically. Nairobi is the most populated city in the East African region, and Mombasa, Kenya's seaside city, is the busiest port.
- Nairobi is a very modern city, with skyscrapers, international businesses, and cultures from all over the world. Like most rapidly growing international cities, it also contains peripheral shantytowns, where poverty and crime are serious problems.

While Viewing

To provide a more interactive viewing experience, pause the video at these points for class discussion.

Pause Viewing 1

Pause the video after the students discuss Kenya's history with Harrison Otieno. Ask these questions:

- How many ethnic groups and languages are native to Kenya?
  42
- What is the official language of Kenya?
  There are two official languages: Kiswahili and English.

Pause Viewing 2

Pause the video after the discussion about Kenya's independence with Joseph Makokha. Ask:

- What challenges were faced by Kenya when the country became independent in 1963?
  Individual tribes did not share a view of being Kenyan, but simply of being a part of their ethnic groups and home regions. Individual groups did not feel that a central government would be able to equally represent their interests.
- What slogans helped Kenya through the challenges following independence? What did they mean?
  "Let's Pull Together" and "Independence With Work." The slogans referred to the country's challenge of managing their own affairs in a spirit of unity and hard work.

Pause Viewing 3

Pause the video after the discussion about Kenya's wildlife and climate with Mr. Wachanga. Ask:

- What kinds of restrictions are imposed in Kenya's game preserves?
  No human activities are permitted in many park areas. Villagers employed as park rangers help to gain commitment to preservation in their community.
- How do the climates of Kenya affect lifestyle?
  Housing and clothing vary greatly based on climactic conditions. In hot areas, clothing is light and housing is made to keep heat out. In arid regions, the search for water has a significant impact on lifestyle, and housing becomes less permanent as inhabitants are more nomadic.

After Viewing

Key Questions

The following key questions are the focus of *Kenya: National Identity and Unity.* A Key Question handout on page 60 enables students to take notes on possible answers to these questions. Discuss the key questions.

1. What peoples and cultures make up Kenya today?

Forty-two native ethnic groups are found in Kenya. Primary Kenyan tribes include the Kikuyu, Masai, Luo, Kamba, Kalenjin, and the Luhya.

2. What attracted Europeans to Kenya, and how did colonialism affect Kenya?

Kenya was an exciting new place for Europeans to explore and map. Next came the Christian missionaries, who wanted to spread the gospel, to teach native Kenyans to read and write, and to involve them in trade with the British East Africa Company. Finally, the colonists came with interests in owning land and resources and making a profit in trade.

3. How important is Kenya's natural wildlife to the country's economy?

Although wildlife is the primary reason for Kenya's tourism, conflict about its protection remains. For example, some African people view lions as income generators through tourism, but also as problems when lions kill their cows. However, more and more African people are dedicated to protecting wild animals because tourist money is used for local services, such as schools, hospitals, roads, and other projects that benefit them.

4. How does the Kenyan environment impact lifestyles and cultures?

The types of homes built are representative of the environment. Special heat-resistant homes are built by those in the hot lowlands. Semi-permanent homes are built by nomadic people. Specialized clothing is worn depending on local environmental conditions. The natural grasslands promote the tradition of herding cattle.

Activities

Use these activity options to reinforce the concepts in the video.

Movie Activity
Compare and contrast a traditional hunting and gathering society with one in a contemporary urban setting. Show the opening 20 minutes of the movie *The Gods Must Be Crazy* to the class. This movie is a comedy but also addresses a comparison of the modern urban lifestyle to a traditional African hunting and gathering society. Which lifestyle is being promoted by the movie? What are the consequences of the urbanized/industrialized lifestyle on the quality of life and the meaning of life?

Research Paper
Have students develop a paper that compares and contrasts the challenges faced by Kenyans during and following the colonial period. What rights did Kenyans have during the colonial period? What kinds of difficulties did Kenyans face during the years following independence? How did daily life change for Kenyans when they became independent? Are there any effects of colonialism still felt by Kenyans today? Are they positive or negative?

Map Activity
Provide a map of Kenya displaying the major physical features of the country. Ask students to study how climate, topography, vegetation, or other physical features played a part in creating the numerous ethnic groups of Kenya.

Debate
Divide the class into groups of four. Have the students pair up to research and brainstorm before debating the following issue: the idea of "using" rather than "preserving" wildlife. Some believe that the careful use of wildlife for products driven by market demand will actually cause endangered species populations to increase. Proponents believe that this concept of "sustainable use" should provide incentives to maintain and manage many endangered wildlife species.

Learn more about . . .

- Kenya's national identity, which is driven by the preservation of its environment. Data can be obtained from *The World Factbook* at *www.odci.gov/cia/publications/factbook/*, *The Globe* at *www.globe.gov,* and the United Nations Environment Programme at *www.unep.org/*
- the preservation of endangered and threatened species around the world at the World Resources Institute site at *www.wri.org/*

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Study public lands found in your area. How do they compare in size and diversity to the parks in Kenya? What state or national parks are found in your immediate area or your region? How many people visit them? What are the attractions for visitors to these parks? Do unique or threatened species inhabit these parks? Are these parks important to the economy? How?

Cross-Curricular Activity: Biology

The video discusses the value of wildlife to Kenya in monetary terms. Have students define and research the term biodiversity, explaining why biologists argue that protecting a diversity of species may be critical to human survival in the future. Also have students consider how people have changed and reduced the diversity of animals and plants around us.

Making Global Connections

Compare the British colonization of Kenya to the British colonization of Australia. Was the pattern similar? How were Aborigines in Australia treated? What animals were introduced by colonists into Australia's environment? Did the natives of Australia fare better or worse than those of Kenya? Does Australia today use its wildlife resources to attract tourism? How are they protecting their natural species, such as the koala and the kangaroo?

Name_____ Date _____

Kenya: National Identity and Unity

Key Terms, Names, and Concepts

colony—a territory set up by a government to receive settlers, expand trade and territorial interests, and provide resources back to the ruling country

Great Rift Valley—the north-south valley in Africa created by tectonic forces pulling the land apart

harambee—Kiswahili for "Let's Pull Together"

Kiswahili—the national language of Kenya

Masai—a semi-nomadic cattle-herding tribe, which lives in the southern portion of Kenya and in northern Tanzania

Nairobi—the capital city of Kenya

Omani Arabs—one of the first non-African groups to establish trade with Kenyans (about A.D. 100)

plateau—a relatively flat area raised above the surrounding land; Africa is known as the "Plateau Continent," since most of the interior is made up of plateaus

savanna—a warm, semi-arid grassland, which includes both tall and short grasses with some scattered trees and bushes

Uhuru Na Kazi—Kiswahili for "Independence with Work"; the rallying cry promoted by Kenyan officials encouraging people to work in the interests of uniting the country

Name_____ Date _____

Kenya: National Identity and Unity

Key Questions

1. What peoples and cultures make up Kenya today?

_____

_____

2. What attracted Europeans to Kenya, and how did colonialism affect Kenya?

_____

_____

3. How important is Kenya's natural wildlife to the country's economy?

_____

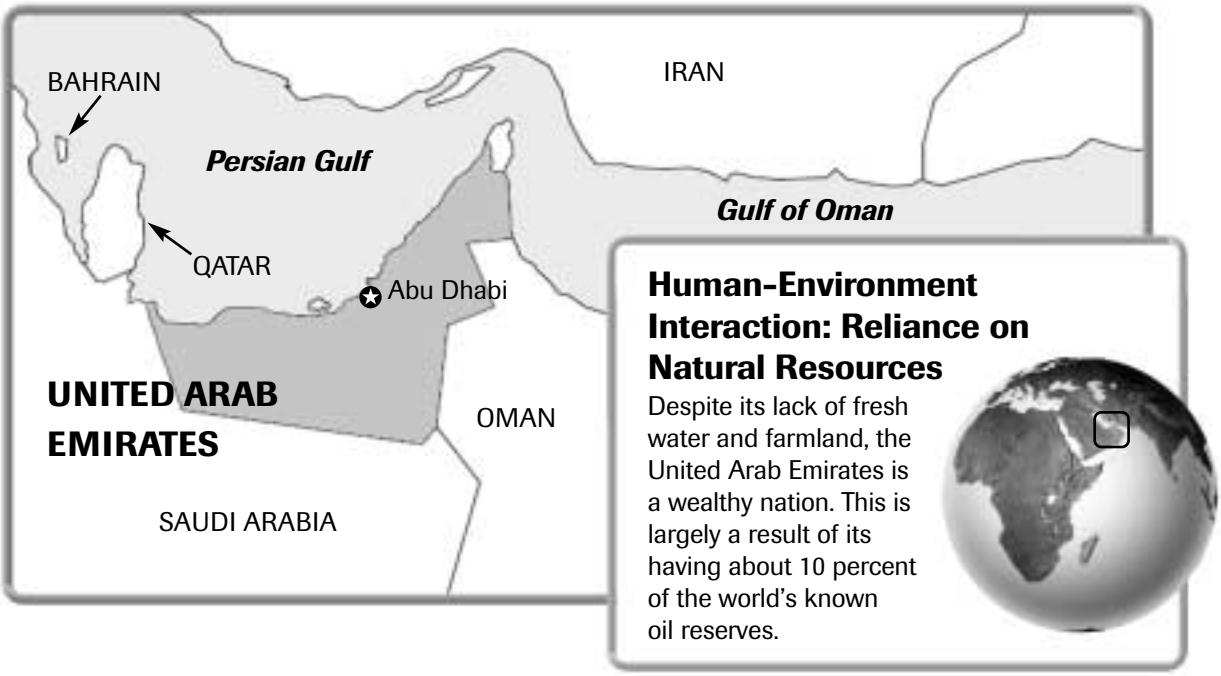
_____

4. How does the Kenyan environment impact lifestyles and cultures?

_____

_____

United Arab Emirates: Oil and Water Resources



Location

The United Arab Emirates is located near the Tropic of Cancer on the eastern shore of the Arabian Peninsula at 23.5° north latitude, 54° east longitude. The UAE is a relatively small country with an area of 32,000 square miles, roughly the size of the state of Maine. The country shares a border with Saudi Arabia, the country which has the world's largest known oil reserves. Together with its eastern neighbor, Oman, the UAE occupies the Musandam Peninsula. This peninsula protrudes into the Persian Gulf, creating the Strait of Hormuz. It is a strategic location in the movement of the world's oil. It is often referred to as a "choke point" for oil tankers and other ships passing through the Hormuz Straits.

Across the Persian Gulf to the north of the UAE is Iran, the most populous country in Southwest Asia. Several islands near the Strait of Hormuz are claimed by both the UAE and Iran. Military bases and the possible deposits of oil beneath the islands make control of the islands an economic as well as a political issue.

Bordering the Persian Gulf, the United Arab Emirates has good ocean access. This allows it to export oil and import food and other goods. The Gulf is a source of saltwater that can be desalinized for the production of needed freshwater. Located in one of the world's driest regions, the UAE is too hot and too dry for agriculture in most of the country without irrigation. Taking oil from and introducing water to its arid environment are both important activities in the UAE.

Introducing United Arab Emirates

With a 40 billion dollar per year gross domestic product, and 2.5 million residents, the UAE is one of the wealthiest nations in the world per capita. The wealth of the UAE has drawn many immigrants as guest workers and skilled technical workers for the energy industry. The official language is Arabic, but today people who live and work in the UAE speak Persian, English, Hindi, Urdu, as well as other languages. With the increase of immigrants working in the UAE today, only about 35 percent of the people living in the country were born there.

The UAE is a Muslim country. Its population is mostly Sunni Muslim, with a small minority of Shi'a Muslim. The division of the population into Sunni and Shi'a Islamic groups is somewhat complicated, but began as a dispute over who should succeed Muhammad as the religious leader of Islam in 632 A.D. The Shi'ites believed the successor was Ali, a blood relative of Muhammad, while the Sunnis chose the father of Muhammad's wife. Ali was assassinated in 661 A.D. and the division between the Sunnis and Shi'ites resulted. Today, almost 85 percent of all Muslims are Sunni. Sunni and Shi'a worshippers have profoundly different philosophies on how to live their lives. Sunnis look to their families and community for knowledge to solve problems, while Shi'ites look to their religious leaders. As a result, and as with other religious movements, there is a great range in the way the holy book of Islam, the Koran, is interpreted and how that affects the lives of the adherents to the religion.

Additional resources to introduce UAE could include

- universities' religion Web sites, such as *http://emuseum.mankato.msus.edu/cultural/religion/*
- a physical geography textbook, such as *Introducing Physical Geography, Second Edition* (Alan Strahler and Arthur Strahler)
- the Energy Information Administration's Web site at *http://www.eia.doe.gov* for data on oil production, use, and imports for many countries
- *classzone.com*—select *World Geography* for links, current data, and activities related to Southwest Asia

Key Questions

This video, *United Arab Emirates: Oil and Water Resources,* focuses on these key questions:

1. **How does the scarcity of an important natural resource affect people's daily lives?**
2. **How is oil produced, distributed, and used?**
3. **How have oil resources affected life in the United Arab Emirates?**
4. **Who benefits from oil wealth in the UAE?**
5. **How do the policies of the UAE and other governments affect oil resources?**

Teaching with the Video

Running Time: 25 minutes

Synopsis

Dawn and Zack travel to the United Arab Emirates to learn about this "Land of Contrasts," a country with an abundance of oil, but a scarcity of freshwater. The students begin in the country's capital, Abu Dhabi. After a brief history of the region, they talk to Frank Kemnetz about the oil industry. Dawn and Zack also meet with local students over a cup of coffee to discuss the misconceptions many people have about their country and culture. After an attempt at sand skiing, the students discuss water recycling with Khalid Al-shehadat. Then, they learn more about the UAE's water resources by visiting a desalinization plant.

A list of key terms, names, and concepts covered in this video (page 69) will help familiarize students with important vocabulary.

Standards and Objectives

United Arab Emirates: Oil and Water Resources covers the following objectives and standards.

Objectives

- Learn about the importance of oil to Southwest Asia.
- Explore the ways people cope in a desert environment.
- Understand how saltwater can be turned into freshwater.
- Develop a better understanding of the history of the Arabian Peninsula.

National Geography Standards

Standard 4. The physical and human characteristics of places

Standard 5. That people create regions to interpret Earth's complexity

Standard 6. How culture and experience influence people's perceptions of places and regions

Standard 11. The patterns and networks of economic interdependence on Earth's surface

Standard 14. How human actions modify the physical environment

Standard 15. How physical systems affect human systems

Standard 16. The changes that occur in the meaning, use, distribution, and importance of resources

Before Viewing

Choose one of the following leveled activities. Activity 1 is the easiest, while Activity 3 is the most difficult.

1. Ask students to use an atlas, the Internet, and library resources to study the world's oil resources. Create a list of the top 10 oil-producing countries in the world. Discuss the future of the oil industry. What are some future energy options? What will happen to the economies of oil producing nations if other energy options become widely used?

The top 10 oil-producing nations in the world are Saudi Arabia, Iran, Venezuela, the United States, Russia, Mexico, China, Norway, the United Kingdom, and either UAE or Iraq depending on whose figures you use. Scientists see oil as a finite resource. Countries that depend on oil sales must look to diversify their economies to avoid economic ruin in the future when their petroleum resources are exhausted. Countries will eventually switch to other sources of energy because of rising costs of production and transportation, environmental damage, and depletion of oil resources. Alternative sources of energy include solar power, wind power, geothermal energy, tidal power, and hydroelectricity. As other energy resources are used, the economies of oil-producing nations could decline.

2. Ask students to use the Internet and other sources to gather information on desalinization of water. Have them create an infographic showing how saltwater is processed to produce potable water.

The infographic should illustrate at least one method of desalinization. The illustration should trace the steps taken to produce potable water and include descriptions of the desalinization process. Also helpful would be charts showing how much water is produced and how much water is needed for the region.

3. Ask students to research the desert climate. What causes major deserts to form near the Tropic of Cancer and the Tropic of Capricorn? Define a desert. Then study the particular wind, temperature , atmospheric pressure, and moisture patterns that form deserts.

Deserts form along the Tropic of Cancer and Capricorn because of strong, high atmospheric pressure zones that dominate these regions. Descending air in these regions causes dry conditions, while a combination of low elevation and low latitude with few clouds provide maximum sunshine. Deserts in other parts of the world are also often the result of rain shadows, where mountain ranges block moisture bearing winds from the ocean.

More about the United Arab Emirates

- The UAE today has many different countries represented in its workforce. People from Jordan, Yemen, Oman, Iran, Pakistan, India, the Philippines, India, Europe, and North America all live and work in the UAE.
- Compared to neighboring countries, literacy is very high in the UAE. Almost eighty percent of the men and women are literate.
- At present levels of production, oil and gas reserves should last for more than 100 years.
- Oil concessions in UAE lands are jointly owned by British, French, American, Japanese, and UAE companies.

While Viewing

To provide a more interactive viewing experience, pause the video at these points for discussion.

Pause Viewing 1

Pause the video after Dawn and Zack's history discussion on the Abu Dhabi waterfront. Ask these questions:

- What is an emirate?
  a region under the control of an emir
- What is an emir?
  a sheik, or Arab ruler
- Why was 1953 an important year for the UAE?
  This was the year oil was discovered in the United Arab Emirates.

Pause Viewing 2

Pause the video after Zack and Dawn discuss life in the UAE with local students.

- How does the lifestyle of the UAE students compare with that of students in the United States?
  UAE youth are well educated and have access to many of the same technologies that Americans do.
- What are some of the misconceptions many people around the world have about life in the UAE?
  The UAE students said that some misconceptions arise when they chat on the Internet with people from other countries. They have been asked, for example, whether they live in tents or ride camels.

Pause Viewing 3

Pause the video after the students interview John Burrows near a desalinization plant. Ask:

- Where does the country get fresh water for drinking?
  The country desalinizes water from the Persian Gulf.
- Where else are desalinization plants used?
  Anywhere salt water is present, and fresh water is not readily available (e.g., on ships, oil rigs, even in the United States).

After Viewing

Key Questions

The following key questions are the focus of *United Arab Emirates: Oil and Water Resources.* A Key Question handout on page 70 enables students to take notes on possible answers to these questions. Discuss the key questions:

1. How does the scarcity of an important natural resource affect people's daily lives?

People in the UAE had to learn to live with very little water. Prior to 1960, the major source of water was from wells, and since then the country has built desalinization plants.

2. How is oil produced, distributed, and used?

Oil is pumped from deep underground layers of porous rock saturated with the natural resource. The oil is brought to the surface through steel pipes and sent through pipelines to oil tankers or refineries. Most of the oil is exported to other countries, where it is used to make fuel, plastic, and other petroleum-based items.

3. How have oil resources affected life in the United Arab Emirates?

Before oil was discovered in the UAE, people lived mainly along the coast, where they worked in the pearl industry, trade, or fishing. Inland, many of the people were nomads, traveling either with their flocks or for trade. After 1953, people moved to where the new oil industry created jobs. Income from the sale of oil has been spent on education, water resources, city development, and diversification of the economy. Exploitation of oil resources has led to a great increase in the population of the UAE. It enabled the UAE to purchase labor, goods, and services from other countries and has improved the quality of life for its residents.

4. Who benefits from the oil wealth in the UAE?

The entire country benefits, because much of the money is provided to the citizens in the form of income, education, healthcare, and modern conveniences (like cell phones, sanitation works, electricity, air conditioning, and computers). The oil revenue is also used to develop other industries in the country.

5. How do the policies of the UAE and other governments affect oil resources?

When it comes to managing the natural resources, the goals of the government are usually similar to those of the oil company. Policies are designed not only to maximize profits but also to preserve the environment and ensure the health and safety of oil workers. However, the government controls the rate of oil production—a decision not left to the oil companies. The UAE is also a member of the Organization of Petroleum Exporting Countries (OPEC), which monitors oil production and pricing in the world markets.

Activities

Use these activity options to reinforce the concepts in the video.

Venn Diagram
Divide the class into small groups. Have the students use an atlas to find a city in the world with climate conditions similar to a city in the UAE. What is the source of the city's water? What is its local economic base? Are there any other comparisons that can be made between the two cities? Have each group create a Venn Diagram comparing the two cities.

Ideas in Action
The use of fossil fuels, such as oil, has serious environmental consequences. Study the types of problems that have resulted from the mining, transportation, and use of oil, coal, and natural gas. Develop a three-column table contrasting the costs, environmental impact, and the benefits and drawbacks of various fossil fuels.

Map Activity
Ask students to use Internet sources to identify where petroleum is produced and where it is consumed. Then map the transportation of petroleum from its sources to its markets by drawing flow lines on a world outline map. The widths of the flow line may be varied to show the amount of petroleum being exported to various countries. Helpful information can be found on the following Web site: *www.eia.doe.gov*.

Water Resources Use Plan
Have students use Internet or library resources to gather information about current and projected water use in Southwest Asia. Then divide the class into small groups with the task of creating a plan that would regulate water usage in the area or provide ways to meet increasing needs for water of various countries in the area. The students should create a multi-media presentation about their plan.

Learn more about . . .

- the impact of oil on the environment in *Environmental Geosciences* 3:3, 1996.
- petroleum production in *World Oil,* an oil magazine with prices, petroleum futures, and other general information at *www.worldoil.com.*

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Use the U.S. Department of Energy's Web site (*http://www.energy.gov/*) to research United States' oil production. How much oil does the United States produce? How does that compare to the UAE's production? Where are the major oil producing zones located in the United States? Why does the United States need to import oil? Have students develop a report or poster illustrating their findings.

Cross-Curricular Activity: Biology

Biologists and other scientists are concerned about the proposed drilling of oil in Alaska's Arctic National Wildlife Refuge. What unique plant and animal species are found in this remote arctic environment? What impact would the pipeline have on wildlife? How would the number of people involved in drilling change the region's landscape? This issue offers an excellent opportunity for a lively student debate.

Making Global Connections

Much of the UAE's exported oil is shipped to Japan. Research why Japan imports oil. Where does Japan get most of its energy? What are Japan's own energy resources? What export products from Japan are needed in the UAE? Assign students to small groups and ask them to develop a short panel discussion on these issues.

Name_____ Date _____

United Arab Emirates: Oil and Water Resources

Key Terms, Names, and Concepts

Abu Dhabi—the capital of the United Arab Emirates

date palm—a date-producing tree native to Arabia

desalinization—removal of mineral salts from water to make it useful for drinking, agriculture, or industry

emir—an Arab ruler, or sheik

emirate—a region under the control of an emir

nomads—traders or herders who traditionally moved from season to season to find food for their flocks of sheep, camels, and goats, or to locate water sources, shelter, and trade opportunities

precipitation—water in the form of rain, snow, sleet, hail, mist, or fog

salt marsh—a shallow, wet, boggy environment in which reeds and grasses grow but that is too salty for drinking water

The Trucial States—an earlier name for the United Arab Emirates from 1853 to 1971

Name_____ Date _____

United Arab Emirates: Oil and Water Resources

Key Questions

1. How does the scarcity of an important natural resource affect people's daily lives?

_____

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2. How is oil produced, distributed, and used?

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3. How have oil resources affected life in the United Arab Emirates?

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4. Who benefits from oil wealth in the UAE?

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5. How do the policies of the UAE and other governments affect oil resources?

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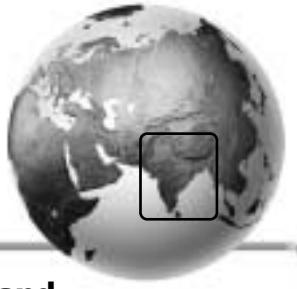
India: Population and Resources



Place: Human and Physical Characteristics

India has more than a billion people, almost four times the population of the United States. Yet, in an area only one-third that of the United States, India produces most of the food its people need. Its tropical climate allows crop harvests throughout the year.

Location

India is located in South Asia. The Indian subcontinent juts far into the Indian Ocean, with the Arabian Sea on the west and the Bay of Bengal on the east. On the north and east, China, Bangladesh, Bhutan, and Nepal border India, and Pakistan borders it on the west. Off the country's southern tip is Sri Lanka.

India stretches between 8° and 33° north latitude, with more than half of the country south of the Tropic of Cancer. Southern India has moderate winters and warm, wet summers. Northern India is cooler and drier. Western India's dry climate is similar to that of Southwest Asia and contains the Thar Desert near the Pakistan border. The tropical lowlands of the Ganges valley lie in eastern India.

The Himalayan Mountains cross far-northern India. The Himalayas were formed, and continue to grow, as the Indian subcontinent is continually pushed northward into Asia by the tectonic forces of the earth. The snow-covered peaks of the Himalayas are the highest in the world.

One of India's technological centers, the city of Bangalore, is on the Deccan Plateau in south-central India. Because of its higher elevations, the city has a milder climate than coastal cities at the same latitude. Bangalore is connected by railway and highway to the port city of Chennai (Madras) on the Bay of Bengal. Although Bangalore and other Indian cities are growing rapidly, most Indians continue to live in rural river lowlands and along the coastlines, where the water is plentiful for crops.

Introducing India

India has a long and complex history. There were originally two main language families, the Dravidian in the south, and Indo-European in the north. The Dravidian south, where Bangalore is located today, is a distinct ethnic region from the Indo-European north with a different regional language. The British influenced India through trade connections from the 1500s to the 1800s, and officially took control of India as a colony in 1858. British colonization of India has left its mark on the country in many ways. There are three primary outgrowths of British colonization. The first is the adoption of English as a common language. The second is the establishment of a British-style education system. The third is the introduction of a parliamentary government to India. All of these developments from the colonial period are helping India succeed in the global economy.

Despite their economic efforts, life in most of India revolves around the monsoon climate. The majority of the people in India live in small villages and work in agriculture. Indian farmers have adapted the growing of rice and other crops to complement two distinct seasons: a dry winter season and a very wet, warm summer season. Many locations in India receive two inches or more of rain per day during the summer monsoon, while they may go for several months or more without rain during the winter. Indians have learned how to use the abundant rains to maximize their production of food.

Additional resources to introduce India could include

- population information available on the United Nations Population Division's Web site, *http://www.un.org/popin/*
- economic information available from the World Trade Organization's Web site, *http://www.wto.org/*
- an atlas of India
- the history, culture, and information sections of travel guides, such as *Lonely Planet India* (Sarina Singh)
- *classzone.com*—select *World Geography* for links, current data, and activities related to South Asia

Key Questions

This video, *India: Population and Resources,* focuses on these key questions:

1. **How do India's large population and economic development interact?**
2. **How is daily life affected by such a large population?**
3. **How has India been affected by world economic growth?**
4. **What resources does India possess that contribute to its role in a global economy?**
5. **What roles do young people and women play in India's economy?**

Teaching with the Video

Running Time: 25 minutes

Synopsis

Nicki, Beau, and Rodney travel to India to learn about its people and economy. In Bangalore, they explore the city with local students on auto rickshaws, seeing historical monuments and temples. At one of India's largest information technology companies, PlanetAsia.com, the students learn about the opportunities for women in India today. After talking to a representative from World Vision and a local architect, the students learn why people are migrating to India's cities and about the challenges created by overcrowding.

A list of key terms, names, and concepts covered in this video (page 79) will help familiarize students with important vocabulary.

Standards and Objectives

India: Population and Resources covers the following objectives and standards.

Objectives

- Discover how to find and use population information.
- Learn about the role of women and young people in India's economic future.
- Explore an Indian city and see how people live there.
- Learn how India is using high-tech industries to build their economy.

National Geography Standards

Standard 3. How to analyze the spatial organization of people, places, and environments on Earth's surface

Standard 4. The physical and human characteristics of places

Standard 6. How culture and experience influence people's perceptions of places and regions

Standard 9. The characteristics, distribution, and migration of human populations on Earth's surface

Standard 11. The patterns and networks of economic interdependence on Earth's surface

Standard 18. How to apply geography to interpret the present and plan for the future

Before Viewing

Choose one of the following leveled activities. Activity 1 is the easiest, while Activity 3 is the most difficult.

1. Ask students to study and compare a climate map and an agricultural production map of India. How do the zones of climate and agriculture coincide? What crops grow in hot climates? What crops need a wet climate? Which crops can be grown in dry areas?

Crops are normally restricted to climate zones favorable to their growth. However, people can adapt them to various zones. For example, dry areas can be irrigated.

2. Have students use Internet or library resources to investigate what kinds of goods are imported and exported in India. Who are India's major trading partners? Where are India's principal ports?

India's largest trading partner is the United States. Other major trading partners are Saudi Arabia, Germany, Belgium, Kuwait, the United Kingdom, Japan, and the United Arab Emirates. India mainly exports textile goods, gems and jewelry, engineering goods, chemicals, leather goods, and software. Its leading imports are crude oil, machinery, fertilizer, and chemicals. The country's principal ports in the east are Chennai, (Madras), Kolkata (Calcutta), and Visakhapatnam. Principal western ports are Mumbai (Bombay), Cochin, and Kandla.

3. Ask students to investigate the social structure and the role of women in India. (India's social structure is based on the traditional caste system, although the Indian Constitution outlaws the designation of a class of "untouchables.") How does the social structure assign people to positions in society by virtue of their parents' socioeconomic background? How has the social structure affected the ability of people of low social status to gain success outside of the traditional roles assigned to them by the prior caste system? How is the role of women changing in Indian society?

While not officially recognized by the government, the caste system is still widely followed by Hindus. Under this system, people born into a particular station in life are seldom, if ever, able to rise to another social and economic level. Women have a much more open life in cities. Rural India is still very conservative in religion and in gender roles. Therefore, women face a harsher life in most rural Indian settings.

More about India

- India's economy encompasses traditional village farming, modern agriculture, handicrafts, a wide range of modern industries, and a multitude of support services.
- More than a third of India's population is unable to afford adequate food. At the same time, the export of software services has become the fastest-growing sector of India's economy.
- India's location along major Indian Ocean trade routes, coupled with vast human resources, makes the country a dominant force in South Asia.

While Viewing

To provide a more interactive viewing experience, pause the video at these points for discussion.

Pause Viewing 1

Pause the video after Nicki, Beau, and Rodney explore Bangalore and interview local Indian students. Ask these questions:

- What subjects do Indian students study in school?
  Physics, chemistry, social studies, languages, computer science, and economics
- What languages are Indian students expected to learn?
  Hindi, English, and the local language

Pause Viewing 2

Pause the video after Nicki and Beau talk to Vijay Kumar from World Vision. Ask these questions:

- What problems are created by the daily arrival in Bangalore of more than 1,000 immigrants from rural areas?
  The increased population leads to housing shortages, overcrowded schools, unemployment, overuse of the road system, and a shortage of fresh water.
- Who has benefited from the development of technology industries? Who is left out?
  Educated people with university degrees have benefited. The majority of India's people, who lack the basic information technology skills, have been left out.

Pause Viewing 3

Pause the video after the students interview Naresh Narasimhan, Bangalore's city planner. Ask:

- What are some of the differences between typical American housing and Indian housing?
  Most American homes are single-family structures. In India, such buildings are not cost effective and do not meet housing needs. Apartment buildings and condominiums are better utilized.
- What is one way to help reduce overcrowding in India's cities?
  One way is to provide incentives for people to stay in rural areas. Incentives would include increasing employment opportunities and improving schools.

After Viewing

Key Questions

The following key questions are the focus of *India: Population and Resources.* A Key Question handout on page 80 enables students to take notes on possible answers. Discuss the key questions:

1. How do India's large population and economic development interact?

About 67 percent of India's population works in agriculture, and 27 percent work in industry and services. Rural people are moving to cities to look for jobs because of the lack of opportunity in agriculture. Unfortunately, most of the new jobs require high-tech skills and education, which most rural villagers do not have.

2. How is daily life affected by such a large population?

India's cities are congested, with millions of people jammed into small areas. The overcrowding creates traffic difficulties. Sewage and trash removal is difficult, and the air and water are often polluted. In Bangalore, 25 percent of the people do not have clean water in their homes. Although daily life is very good for middle and high-income families, they are a small percentage of the city's population.

3. How has India been affected by world economic growth?

India has become a technological center. A large number of students graduating from the schools each year are prepared for information technology (IT) and other computer and engineering jobs. Many of them have left for jobs in the United States and other industrialized countries, but there also are growing opportunities for these educated men and women in India. The expectations of upper middle- and middle-class women especially are changing. As they marry into families, they are seen as providing supplemental incomes. So there is greater focus on women's careers and less on their having many children. The smaller families allow for a greater concentration of educational resources for both boys and girls. However, the growth in educational and employment opportunities has not reached most Indians, especially in rural areas. Rural women still live traditionally, gathering firewood, cooking, and taking care of their families. Many rural people lead poor lives and rely on large, extended families to help them survive.

4. What resources does India possess that contribute to its role in a global economy?

India has motivated young people who are educated in modern technology. The people of India are also a resource for companies from Europe and the United States because they speak English, which enables them to coordinate local production with international markets.

5. What roles do young people and women play in India's economy?

Young people have a vital role because they are being trained to help the economy incorporate technology. Educated women in India today have opportunities in business. They are becoming more prominent in a variety of jobs, including management and technology.

Activities

Use these activity options to reinforce the concepts in the video.

Research Paper
Divide the class into small groups for research. The Ganges River supplies a large percentage of Indians with water for agriculture and domestic use. Investigate why the Ganges River is considered holy and what special properties it is believed to contain. How has the population increase negatively affected the Ganges? What are the biggest problems with water quality in the river? What is being done to address and solve these problems?

Ideas in Action
Have students in groups of five research the lives of people in India's various social structure classifications (Indian caste types, e.g., Brahmans, Kshatriyas, Vaisyas, Sudras, and the Panchamas). After using Internet or library resources to study the daily life of these caste members, have each group develop a matrix contrasting life in each classification. The students should include the positive and negative events their caste faces every day.

Map Activity
Provide students with two base maps of India—one representing summer, the other winter. Using an atlas or physical geography textbook, have students gather information about seasonal atmospheric pressures and winds in India. For each map, have them draw the Intertropical Convergence Zone (ITCZ), high pressure zones, and low pressure zones. Have them draw arrows to indicate winds between the pressure zones. Then have them shade in summer rains, brought in by the warm, moist monsoons blowing across the subcontinent from the Indian Ocean. Have them explain what causes the monsoons.

Oral Presentation
Population geography is often supplemented with a discussion of the four-stage Demographic Transition Model, which corresponds to the stages of industrial and economic development. Stage one, represented by undeveloped countries, has equally high birth and death rates, which results in a balanced population. In stages two and three, death rates decline, but birth rates stay high. This leads to a population explosion. In stage four, industrialization leads to education, high employment rates, improved health care, and birth control. As a result, both birth rates and death rates decline. Have students consider this model in small groups to decide which stage India is currently in. Students should estimate how long it will take India to reach stage four. Have each group give a brief oral presentation of their conclusions.

Learn more about . . .

- the Demographic Transition Model and population growth projections for India in H. J. de Blij and Peter O. Muller's *Geography: Realms, Regions, and Concepts* (New York: Wiley, 2000).
- the United Nations Population Fund, which assists developing countries with reproductive health and family planning, at *http://www.unfpa.org.*

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Have students answer the following key questions about their own community. How has your community been affected by world economic growth? What resources does your community possess that could contribute to the global economy? What roles do young people and women play in your community's economy? The answers can be based both on the students' opinions and by their interviewing family members, business owners and employees, and the local chamber of commerce.

Cross-Curricular Activity: Mathematics

Using an atlas or current census information, ask students to calculate the population density of India (population/square mile). Then have them calculate the population density of the United States and their home state. How do the population densities compare? What might account for the differences in density? What advantages or disadvantages would there be if the population density of the United States were equal to that of India?

Making Global Connections

Have students research the demographics of India's population, including age structure, population growth, birth rate, death rate, migration rate, and infant mortality rate. Then have them gather similar data about other widely separated countries such as the United States, China, Kenya, the United Kingdom, and Brazil. Have the students compare and contrast the information and speculate on the reasons behind the differences.

Name_____ Date _____

India: Population and Resources

Key Terms, Names, and Concepts

Bangalore—city of more than four million people in southern India; a major technological center

emigration—movement of people from their home country or region

infrastructure—basic services that allow a city or country to function, including roads, railways, water treatment, waste disposal, communications facilities, and electric lines

in situ—use of local resources, such as housing materials gathered, built, or made on site, not prefabricated

IT—information technology

N.G.O.s—nongovernment organizations; usually nonprofit organizations that provide services for needy people

PlanetAsia.com—one of the largest information technology companies in India

poverty line—minimum income level, established by a national or international standard, needed to provide the basic needs for a family

rainwater harvesting—collection of rainwater to use for drinking

Silicon Valley—the concentration of high-tech industries in a region near San Francisco, California

Name_____ Date _____

India: Population and Resources

Key Questions

1. How do India's large population and economic development interact?

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2. How is daily life affected by such a large population?

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3. How has India been affected by world economic growth?

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4. What resources does India possess that contribute to its role in a global economy?

_____

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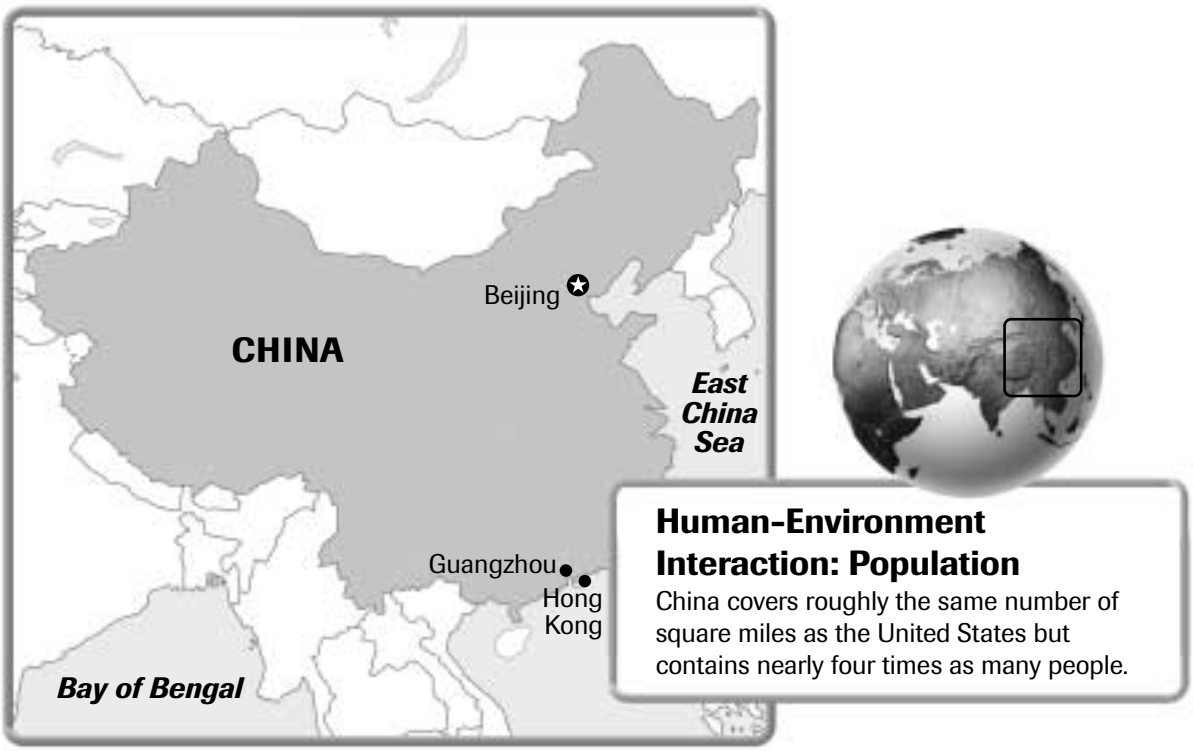
5. What roles do young people and women play in India's economy?

_____

_____

China: Food for a Billion Plus



Location

China is the third largest country in the world in area and the largest in population. The country faces many challenges in transforming its economy into that of an industrialized nation. As people leave farms for cities to find higher pay and greater amenities, the rural sector must find a way to use technology to increase agricultural yields. China's challenge is to introduce more modern farming techniques without causing long-term environmental damage.

Hong Kong is one of the most modern cities in China. Hong Kong was a British colony from 1860 to 1997. Under Chinese control since 1997, Hong Kong continues to be a Western city in many respects. It is located at 22°15' north latitude and 114°10' east longitude. Since the city is below the Tropic of Cancer (latitude 23°30' N), residents of Hong Kong technically live in the tropics. The warm climate enables farmers to grow two or three crops of rice per year.

Beijing, China's capital, is located in the northern part of the country, at 39°56' north latitude and 116°24' east longitude. With a latitude and climate similar to those of Denver, Colorado, Beijing has mild summers and cold, harsh winters. Because it is too cold to grow rice in northern China, most of the region's farmers raise wheat, like farmers in the Great Plains region of the United States. Northern China is the most industrialized part of the country, and its energy demands are constantly growing as the manufacturing sector of the economy expands.

Introducing China

The Chinese civilization may be the oldest continuous civilization on earth. How has it achieved such success? The answer begins with agriculture. A civilization cannot arise unless people's basic needs for food, water, and shelter are met. By trial and error over thousands of years, the Chinese have developed sustainable and productive means of growing rice and other foodstuffs. Their success has led them to become the most populous country in the world. Unfortunately, their traditional agricultural methods can no longer keep up with the country's rate of population growth. The Chinese must now choose to modernize and increase food production or somehow decrease their nation's population.

Food production is important everywhere, but no other country depends on such a relatively small amount of arable land to feed so many people. Students' study of agriculture in China should lead into discussions about the more advanced agricultural techniques used in Europe, as well as less advanced methods, such as the slash-and-burn farming practiced in the Congo and Brazil. In China, because of the nation's range of climates, each region has its own key crops, concerns, and cuisine.

Additional resources to introduce China could include

- *Geography Realms, Regions, and Concepts* (H. J. de Blij and Peter O. Muller)
- *The Mongol Conquests: Time Frame A.D. 1200–1300* (Time-Life Books, 1989)
- *In Search of Genghis Khan* (Tim Severin, 1992)
- a comparative world atlas
- *classzone.com*—select *World Geography* for links, current data, and activities related to East Asia

Key Questions

This video, *China: Food for a Billion Plus,* focuses on these key questions:

1. **How does a nation of over 1 billion people feed itself?**
2. **How does China produce, manufacture, and distribute food to such a large population?**
3. **How did industrialization and technology affect urban and rural cultures and economies?**
4. **How does a population this size affect the environment?**

Teaching with the Video

Running Time: 25 minutes

Synopsis

Lyndi, Corey, and Jennifer travel to China to study the country's agricultural methods and their impact on the environment. In Hong Kong, they learn about modern city life and the agriculture needed to support it. Their journey also takes them to Guangzhou, Beijing, and the Great Wall. Experts explain the importance of technology in agriculture, along with the environmental concerns arising from the expansion of food production and industry in China.

A list of key terms, names, and concepts covered in this video (page 89) will help familiarize students with important vocabulary.

Standards and Objectives

China: Food for a Billion Plus covers the following objectives and standards.

Objectives

- Use map analysis and research skills to compare China to the United States in terms of climate, agriculture, and population density.
- Develop an understanding of the important choices that the Chinese are making as they attempt to meet their food and energy needs.

National Geography Standards

Standard 1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective

Standard 2. How to use mental maps to organize information about people, places, and environments in a spatial context

Standard 4. The physical and human characteristics of places

Standard 5. That people create regions to interpret Earth's complexity

Standard 6. How culture and experience influences people's perception of places and regions

Standard 11. The patterns and networks of economic interdependence on Earth's surface

Standard 14. How human actions modify the physical environment

Before Viewing

Choose one of the following leveled activities. Activity 1 is the easiest; Activity 3 is the most difficult.

1. Ask students to use library resources or search the Internet to identify five foodstuffs or agricultural products Americans commonly eat or use that originated in China. Obtain samples for distribution in class.

Encourage students to be creative with their choices. For example, soybeans are used for making tofu, as additives to other foods, and even in the manufacture of an environmentally friendly ink. If you are unsure which foodstuffs originated in China, check out The Visual Food Encyclopedia.

2. Ask students to find maps and information about agriculture in China. Have them use their knowledge of physical and cultural geography to infer why particular plants and animals are grown in certain regions.

Provide students with an agricultural and a physical map of China. Have them use an atlas as a climate reference. Students should identify precipitation and temperature as the most important factors in the distribution of crops and livestock.

3. Ask students to answer these questions:

- What Chinese products are found in local stores?
- Can you trace a Chinese product from a local store back to the company of origin?
- How did the product get here from China?
- How can importing such a product be less expensive than producing the product locally?

Students will probably be surprised by the number of Chinese products they have at home or can buy from a local discount mart. The goal is to have them appreciate the production capacity of China and relate it to the wages and standard of living of the Chinese people, which are very similar to those of U.S. residents 100 years ago.

More about Climate and Geography

- China and the United States lie in a similar range of latitudes. However, the Chinese climate is colder because the country includes the highlands of Tibet and is bordered by Siberia.
- Precipitation decreases from east to west in China. Therefore, the predominant type of livestock changes from pigs, to sheep, to goats, to camels as one travels westward.

While Viewing

In order to provide a more interactive viewing experience, pause the video at these points for class discussion.

Pause Viewing 1

Pause the video when the students are in the Jumbo Floating Restaurant, after Dr. Lee mentions subsistence and commercial agriculture. Ask,

- What are the main differences between subsistence agriculture and commercial agriculture?
  Subsistence farmers raise many different foodstuffs to feed their families, selling any extra food at market or trading it for what they need. Commercial farmers use modern seeds and equipment and specialize in a few crops, which they sell for profit.

Pause Viewing 2

Pause the video when the students arrive in Guangzhou. Ask these questions:

- What crops are well suited for being raised on small farms or in greenhouses?
  bok choy, green peppers, lotus, onions, lettuce
- What problems result from overuse of soil?
  soil depletion, desertification, chemical pollution
- How can farmers better manage their land?
  conservation practices, improved technology

Pause Viewing 3

Pause the video when the students arrive at the U.S. embassy in Beijing. Ask,

- What are China's main agricultural imports?
  pork, pork and beef offal, lumber, soybeans
- What are China's most important agricultural exports?
  vegetables and processed foods
- What is China's biggest challenge with regard to its agricultural economy?
  It must feed its population and have enough left over to sell in foreign markets.

After Viewing

Key Questions

The following key questions are the focus of *China: Food for a Billion Plus*. A Key Question handout on page 90 enables students to take notes on possible answers to these questions. Discuss the key questions:

1. How does a nation of over 1 billion people feed itself?

Approximately 75 percent of the Chinese population is involved in agriculture. China imports some food products, such as meats, that require large amounts of space and energy to produce.

2. How does China produce, manufacture, and distribute food to such a large population?

The Chinese maximize the use of arable land. Local, regional, and international distributors transport food products.

3. How did industrialization and technology affect urban and rural cultures and economies?

Higher wages in cities have drawn people away from rural areas. As a result, rural areas faced with labor shortages must modernize their equipment and methods. More jobs in manufacturing mean more amenities for urban workers.

4. How does a population this size affect the environment?

The environmental pressure resulting from the need to feed a billion people and dispose of the waste they produce is staggering. Overuse of northern and western lands has led to desertification. Water and air quality are poor in some areas. Industrialization has brought new jobs, but it also creates toxic wastes that must be disposed. Energy is also a big issue. The building of the Three Gorges Dam is one response to the need for more energy; but some believe that this dam, and other energy projects like it, may cause ecological problems.

Activities

Use these activity options to reinforce the concepts in the video.

Oral Presentation
Divide the class into teams to investigate the questions from the video further. Have each team conduct research on the Three Gorges Dam outside class. They should try to answer three questions: Why is the government in favor of building the dam? Why are some environmentalists opposed to the dam? How will the dam affect the central Yangtze Valley? Each team should compile their strongest arguments and present them orally to the class.

Debate
Divide the class into small groups to debate whether the Chinese government should dictate the number of children married couples can have. Each team should use logic to make their argument about this issue of individual rights and the needs of the larger community.

Map Activity
Randomly distribute the names of three Chinese cities to individual students or small groups. Ask students to locate the cities on a map and to speculate how they might travel to them. Suggest using travel resources or the Internet for further details about reaching their destination. Then have students use a world map to explain the routes and modes of transport they would use.

Map Activity
Distribute physical, climatic, and population-density maps of China to small groups of students. Ask the groups to list reasons why some areas have few people and others have large numbers of people. Encourage students to infer the effects of temperature and precipitation on settlement patterns and to note regions that may be too harsh for development. Lead them in a discussion of the ways in which fertile soil, mineral resources, and access to transportation permit large concentrations of people.

Learn more about agriculture and the environment in . . .

- Carl Sauer's *Agricultural Origins and Dispersals* (Cambridge, MA: MIT Press, 1969).
- *Global Issues 01/02* (Guilford, CT: McGraw-Hill/Dushkin, 2001).

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Set up a project to investigate what foods are grown in your area and where they are marketed. Have students:

1. Visit a farm or farmers' market.
2. Calculate the percentage of local products that they use on a regular basis (for example, in a given week). Students can gather information from food labels and from people working in the produce section of a grocery store.

Cross-Curricular Activity: Nutrition

Assign a trip to a Chinese restaurant. Have students try to link various types of food (Mandarin, Hunan, Mongolian, Szechwan) to their regions of origin. Ask, Was the restaurant you visited traditional, or was the food Americanized? (Students should be able to get this information from the owner or a server.) How does Chinese food in the United States differ from food in China? How does the nutritional content of a traditional Chinese meal differ from that of a typical American meal?

Making Global Connections

Have students use information from the U.S. Department of Agriculture, the U.S. Department of Commerce, and other sources to create a large map showing the movement of products between the United States and China. Instruct them to use arrows to indicate the flow of trade, with the size of each arrow proportional to the volume or worth of the trade in the product it represents.

Name_____ Date _____

China: Food for a Billion Plus

Key Terms, Names, and Concepts

Beijing—(*Peking*) the capital city of China and China's economic, political, and cultural nucleus for more than 700 years

bok choy—Chinese cabbage

commercial agriculture—agriculture that is dominated by a single crop, grown to be sold for profit

desertification—the gradual transformation of a region of pasture or timberland into a desert, caused by overuse of soil and destruction of vegetation

erosion—the removal of topsoil by wind or water

genetic modification—the alteration of genetic material in food plants and animals in order to maximize yield, to increase resistance to pests, or to reduce the time needed for a plant or animal to mature

Guangzhou—a large city in the Guangdong province of China

Hong Kong—one of China's most modern cities, which passed from British to Chinese control in 1997

lotus root—the root of a flowering water plant, believed to increase a person's energy level and mental concentration when eaten

population density—the average number of people per unit area in a region

soil depletion—the loss of key nutrients in soil, making it more difficult to grow crops

subsistence agriculture—farming engaged by families in order to feed themselves, usually with very little left over to sell

Name_____ Date _____

China: Food for a Billion Plus

Key Questions

1. How does a nation of over 1 billion people feed itself?

_____

_____

2. How does China produce, manufacture, and distribute food to such a large population?

_____

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3. How did industrialization and technology affect urban and rural cultures and economies?

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4. How does a population this size affect the environment?

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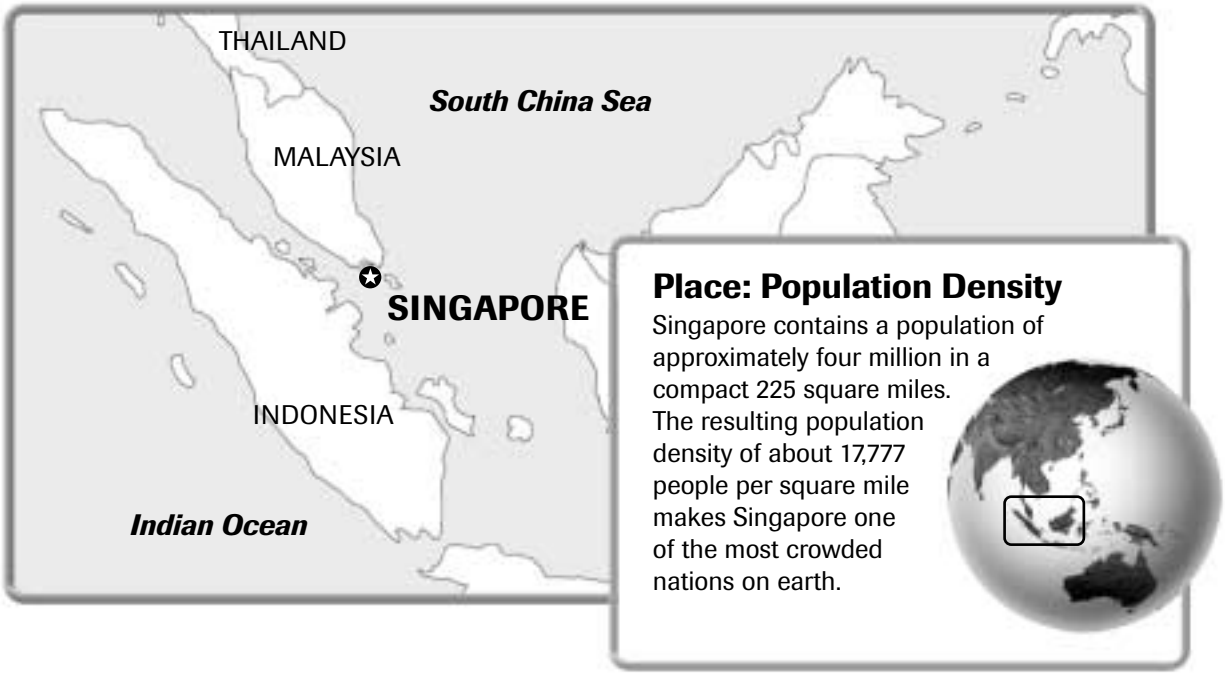
Singapore
Industrialization and Migration



Location

Located on the southern tip of the Malay Peninsula along the Strait of Malacca, Singapore consists of a main island and nearly 60 small islands. Situated at 1° north latitude and 103° east longitude, Singapore is just 85 miles north of the equator. It was originally covered with tropical rain forest. The country owes much of its economic success to its location. Historically, the Strait of Malacca was the primary shipping route connecting Asia with Africa and Europe. Developed by the British, Singapore combined strategic military value (the control of shipping) with economic value as a natural stopping point for ocean-going traffic.

Although the main island of Singapore is surrounded by 54 smaller islands, only a few of these islands are inhabited. The main island is only about 14 by 27 miles. However, new land is constantly being created through the process of deposition—during which shallow waters are filled in with land. Singapore's main and smaller islands have two distinct monsoon seasons: the northeastern monsoon from December to March and the southwestern monsoon from June to September. During the periods between the monsoon seasons, Singapore has frequent afternoon and early evening thunderstorms. In addition, seasonal forest fires in Indonesia often cause smoke and haze over the islands. Singapore is surrounded by seawater and has limited natural freshwater resources.

Singapore's location might lead one to believe that its cultural makeup would be mostly Malays, however, the majority of Singapore's residents are Chinese (77 percent), while the Malay comprise 14 percent of the population, and 8 percent are of Indian heritage.

Introducing Singapore

In the 1800s, the British founded modern Singapore as a trading station. In the late 1800s, they grew rubber in the tropical climate. Today, rubber remains an important export product. Arriving from Malaysia and Indonesia, the raw rubber is processed and then shipped to Japan and other world markets. Oil refining is another important activity. Crude oil from Southeast Asia is brought in by tanker to be refined. Then the fuel products are shipped to Asian industrial centers. Timber, spices, rice, and other foods are imported from surrounding countries, processed, and then exported.

In addition to its traditional economic base, Singapore has rapidly expanded its high-tech industries. The incentives the country has offered to multinational corporations have led to a boom in banking as well as computer information and services. Singapore is known for its strict legal system and authoritarian government. The city itself is organized to run efficiently in regard to energy, traffic, waste disposal, and other functions.

Additional resources to introduce Singapore could include

- a Southeast Asia or Singapore cookbook, such as *The Visual Food Encyclopedia,* (Macmillan, 1996). This book describes foods (including spices), where they originated, and how they are used
- a map of international trade routes showing the shipping traffic around Singapore
- *classzone.com*—select *World Geography* for links, current data, and activities related to Southeast Asia

Key Questions

This video, *Singapore: Industrialization and Migration,* focuses on these key questions:

1. Who is immigrating to Singapore? Why?

2. How has immigration affected Singapore?

3. How did Singapore become an industrial center?

4. How has industrialization changed Singapore?

5. What is at the heart of Singapore's economic success?

Teaching with the Video

Running Time: 25 minutes

Synopsis

Nicki, Beau, and Rodney travel to Singapore to study industrialization and migration. At the Port of Singapore, the trio learns how the port handles over 800 ships at any one time. At Hewlett-Packard's Singapore factory, Nicki, Beau, and Rodney explore the business history and advantages of the country's location. Later, they discuss immigration with geographer Kenneth Lim and discuss how Singapore has kept its economy running smoothly over the years. Lim's information is bolstered with a discussion with city planner Louisa Khoo. Later, they meet with students from Singapore's three primary ethnic groups by traveling to the Malay Village, Chinatown, and Little India.

A list of key terms, names, and concepts covered in this video (page 99) will help familiarize students with important vocabulary.

Standards and Objectives

Singapore: Industrialization and Migration covers the following objectives and standards.

Objectives

- Learn about the value of a multicultural society.
- Explore the roles of three different ethnic groups in Singapore.
- Discuss the potential gains related to government planning for communities and businesses.
- Understand the value of location for economic success.

National Geography Standards

Standard 4. The physical and human characteristics of places

Standard 6. How culture and experience influence people's perceptions of places and regions

Standard 9. The characteristics, distribution, and migration of human populations on Earth's surface

Standard 11. The patterns and networks of economic interdependence on Earth's surface

Standard 16. The changes that occur in the meaning, use, distribution, and importance of resources

Standard 18. How to apply geography to interpret the present and plan for the future

Before Viewing

Choose one of the following leveled activities. Activity 1 is the easiest, while Activity 3 is the most difficult.

1. Ask students to use the Internet or library sources to locate global shipping information regarding the traffic volume that passes by or stops in Singapore each year. What types of products pass through Singapore's port? What does Singapore itself import and export?

Ships from nearly every country in the world pass by or dock at Singapore. All varieties of goods pass through Singapore's port (e.g., cars, electronics, food, construction materials, petroleum, and other raw materials). Singapore is a major exporter of products from its oil refineries. However, the country requires tremendous amounts of raw materials and imports large amounts of food.

2. Ask students to use the newspaper, the Internet, or other sources to analyze the United States' shipping industry. What products or services are typical of major U.S. ports? Why do the different ports specialize in different products or goods?

The location of resources and industries contributes to each region's strengths. Some ports have tremendous labor resources or purchase markets (like New York City), while others are oil-refining or industrial centers (Baton Rouge, Louisiana; Houston, Texas). Some ports have a strong seafood industry (Seattle, Washington; San Francisco, California). Others have strong technology sectors (San Francisco, Los Angeles, Seattle).

3. Ask students to explore the multiculturalism of Singapore, or Southeast Asia in general, with a regional cookbook. What unusual food combinations are found in Singapore? What are some native Malay foods? What Chinese and Indian influences can be seen in dishes? How are Singaporean meals different from a typical American meal?

Answers will vary. Singapore's population eats large amounts of rice and seafood, such as crab and tuna. Typical meals include tropical fruits and spices native to Singapore and Southeast Asia. Malay traditional meals use very hot peppers with coconut milk in the sauces. Chinese influences are found in stir-fry dishes, in which the use of ginger and soy sauce are common. Indian influences can be seen in the spices used for cooking, such as curry powder. Curry contains a combination of spices ground together. Singapore's diet has more foods of Asian and Indian influence than the typical American meal.

More about Industrialization and Migration

While some Chinese immigrated to Singapore before World War II, many others joined them following the Communist revolution in China led by Mao Zedong in 1949. Chinese immigrants have continued to be attracted to Singapore, since earlier immigrants found success and promoted the recruitment of more workers from their homelands. When China regained control of Hong Kong from the British in 1997, a new wave of Chinese immigrants arrived in Singapore.

While Viewing

In order to provide a more interactive viewing experience, pause the video at these points for class discussion.

Pause Viewing 1

Pause the video after the students visit the Port of Singapore. Ask:

- Why is Singapore's port its single strongest asset?
  Trade is the cornerstone of Singapore's success. Without the ability to bring raw materials in and ship finished goods out, the industries would need to locate somewhere else.
- How is Singapore's port run so efficiently?
  Singapore's port uses high-tech handling equipment to move 48,000 cargo containers on an average day. Highly skilled crane operators use computerized equipment to organize container storage, streamlining the process of unloading and loading of hundreds of ships.

Pause Viewing 2

Pause the video after Nicki, Rodney, and Beau talk with Diana Johari in the Malay Village. Ask these questions:

- What have Malay residents and immigrants gained from Singapore's becoming an independent country?
  They are in a more culturally diverse nation with increased economic opportunity. The Malay residents have good educational opportunities.
- How are neighborhoods organized in Singapore?
  Neighborhoods are ethnically diverse. There are numerous multi-story apartment towers. This leads to diversity in neighborhood schools, so children see each other as equals and learn to work with and accept other cultures at an early age.

Pause Viewing 3

Pause the video after the interview with Prakash in Little India. Ask:

- Why was Little India built in Singapore?
  Little India was built by Indian immigrants who settled in that neighborhood and established an Indian community there.
- Why did Prakash's father choose to move to Singapore?
  How did his occupation affect his choice?
  Prakash's father is in the spice trade. Singapore is a global center for the spice trade. The country also offered a higher quality of life compared to most parts of India.

After Viewing

Key Questions

The following key questions are the focus of *Singapore: Industrialization and Migration.* A Key Question handout on page 100 enables students to take notes on possible answers to these questions. Discuss the key questions:

1. Who is immigrating to Singapore? Why?

Malays, Chinese, Indians, and many other nationalities, including Americans, are immigrating to Singapore. Immigrants often come for business opportunities or cultural amenities.

2. How has immigration affected Singapore?

Immigration has provided Singapore with the multicultural society it has today. Immigrants bring in labor and new ideas. Both help businesses to grow. Immigration also brings in new foods, music, and other cultural influences that can improve the quality of life.

3. How did Singapore become an industrial center?

Singapore's geographical location placed the country at the crossroads of shipping lanes, giving it good potential for a port. Labor and raw materials were brought in to strengthen the economy, such as in the rubber industry. The government provided tax breaks and other incentives for businesses to locate in Singapore. The success of business and trade has led to more labor immigration and even more business growth.

4. How has industrialization changed Singapore?

As Singapore became richer, the potential for pollution became a challenge. The waste from the increasing numbers of people and businesses had to be cleaned up if Singapore was to continue to thrive. Industrialization also affected Singapore's culture by attracting a diverse labor force looking for work. Due to British business influence and colonial interests, the English language was adopted in schools and in business.

5. What is at the heart of Singapore's economic success?

There is a combination of the government's promotion of business, effective use and education of the labor force, maintenance of a large and efficient port, and favorable geographic location. Singapore's high standard of living attracts skilled workers from other parts of the world.

Activities

Use these activity options to reinforce the concepts in the video.

Research Paper
Have students conduct research on immigration. Their goal is to prepare a paper about the benefits that immigrants bring to a country. Why do some countries actively promote immigration? What kinds of jobs do immigrants normally get? What types of economic activities rely on immigrant labor?

Map Activity
Provide a resource map of Southeast Asia. Compared to Singapore, which countries have a similar combination of resources and location? Have students study these countries, comparing their physical, social, and economic bases with Singapore's. Which countries are strong and growing? Which are stagnant or declining? Do their goals and resources complement those of Singapore, or are they in competition?

Oral Presentation
How does Singapore's population density vary from that of its neighbors? What are the advantages and disadvantages of high population density? Have students organize into groups. Have each group decide whether it would choose to live in an area of high population density or one of low population density, and then present its choice and reasoning to the class.

Exploring the Future
What will Singapore need to do to maintain its economic advantages in its region? Develop a list of the strengths that have led to Singapore's current success. Which strengths can be improved? How? What new areas should Singapore explore in order to keep its economy robust and diverse?

Learn more about . . .

- the combination of geographic qualities that lead to long-term success. Study Sir Halford Mackinder's heartland theory and Nicholas Spykman's rimland theory. See Deblij and Muller, *Geography Realms and Regions,* 10th edition (New York: Wiley, 2001).
- Johan Heinrich von Thünen (1783–1850), a German agriculturalist who created a geographical model by using transportation modeling to calculate land value. See Arther Getis and Judith Getis, *Introduction to Geography,* 7th edition (New York: McGraw Hill, 1999).

Extending the Lesson

The following activities provide opportunities to extend the lesson.

Exploring Local Geography

Transportation has played an important part in Singapore's economic success. What is the most important transportation system for your community? How much traffic uses this transportation system? What types of local businesses depend on the transportation system for their livelihoods? Could your community benefit from further transportation development? What kind of transportation would be most beneficial? What other economic markets would be linked to your community with the development of more transportation infrastructure?

Cross-Curricular Activity: Mathematics

Use an atlas to determine the population density of various countries in Southeast Asia. How is population density measured? Make a large base map of Southeast Asia. Then take black paper and cut out circles that represent population density. How can a scale be designed to allow you to make circles that can fit on the map and represent the differences in population density? You can use radius, diameter, or a circumference to determine a scale mathematically. Explain your method.

Making Global Connections

Singapore has been nicknamed the Silicon Valley of the East. Research this comparison more closely. Use the following criteria to compare California's Silicon Valley to Singapore: world-class research universities; a large pool of highly educated, technically skilled workers; close proximity to a cosmopolitan urban center; abundant venture capital; a locally based network of global business linkages; and a high-amenity environment regarding housing, climate, natural beauty, and recreational opportunities.

Name_____ Date _____

Singapore: Industrialization and Migration

Key Terms, Names, and Concepts

Eurasian—a person of mixed European and Asian descent

immigration—the movement of people into a new country to settle permanently

industrialization—the development of industrial methods of production and manufacturing with all the resulting changes in lifestyle, transportation, and other aspects of society

IT—information technology

Little India—a section of Singapore that houses Indian-style restaurants, temples, and architecture

meritocracy—a system in which a country rewards people on their own accomplishments, not according to family background or other reasons

migration—the movement of people

multicultural—containing a diversity of cultures

R&D—(research and development) a term used by businesses to describe their investment in future product development and methods

strategic planning—a comprehensive strategy to prepare for future success

urbanization—the development of an area of the countryside or of villages into a town

Name_____ Date _____

Singapore: Industrialization and Migration

Key Questions

1. Who is immigrating to Singapore? Why?

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2. How has immigration affected Singapore?

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3. How did Singapore become an industrial center?

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4. How has industrialization changed Singapore?

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5. What is at the heart of Singapore's economic success?

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