### UNIT PACING CHART

<table>
<thead>
<tr>
<th>Day</th>
<th>Unit</th>
<th>Chapter 1</th>
<th>Chapter 2</th>
<th>Chapter 3</th>
<th>Chapter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unit</td>
<td>Chapter Opener, Section 1</td>
<td>Chapter Opener, Section 1</td>
<td>Chapter Opener, Section 1</td>
<td>Chapter Opener, Section 1</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Section 1</td>
<td>Section 2</td>
<td>Section 2</td>
<td>Section 2</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Section 2</td>
<td>Section 3</td>
<td>Section 3</td>
<td>Section 2</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Review, Chapter Assessment</td>
<td>Review, Chapter Assessment</td>
<td>Review, Chapter Assessment</td>
<td>Section 3</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Section 4</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Review, Chapter Assessment</td>
</tr>
</tbody>
</table>

### Unit 1: The World

**GPS (Latitude/Longitude) Treasure Hunt** This activity provides students with a basic understanding of latitude and longitude and usually takes 30 minutes to complete. You will need three or more GPS units and several plastic tent stakes. Prior to class, use a permanent marker to write a different number on each tent stake. Space the stakes far apart around the school property, such as on the athletic field. Using a GPS unit, record the latitude and longitude locations of each stake on sticky notes. Divide the class into teams so that each team has a GPS unit, and select the student who will hold each team’s unit. Assemble the teams at a designated starting point and give each team leader one of the sticky notes. Each team then uses the sticky note and GPS unit to locate their stake. Reward the first team to find and return its stake.

**Brad Bowerman**
Lakeland Junior/Senior High School
Jermyn, Pennsylvania
Dear Geography Teacher:

Unit 1 is crucial to you as a teacher. It explains all of the elements of geography, the people, places, and environments, and how geographers look at our world. The study of geography allows us to make sense out of varied physical environments, diverse cultural systems, why people live where they do, and how they make a living. Unit 1 addresses the new technologies that geographers use to map and understand where and how we live. As an example, you only need to watch television ads for automobiles to see how global positioning systems (GPS) and geographic information systems (GIS) are inching their way into our everyday lives.

Unit 1 introduces the student to the elegance of geography with superb pictures, maps, and explanatory text. The chapters also clearly send the message to the student that “If you like geography and if you learn it well, there are exciting jobs and careers for you. You can be a geographer for life and pursue something that is both fun and interesting.”

Senior Author
The World

The four chapters of this unit introduce students to the relationship between physical geography and the diversity of human culture. The chapters in this unit help students understand this concept by exploring the following:

- The skills of geographers
- The physical processes and characteristics of Earth
- Earth’s climate
- Human cultures around the world

Why It Matters

The world today in the twenty-first century is a much smaller place than it was at the time of your grandparents. Advances in technology, communications, and transportation have narrowed vast distances and made neighbors of the world’s people. The Internet, for example, now puts you in immediate touch with people in other parts of the world. In the years to come, you and your generation—here and elsewhere—will be challenged to use this and other technology to make the world a better place for everyone.

Activity: Unit Launch

Why study the world? Ask: Why do you eat the foods you eat the way you eat them? (People tend to eat foods that are grown in their general region and that their culture encourages them to eat. More specifically, people tend to eat the foods their families eat, and prepare and eat these foods the way their families prepare and eat them.) Inform students that the foods we eat and the way we eat them tell us a great deal about who we are. We eat food that reflects our physical geography, and we eat food in a way that reflects our human geography. People elsewhere eat different foods in different ways because their physical geography and human geography are different from ours. Have students address this question again at the end of the unit. OL

NATIONAL GEOGRAPHIC

nationalgeographic.com/education

NGS ONLINE This online resource provides lesson plans, atlas updates, cartographic activities with interactive maps, an online map store, and geographic links.
INTRODUCTION

THE WORLD
To learn more about the basics of geography visit www.nationalgeographic.com/education.

Chapter 1: How Geographers Look at the World 2–27
Chapter 2: The Physical World 28–47
Chapter 3: Climates of the Earth 48–67
Chapter 4: The Human World 68–113

Visit events.glencoe.com to bring news and current events into your classroom. McGraw-Hill’s current events Web site features high-interest news stories with student-directed projects and activities.

Visual Literacy  Tourism is a relatively recent phenomenon in human history. Travel simply to see another land or culture has historically been too dangerous for most people to undertake. In the photo, we see a young man from Japan visiting with a Banjari woman in her native India. The Banjari are an ethnic group closely related to the Roma, a European ethnic group formerly called Gypsies. Like the Roma, the Banjari were a nomadic people. Historically, the Banjari lived mainly in the Thar desert region of northwestern India. Today, many Banjari live in cities. The bright costumes and elaborate jewelry worn by the woman in the photo are typical of the clothing and ornamentation worn by Banjari women of the past and present.

More About the Photo

Examine a Globe  Hold a globe and ask students to look at it as you ask questions. Ask: What is this? (a globe) Ask: What is the difference between a globe and the Earth? (A globe is a model of the Earth.) Ask: Which end of the Earth is “up”? (Customarily the Northern Hemisphere is shown as the upper hemisphere of the globe, but the Earth itself has no correct “up” or “down.”) Ask: What does a globe show that is not human-made? (land, mountains, water) Ask: What does a globe show that is human-made? (political boundaries, cities, lines of latitude and longitude)
### Chapter Planning Guide

#### Key to Ability Levels
- **BL**: Below Level
- **OL**: On Level
- **AL**: Above Level
- **ELL**: English Language Learners

#### Key to Teaching Resources
- Print Material
- CD-ROM or DVD

<table>
<thead>
<tr>
<th>Levels</th>
<th>Resources</th>
<th>Chapter Opener</th>
<th>Section 1</th>
<th>Section 2</th>
<th>Chapter Assess</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Focus Skills Transparencies</td>
<td>1-1</td>
<td>1-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>Guided Reading Activity, URB*</td>
<td>p. 21</td>
<td>p. 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELL</td>
<td>Vocabulary Activity, URB*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>Reinforcing Skills Activity, URB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OL</td>
<td>Enrichment Activity, URB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>Location Activity, URB</td>
<td></td>
<td></td>
<td></td>
<td>p. 1</td>
</tr>
<tr>
<td>BL</td>
<td>Reading Essentials and Note-Taking Guide*</td>
<td>pp. 1–3</td>
<td>pp. 4–6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OL</td>
<td>World Literature Contemporary Selection, URB</td>
<td></td>
<td></td>
<td></td>
<td>p. 11</td>
</tr>
<tr>
<td>AL</td>
<td>National Geographic World Atlas*</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>OL</td>
<td>GIS Simulations, Strategies, and Activities</td>
<td></td>
<td></td>
<td></td>
<td>p. 4</td>
</tr>
<tr>
<td>AL</td>
<td>National Geographic World Desk Map</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>BL</td>
<td>Writer’s Guidebook for Social Studies</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>OL</td>
<td>World History Primary Source Documents Library</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AL</td>
<td>National Geographic World Regions Video Program</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>BookLink for Social Studies</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>StudentWorks™ Plus</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Section Spotlight Video Program</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>World Music: A Cultural Legacy</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>High School Writing Process Transparencies</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Chapter- or unit-based activities applicable to all sections in this chapter.

*Also available in Spanish*
- Interactive Lesson Planner
- Interactive Teacher Edition
- Fully editable blackline masters
- Section Spotlight Videos Launch
- Differentiated Lesson Plans
- Printable reports of daily assignments
- Standards Tracking System

### Teacher Resources

<table>
<thead>
<tr>
<th>Levels</th>
<th>Resources</th>
<th>Chapter Opener</th>
<th>Section 1</th>
<th>Section 2</th>
<th>Chapter Assess</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High School Character Education</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Inclusion for the High School Social Studies Classroom Strategies and Activities</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>High School Reading in the Content Area Strategies and Activities</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Success with English Learners</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Differentiated Instruction for the Geography Classroom</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Literacy Strategies in Social Studies</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Standards-Based Instruction</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Presentation Plus! with MindJogger CheckPoint</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>TeacherWorks™ Plus</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>National Geographic Focus on Geography Literacy Teacher Guide</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### ASSESS

<table>
<thead>
<tr>
<th>Levels</th>
<th>Resources</th>
<th>Chapter Opener</th>
<th>Section 1</th>
<th>Section 2</th>
<th>Chapter Assess</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Section Quizzes and Chapter Tests</td>
<td></td>
<td>p. 3</td>
<td>p. 4</td>
<td>p. 5</td>
</tr>
<tr>
<td></td>
<td>Authentic Assessment With Rubrics</td>
<td></td>
<td></td>
<td>p. 31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ExamView Assessment Suite</td>
<td></td>
<td>1-1</td>
<td>1-2</td>
<td>Ch. 1</td>
</tr>
</tbody>
</table>

### CLOSE

<table>
<thead>
<tr>
<th>Levels</th>
<th>Resources</th>
<th>Chapter Opener</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reteaching Activity, URB</td>
<td>p. 15</td>
</tr>
<tr>
<td></td>
<td>Dinah Zike’s Reading and Study Guide Foldables</td>
<td>p. 43</td>
</tr>
<tr>
<td></td>
<td>Graphic Organizer Transparencies, Strategies, and Activities</td>
<td>pp. 17–18</td>
</tr>
</tbody>
</table>

✓ Chapter- or unit-based activities applicable to all sections in this chapter.

*Also available in Spanish*
Chapter 1 Integrating Technology

Using Study Central™

Teach With Technology

What is Study Central™?
Study Central™ is an interactive, online tool that helps students understand and remember content section-by-section. It can be used alongside lessons or before a test.

How can Study Central™ help my students?
Study Central™ contains fun activities that students can use to review important content and reinforce effective study habits. Using the format of the Guide to Reading that opens each section in the textbook, Study Central™ has students write main idea statements as questions, review academic and content vocabulary, and take notes using online graphic organizers. Students can also read section summaries, take multiple-choice quizzes, and find Web links for more information.

Visit glencoe.com and enter a QuickPass™ code to go to Study Central™.

Geography ONLINE
Visit glencoe.com and enter QuickPass™ code WGC2630C1T for Chapter 1 resources.

You can easily launch a wide range of digital products from your computer’s desktop with the McGraw-Hill widget.

<table>
<thead>
<tr>
<th>World Geography and Cultures Online Learning Center (Web Site)</th>
<th>Student</th>
<th>Teacher</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Section Audio</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Spanish Chapter Audio Summaries</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Section Spotlight Videos</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• StudentWorks™ Plus Online</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Multilingual Glossary</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Study-to-Go</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Chapter Overviews</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Self-Check Quizzes</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Student Web Activities</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• ePuzzles and Games</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Vocabulary eFlashcards</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• In-Motion Animations</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Study Central™</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Nations of the World Atlas</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Glencoe Graphing Tool</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• btw — Current Events Web Site</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Web Activity Lesson Plans</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Vocabulary PuzzleMaker</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>• Beyond the Textbook</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
Additional Resources

**Biography**

The following videotape programs are available from Glencoe as supplements to Chapter 1:
- **Lewis and Clark** (ISBN 1-56-501592-4)
- **Christopher Columbus: Explorer of the New World** (ISBN-1-56-501667-X)

To order, call Glencoe at 1-800-334-7344. To find classroom resources to accompany many of these videos, check the following pages:

- **A&E Television**: www.aetv.com
- **The History Channel**: www.historychannel.com

**Reading List Generator CD-ROM**

Use this database to search more than 30,000 titles to create a customized reading list for your students.

- Reading lists can be organized by students’ reading level, author, genre, theme, or area of interest.
- The database provides Degrees of Reading Power™ (DRP) and Lexile™ readability scores for all selections.
- A brief summary of each selection is included.

**Leveled reading suggestions for this chapter:**

**For students at a Grade 7 reading level:**
- **The House on Stink Alley: A Story About Pilgrims in Holland**, by F.N. Monjo

**For students at a Grade 8 reading level:**
- **Isabel: Jewel of Castilla**, by Carolyn Meyer

**For students at a Grade 9 reading level:**
- **Italian Portraits**, by Dorothy and Thomas Hoobler

**For students at a Grade 10 reading level:**
- **Shakespeare's England**, by Horizon Magazine

**For students at a Grade 11 reading level:**
- **Amish Home**, by Raymond Bial

---

**JAMESTOWN EDUCATION**

- **Timed Readings Plus in Social Studies** helps students increase their reading rate and fluency while maintaining comprehension. The 400-word passages are similar to those found on state and national assessments.

- **Reading in the Content Area: Social Studies** concentrates on six essential reading skills that help students better comprehend what they read. The book includes 75 high-interest nonfiction passages written at increasing levels of difficulty.

- **Reading Social Studies** includes strategic reading instruction and vocabulary support in Social Studies content for both ELLs and native speakers of English.

- **Content Vocabulary Workout** (Grades 6-8) accelerates reading comprehension through focused vocabulary development. Social Studies content vocabulary comes from the glossaries of Glencoe's Middle School Social Studies texts. www.jamestowneducation.com

**NATIONAL GEOGRAPHIC**

Index to National Geographic Magazine:

The following articles relate to this chapter:
- “The Vaulting Pole,” by Joel K. Bourne, Jr., December 2006.

**National Geographic Society Products** To order the following, call National Geographic at 1-800-368-2728:
- **National Geographic Atlas of the World** (Book).

Access National Geographic's new dynamic MapMachine Web site and other geography resources at:
- www.nationalgeographic.com
- www.nationalgeographic.com/maps
Section 1: Geography Skills Handbook

Essential Question: What tools do geography skills provide? (Geography skills provide the tools and methods for us to understand the relationships between people, places, and environments.) Ask: How do geographers use these skills to interpret the past, understand the present, and plan for the future? Give an example of each. (Answers will vary but could include using historical maps to follow the movement of people, using political maps to monitor changes in political boundaries, and using GIS to plan for the construction of new roads.) Point out that in Section 1 students will learn about the skills geographers use.
INTRODUCTION

CHAPTER 1

Organizing Information

Make a Top-Tab Book to help you understand how geographers look at the world.

<table>
<thead>
<tr>
<th>Elements of Geography</th>
<th>Research Methods</th>
<th>Geography and Other Subjects</th>
<th>Geography as a Career</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reading and Writing

As you read the chapter, write at least five facts, generalizations, or observations for each of the following headings: Elements of Geography, Research Methods, Geography and Other Subjects, and Geography as a Career.

Section 2

The Geographer’s Craft

Essential Question: What are the elements of geography? (the world in spatial terms, places and regions, physical systems, human systems, environment and society, the uses of geography) Point out that in Section 2, students will learn how geographers use the six essential elements to study the Earth and its people.

Dinah Zike’s Foldables

Purpose: This Foldable will help students organize their notes about how geographers look at the world. The tabbed book will help them keep facts, generalizations, and observations handy for review before assessment.

Geography ONLINE

Visit glencoe.com and enter code WGC2630C1T for Chapter 1 resources.
Geography skills provide the tools and methods for us to understand the relationships between people, places, and environments. We use geographic skills when we make daily personal decisions—where to buy a home; where to get a job; how to get to the shopping mall; where to go on vacation. Community decisions, such as where to locate a new school or how to solve problems of air and water pollution, also require the skillful use of geographic information.

Geographers use a wide array of tools and technologies—from basic globes to high-tech global positioning systems—to understand the Earth. These help us collect and analyze a great deal of information. However, the study of geography is more than knowing a lot of facts about places. Rather, it has more to do with asking questions about the Earth, pursuing their answers, and solving problems. Thus, one of the most important geographic tools is inside your head: the ability to think geographically.

—Dr. Richard Boehm, September 2006
Globes and Maps

A **globe** is a scale model of the Earth. Because Earth is round, a globe presents the most accurate depiction of geographic information such as area, distance, and direction. However, globes show little close-up detail. A printed **map** is a symbolic representation of all or part of the planet. Unlike globes, maps can show small areas in great detail.

**From 3-D to 2-D**

Think about the surface of the Earth as the peel of an orange. To flatten the peel, you have to cut it like the globe shown here. To create maps that are not interrupted, mapmakers, or **cartographers**, use mathematical formulas to transfer information from the three-dimensional globe to the two-dimensional map. However, when the curves of a globe become straight lines on a map, distortion of size, shape, distance, or area occurs.

**Great Circle Routes**

A straight line of true direction—one that runs directly from west to east, for example—is not always the shortest distance between two points on Earth. This is due to the curvature of the Earth. To find the shortest distance between any two places, stretch a piece of string around a globe from one point to the other. The string will form part of a great circle, an imaginary line that follows the curve of the Earth. Traveling along a great circle is called following a **great circle route**. Ship captains and airline pilots use great circle routes to reduce travel time and conserve fuel.

The idea of a great circle route is an important difference between globes and maps. A round globe accurately shows a great circle route, as indicated on the map below. However, as shown on the flat map, the great circle distance (dotted line) between Tokyo and Los Angeles appears to be far longer than the true direction distance (solid line). In fact, the great circle distance is 315 miles (507 km) shorter.

**Answers**

1. **globe**: scale model of the Earth; **map**: symbolic representation of all or part of the planet; **cartographer**: mapmaker; **great circle route**: route that follows the great circle along the curve of the Earth
2. **Size**, **shape**, **distance**, or **area** becomes distorted.
3. Globes present the most accurate depiction of geographic information such as area, distance, and direction, but do not show close-up detail. Maps are symbolic representations of all or part of the planet and can show areas in great detail. Both show information about places on the Earth.

** Critical Thinking**

**Making Inferences** Have students use a piece of string and a globe to find the shortest route from New York to Hong Kong. (over the top of the globe) OL

For additional practice on this skill, see the **Skills Handbook**.

**Visual/Spatial** Use an orange to illustrate the challenges of transferring measurements from a three-dimensional to a two-dimensional form. Sketch an outline of the continents and two or three lines of longitude and latitude onto an orange. Then carefully remove the peel (in one piece, if possible) and gently flatten it. Allow students to examine the peel, and point out how lines and shapes are distorted when the curved peel is flattened. OL

**Teach**

**Differentiated Instruction**

**Visual/Spatial** Use an orange to illustrate the challenges of transferring measurements from a three-dimensional to a two-dimensional form. Sketch an outline of the continents and two or three lines of longitude and latitude onto an orange. Then carefully remove the peel (in one piece, if possible) and gently flatten it. Allow students to examine the peel, and point out how lines and shapes are distorted when the curved peel is flattened. OL

**Critical Thinking**

**Making Inferences** Have students use a piece of string and a globe to find the shortest route from New York to Hong Kong. (over the top of the globe) OL

For additional practice on this skill, see the **Skills Handbook**.
**Critical Thinking**

**Identifying Central Issues**

*Ask:* Why do map makers use projections? (Projections help in transferring information from a three-dimensional surface to a two-dimensional surface.)

---

**Differentiated Instruction**

**Kinesthetic** If students are struggling with the concept of projection, give them a large sheet of paper or poster board and a globe. Have students place the paper and the globe in the same physical relationships shown in the illustrations. Check to make sure students can visualize how each projection offers a different approximation of the sphere.

---

**Projections**

To create maps, cartographers project the round Earth onto a flat surface—making a *map projection*. Distance, shape, direction, or size may be distorted by a projection. As a result, the purpose of the map usually dictates which projection is used. There are many kinds of map projections, some with general names and some named for the cartographers who developed them. Three basic categories of map projections are shown here: *planar*, *cylindrical*, and *conic*.

---

**Planar Projection**

A planar projection shows the Earth centered in such a way that a straight line coming from the center to any other point represents the shortest distance. Also known as an azimuthal projection, it is most accurate at its center. As a result, it is often used for maps of the Poles.

---

**Cylindrical Projection**

A cylindrical projection is based on the projection of the globe onto a cylinder. This projection is most accurate near the Equator, but shapes and distances are distorted near the Poles.

---

**Conic Projection**

A conic projection comes from placing a cone over part of a globe. Conic projections are best suited for showing limited east-west areas that are not too far from the Equator. For these uses, a conic projection can indicate distances and directions fairly accurately.
**Common Map Projections**

Each type of map projection has advantages and some degree of inaccuracy. Four of the most common projections are shown here.

**Winkel Tripel Projection**

Most general reference world maps are the Winkel Tripel projection. It provides a good balance between the size and shape of land areas as they are shown on the map. Even the polar areas are depicted with little distortion of size and shape.

**Goode’s Interrupted Equal-Area Projection**

An interrupted projection resembles a globe that has been cut apart and laid flat. Goode’s Interrupted Equal-Area projection shows the true size and shape of Earth’s landmasses, but distances are generally distorted.

**Robinson Projection**

The Robinson projection has minor distortions. The sizes and shapes near the eastern and western edges of the map are accurate, and outlines of the continents appear much as they do on the globe. However, the polar areas are flattened.

**Mercator Projection**

The Mercator projection increasingly distorts size and distance as it moves away from the Equator. However, Mercator projections do accurately show true directions and the shapes of landmasses, making these maps useful for sea travel.

**Critical Thinking**

**Comparing and Contrasting**

Ask students to cover the text and look at the selected projections. **Ask:** What is one similarity and one difference between the Winkel Tripel Projection and the Goode’s Interrupted Equal-Area Projection? *(similarity: both show all of the continents; difference: Goode’s projection splits Antarctica into four pieces, while the Winkel Tripel projection does not.)*

**BL**

For additional practice on this skill, see the **Skills Handbook**.

**Reading Strategy**

**Analyzing Text Structure**

Have students read the selected captions. **Ask:** How is the information structured in these captions? *(Both captions propose a benefit of the projection, followed by a drawback.)*

**OL**

**Answers**

1. **map projection:** projecting image of Earth onto a flat surface to make a map, different projectors have their advantages/disadvantages. planar: shows shortest distance between points, most often used for maps of the Poles; cylindrical: most accurate near the Equator; conic: best for limited east-west areas not too far from the Equator; interrupted projection: shows true size and shape of Earth but distorts distances
2. Winkel Tripel, because it distorts the size and shape of landmasses the least.
3. Students’ maps will vary but should reflect a basic understanding of the locations of the world’s oceans, continents, and countries.
4. Both show all continents with little to no distortion of shape. Mercator shows true direction, but distorts land size and distance. Winkel Tripel shows little size distortion.
Determining Location

Geography is often said to begin with the question Where? The basic tool for answering the question is location. Lines on globes and maps provide information that can help you locate places. These lines cross one another forming a pattern called a grid system, which helps you find exact places on the Earth’s surface.

A hemisphere is one of the halves into which the Earth is divided. Geographers divide the Earth into hemispheres to help them classify and describe places on Earth. Most places are located in two of the four hemispheres.

Latitude

Lines of latitude, or parallels, circle the Earth parallel to the Equator and measure the distance north or south of the Equator in degrees. The Equator is measured at 0° latitude, while the Poles lie at latitudes 90°N (north) and 90°S (south). Parallels north of the Equator are called north latitude. Parallels south of the Equator are called south latitude.

Longitude

Lines of longitude, or meridians, circle the Earth from Pole to Pole. These lines measure distance east or west of the Prime Meridian at 0° longitude. Meridians east of the Prime Meridian are known as east longitude. Meridians west of the Prime Meridian are known as west longitude. The 180° meridian on the opposite side of the Earth is called the International Date Line.

The Global Grid

Every place has a global address, or absolute location. You can identify the absolute location of a place by naming the latitude and longitude lines that cross exactly at that place. For example, Tokyo, Japan, is located at 36°N latitude and 140°E longitude. For more precise readings, each degree is further divided into 60 units called minutes.

Hands-On Chapter Project

Step 1: Learning Ten Places Student teams learn about 10 places on Earth.

Essential Question What skills do geographers use?

Directions Organize students into teams and have each team choose 10 places on Earth to research and study. Students may choose places that are well-known or unfamiliar. However, all places should be on land and located at least 50 miles (80 km) from each other. Tell students to make a list of 8–10 interesting facts about each place, and also to note the latitude and longitude of each place they study.

Putting It Together Read the Essential Question aloud to the class. Ask: What skills did you use to learn about your 10 places?

(Answers will vary, but should include basic geography skills such as reading maps, interpreting data, and so forth.) Have students organize their notes and select 3 facts about each place. These facts will be used as clues in the Treasure Hunt. OL

(Chapter Project continues on page 17.)
Northern and Southern Hemispheres

The diagram below shows that the Equator divides the Earth into the Northern and Southern Hemispheres. Everything north of the Equator is in the **Northern Hemisphere**. Everything south of the Equator is in the **Southern Hemisphere**.

Eastern and Western Hemispheres

The Prime Meridian and the International Date Line divide the Earth into the Eastern and Western Hemispheres. Everything east of the Prime Meridian for 180° is in the **Eastern Hemisphere**. Everything west of the Prime Meridian for 180° is in the **Western Hemisphere**.

1. Explain the significance of: location, grid system, hemisphere, latitude, Equator, longitude, Prime Meridian, absolute location, Northern Hemisphere, Eastern Hemisphere, Western Hemisphere.

2. Which lines of latitude and longitude divide the Earth into hemispheres?

3. Use the Reference Atlas maps to create a chart listing the latitude and longitude of three world cities. Have a partner try to identify the cities.

4. Answering the Essential Question Use a chart like the one below to identify the continents in each hemisphere. Continents will appear in more than one hemisphere.

<table>
<thead>
<tr>
<th>Hemisphere</th>
<th>Continents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern</td>
<td>North America, Asia, Europe, Africa</td>
</tr>
<tr>
<td>Southern</td>
<td>Antarctica, Australia, South America, Africa</td>
</tr>
<tr>
<td>Eastern</td>
<td>Asia, Europe, Africa, Australia</td>
</tr>
<tr>
<td>Western</td>
<td>North America, South America</td>
</tr>
</tbody>
</table>

**Answers**

1. Location: a specific place on Earth; grid system: pattern formed as the lines of latitude and longitude cross one another; hemisphere: half of a sphere or globe; latitude: the distance north or south of the Equator; Equator: 0° latitude; longitude: the distance east or west of the Prime Meridian; Prime Meridian: 0° longitude; absolute location: the exact location where latitude and longitude lines cross; Northern Hemisphere: everything north of the Equator; Southern Hemisphere: everything south of the Equator; Eastern Hemisphere: everything east of the Equator; Western Hemisphere: everything west of the Prime Meridian for 180°

2. Equator and Prime Meridian

3. Answers will vary according to cities chosen.

4. Northern: North America, Asia, Europe, Africa; Eastern: Asia, Europe, Africa, Australia; Southern: Antarctica, Australia, South America, Africa; Western: North America, South America
**Skill Practice**

*Reading Strategy*  
**Using Geography Skills** Have students use the scale bar on the map to calculate the distance in kilometers between Paris and Stockholm. First, have students use a ruler to measure the distance between the cities on the map in centimeters (4.5 cm). Then, have students measure the map’s scale in centimeters (600 km = 1.7 cm).  

**Ask:** How can you use this to find the distance between Paris and Stockholm? *(set up a proportion)*

\[
\frac{600 \text{ km}}{1.7 \text{ cm}} \times \frac{4 \text{ cm}}{600 \text{ km}} \times 5 \frac{1,412 \text{ km}}{1,7 \text{ cm}} \text{ or OL}
\]

**Reading Strategy**  
**Reading Maps** *Ask:* According to the map, what is the capital of Russia? *(St. Petersburg)*  

**Ask:** What major city is located southeast of Vienna? *(Budapest)*  

**Contrasting** Have students use an Internet mapping Web site to help them understand scale. Tell students to find a particular location, such as their school or home address. Then have them use the map’s zoom function to help visualize the benefits of increasing and decreasing scale when viewing a location. *Ask:* To find the nearest lake, would you use a distant or a close view? *(distant view)*  

**Ask:** What view would show the names of neighboring streets? *(closer view)* Point out that a distant view corresponds to an increase in scale: it allows you to view a wider area but you cannot see much detail. Conversely, a close view corresponds to a decrease in scale: detail is increased, but the size of the area is diminished. *OL*
Using Scale

All maps are drawn to a certain scale. Scale is a consistent, proportional relationship between the measurements shown on the map and the measurement of the Earth’s surface.

Small-Scale Maps A small-scale map, like this political map of France, can show a large area but little detail. Note that the scale bar on this map indicates that about 1 inch is equal to 200 miles.

Large-Scale Maps A large-scale map, like this map of Paris, can show a small area with a great amount of detail. Study the scale bar. Note that the map measurements correspond to much smaller distances than on the map of France.

Absolute and Relative Location

As you learned on page 8, absolute location is the exact point where a line of latitude crosses a line of longitude. Another way to indicate location is by relative location, or the location of one place in relation to another. To find relative location, find a reference point—a location you already know—on a map. Then look in the appropriate direction for the new location. For example, locate Paris (your reference point) on the map of France above. The relative location of Lyon can be described as southeast of Paris.

Answers

1. key: lists and explains symbols, colors, and lines on map; compass rose: indicates direction; cardinal directions: north, south, east, and west; intermediate directions: northeast, northwest, southeast, and southwest; scale bar: shows relationship between map measurements and actual distances on Earth; scale: consistent, proportional relationship between measurements shown on map and measurement of Earth’s surface; relative location: location of one place in relation to another

2. title tells kind of information shown on map; key lists and explains symbols, colors, and lines used on map; scale bar shows relationship between map measurements and actual distances on Earth; compass rose indicates direction

3. shows the relationship between map measurements and actual distances

4. Answers will vary according to school.

5. Small scale shows large areas but little detail. Large scale shows small area with great detail. Both show location.
Physical Maps

A physical map shows the location and the topography, or shape, of the Earth’s physical features. A study of a country’s physical features often helps to explain the historical development of the country. For example, mountains may be barriers to transportation, and rivers and streams can provide access into the interior of a country.

Water Features
Physical maps show rivers, streams, lakes, and other water features.

Landforms
Physical maps may show landforms such as mountains, plains, plateaus, and valleys.

Relief and Elevation
Physical maps use shading and texture to show general relief—the differences in elevation, or height, of landforms. An elevation key uses colors to indicate specific measured differences in elevation above sea level.

Political Features
Some physical maps also show political features such as boundary lines, countries, and states.

**Practicing the Skill**

1. Explain the significance of: physical map, topography, relief, elevation.
2. What is the approximate elevation of central Texas? Of western Texas?
3. Answering the Essential Question: Complete a table like the one to the right to explain what you can learn from the map about the physical features listed.

<table>
<thead>
<tr>
<th>Physical Feature</th>
<th>What You Can Learn from the Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davis Mountains</td>
<td></td>
</tr>
<tr>
<td>Red River</td>
<td></td>
</tr>
<tr>
<td>Gulf Coastal Plains</td>
<td></td>
</tr>
</tbody>
</table>

**Answers**

1. Physical map: shows location and topography of Earth’s physical features; topography: shape of Earth’s physical features; relief: difference in elevation of landforms; elevation: height

2. Central Texas: 655 feet (200 m) to 1,640 feet (500 m); western Texas: 3,280 feet (1,000 m) to 4,920 feet (1,500 m).

3. Davis Mountains: location, elevation, length; Red River: location, length, route; Gulf Coastal Plains: location, elevation, length
Political Maps

A political map shows the boundaries and locations of political units such as countries, states, counties, cities, and towns. Many features depicted on a political map are human-made, or determined by humans rather than by nature. Political maps can show the networks and links that exist within and between political units.

![Political Map of Texas](image)

**Human-Made Features**
Political maps show human-made features such as boundaries, capitals, cities, roads, highways, and railroads.

**Physical Features**
Political maps may show some physical features such as relief, rivers, and mountains.

**Nonsubject Area**
Areas surrounding the subject area of the map are usually a different color to set them apart. They are labeled to give you a context for the area you are studying.

**Practicing the Skill**
1. Explain the significance of: political map, human-made.
2. What types of information would you find on a political map that would not appear on a physical map?
3. Answering the Essential Question Complete a table like the one to the right to explain what you can learn from the map about the human-made features listed.

<table>
<thead>
<tr>
<th>Human-Made Feature</th>
<th>What You Can Learn from the Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin</td>
<td>Texas state capital</td>
</tr>
<tr>
<td>El Paso</td>
<td></td>
</tr>
<tr>
<td>Texas state boundary</td>
<td></td>
</tr>
</tbody>
</table>

**Answers**
1. political map: shows boundaries and locations of political units such as countries, states, counties, cities, and towns; human-made: determined by humans rather than nature
2. capitals, cities, roads, highways, railroads
3. Austin: location, that it is the capital city of Texas; El Paso: location; Texas state boundary: what states border Texas, what river forms its southern border
Thematic Maps

Maps that emphasize a single idea or a particular kind of information about an area are called thematic maps. There are many kinds of thematic maps, each designed to serve a different need. This textbook includes thematic maps that show climate, natural vegetation, population density, and economic activities.

Qualitative Maps

Maps that use colors, symbols, lines, or dots to show information related to a specific idea are called qualitative maps. Such maps are often used to depict historical information. For example, the qualitative map below left shows resources and exports in Latin America over time.

Flow-Line Maps

Maps that illustrate the movement of people, animals, goods, and ideas, as well as physical processes like hurricanes and glaciers, are called flow-line maps. Arrows are usually used to represent the flow and direction of movement. The flow-line map below right shows the movement of Slavic peoples throughout Europe.

**Additional Support**

**Teacher Tip**

Collaborative Learning

Ask students if they have difficulty distinguishing one color from another on the map above. If so, these students may benefit from other resources, such as maps that make distinctions using shading or symbols rather than color.

**Activity: Collaborative Learning**

Making Thematic Maps Divide the class into several groups. Each group will research a theme that interests them and create a thematic map to present to the class. Themes may be national (for example, a U.S. map showing the location of roller coasters or professional football stadiums) or local (for example, a city map displaying the location of public libraries or city parks). After groups choose their themes, each group should designate tasks (research, drawing maps, creating the presentation) among themselves so that each group member participates. Schedule a period for all the groups to present their maps to the class.
Geographic Information Systems

Modern technology has changed the way maps are made. Most cartographers use computers with software programs called geographic information systems (GIS). A GIS is designed to accept data from different sources—maps, satellite images, printed text, and statistics. The GIS converts the data into a digital code, which arranges it in a database. Cartographers then program the GIS to process the data and produce maps. With GIS, each kind of information on a map is saved as a separate electronic layer. This modern technology allows cartographers to make maps—and change them—quickly and easily.

1. Explain the significance of: thematic maps, qualitative maps, flow-line maps.
2. Which type of thematic map would best show natural vegetation regions in Europe?
3. Which type of thematic map would best show trade routes between the United States, Canada, and Mexico?
4. How does GIS allow cartographers to create maps and make changes to maps quickly and easily?
5. Answering the Essential Question Complete a chart like the one below by identifying three examples of each type of thematic map found in this textbook. Note the page numbers of each.

<table>
<thead>
<tr>
<th>Qualitative Maps</th>
<th>Flow-Line Maps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Answers
1. thematic map: emphasizes a single idea or particular kind of information about an area; qualitative map: uses colors, symbols, lines, or dots to show information related to a specific idea; flow-line map: illustrates movement of people, animals, goods, and ideas, as well as physical processes like hurricanes and glaciers
2. qualitative
3. flow-line
4. by allowing information to be stored and displayed on separate electronic layers
5. Answers will vary. Note that qualitative maps are located in each of the Unit Atlas pages; most climate maps are qualitative and flow-line.
The Geographer’s Craft

Geography is more than just learning place-names. It also has practical uses. For example, ecologist J. Michael Fay conducted a flyover to identify the physical changes and human impact on the African continent.

Voices Around the World

“The next morning we were airborne over Kruger National Park. This was the kind of thing every boy dreams of, cruising at low level over an African game park in your own little Cessna. . . . The land was covered with animal trails and water holes were heavily trodden by elephants and buffalo. It was very clear that nature was intact here. . . . As we neared the western boundary, I could see a line along the border of the park. . . . Elephants, rhinos, and lions ruled one side while humans dominated the other. . . . As human populations grow, they tend to move closer to the artificial boundaries of protected areas until one day somebody has to put up a fence.”

—J. Michael Fay, Africa Megaflyover: Air Dispatches, National Geographic (online), June 14, 2004

Guide to Reading

Essential Question

What are the elements of geography?

Content Vocabulary

- site (p. 18)
- situation (p. 18)
- place (p. 18)
- region (p. 18)
- formal region (p. 18)
- functional region (p. 18)
- perceptual region (p. 18)
- ecosystem (p. 19)
- movement (p. 19)
- human-environment interaction (p. 19)
- cartography (p. 20)
- geographic information systems (GIS) (p. 21)

Academic Vocabulary

- occur (p. 17)
- traditional (p. 18)
- aspect (p. 19)
- observe (p. 21)
- alter (p. 22)
- assist (p. 24)

Reading Strategy

Organizing As you read about the work of geographers, complete a graphic organizer similar to the one below by listing the specialized research methods geographers use.
**The Elements of Geography**

**MAIN Idea** Geographers study the location of people and places on Earth’s surface and the patterns in which they are arranged.

**GEOGRAPHY AND YOU** Is your community located near a river or in the mountains? Why do you think this is so? Read to learn how the study of geography can help you understand the world around you.

Geographers study the Earth's physical and human features and the interactions of people, places, and environments. They search for patterns in these features and interactions, seeking to explain how and why they exist or occur. In their work, geographers consider six elements: the world in spatial terms, places and regions, physical systems, human systems, environment and society, and the uses of geography.

**The World in Spatial Terms**

Spatial relationships are the links people and places have to one another because of their locations. For geographers, location, or a specific place on the Earth, is a reference point in the same way that dates are reference points for historians.

One way of locating a place is by describing its absolute location—the exact spot at which the place is found on the Earth. To determine absolute location, geographers use a network of imaginary lines around the Earth. Remember that the Equator, the Prime Meridian, and other lines of latitude and longitude cross one another to form a grid system. Using the grid, you can name the absolute location of any place on Earth. This location is stated in terms of latitude, degrees north or south of the Equator, and longitude, degrees east or west of the Prime Meridian. For example, Dallas, Texas, is located at latitude 32° N (north) and longitude 96° W (west).

Although absolute location is useful, most people locate a place in relation to other places, known as its relative location. For example, New Orleans is located near the mouth of the Mississippi River. Knowing the relative location of a place helps you create mental maps to orient yourself in space and to develop an awareness of the world around you.

**Absolute Location and Relative Location**

Learn how to find absolute location and relative location by following the steps below.

**Absolute Location**

1. To find the absolute location of Indianapolis, first identify the line of latitude that runs near the city. This is 39° N.
2. Then identify the line of longitude that runs near Indianapolis. This is 86° W.
3. Finally, write the location of Indianapolis using latitude and longitude. This is latitude 40° N, longitude 86° W.

**Relative Location**

1. To find the relative location of Lansing, identify places such as cities, lakes, rivers, and states near Lansing. Unlike absolute location, relative location can be described in many ways.
2. For example, Lansing is northwest of Ann Arbor.
3. Lansing is also east of Lake Michigan.

**Creating A Global Treasure Hunt**

**Step 2: Creating a Treasure Atlas**

Students create a Treasure Atlas with clues to help other students locate a buried treasure somewhere on Earth.

**Directions** Tell students to “bury” their treasure in one of the places they studied in Step 1. Have them note the latitude and longitude of the place. Then have students use the facts they learned about the place to create clues for a Treasure Atlas. Clues will be about locations that, when followed, will lead to the buried treasure. The correct response to each clue will be a place name and coordinates that can be easily looked up. For example, the clue “tallest waterfall in Zimbabwe” would be answered “Victoria Falls, 18° S, 25° E.” Have students write each clue on an index card, and list all the clues with their answers on a separate sheet of paper. Each correct answer will earn a new clue to the next location, eventually leading to the buried treasure, so remind students to make sure their clues follow a logical route.

**Putting It Together** Collect all clues and answer keys before the next session. (Chapter Project continues on the Visual Summary page.)
Critical Thinking
Comparing and Contrasting
Ask students to write a paragraph explaining the similarities and differences between site and situation. OL

Reading Strategy
Academic Vocabulary
Ask students to read the last sentence on this page. Point out that the word traditional as used here refers to ideas and behaviors that have been widely accepted within a community for a long time. Have students use the dictionary or a thesaurus to look up synonyms of traditional. Then have them write two or three sentences about a traditional value or belief in their own community. BL ELL

Caption Answer:
Volcanic activity creates new land through lava flows. The Hawaiian Islands were created through volcanic activity. Humans often live near volcanoes as the soil is usually very fertile. However, they often must be evacuated when the volcanoes erupt.

Differentiated Instruction

Leveled Activities
BL Reteaching Activity, URB, pp. 15–16
OL Differentiated Instruction, p. 2
AL Map Overlay Transparencies, p. 3
ELL Reading Essentials/Note-Taking Guide, p. 4
Physical Systems and Human Systems

Geography covers a broad range of topics. To make their work easier, geographers divide their subject area into different branches. The two major branches are physical geography and human geography. Physical geography focuses on the study of the Earth’s physical features. It looks at climate, land, water, plants, and animal life in terms of their relationships to one another and to humans. Human geography, or cultural geography, is the study of human activities and their relationship to the cultural and physical environments. It focuses on political, economic, social, and cultural factors, such as population growth, urban development, and economic production and consumption.

Physical geography and human geography are further divided into smaller subject areas. For example, climatology is the study of weather, climate, long-term conditions of the atmosphere, and their impact on ecology and society. Historical geography is the study of places and human activities over time and the geographic factors that have shaped them.

Geographers analyze how certain natural phenomena, such as volcanoes, hurricanes, and floods, shape the Earth’s surface. A Hawaiian uses traditional beliefs to describe the fascinating force of a volcano:

“We don’t see her work as destruction but as cleansing. She’s a creator. When she comes through, she wipes the land clean and leaves us new fertile ground. We don’t get mad. It is all hers to begin with.”


Geographers study how physical features interact with plants and animals to create, support, or change ecosystems. An ecosystem is a community of plants and animals that depend upon one another, and their surroundings, for survival.

Geographers also examine how people shape the world—how they settle the Earth, form societies, and create permanent features. A recurring theme in geography is the ongoing movement of people, goods, and ideas. For example, new people entering a long-established society usually bring different ideas and practices that may transform that society’s existing culture. In studying human systems, geographers look at how people compete or cooperate to change or control aspects of the Earth to meet their needs.

Environment and Society

Environment and Society, or the study of the interrelationship between people and their physical environment, is another theme of geography. Geographers examine the ways people use their environment, how and why they change it, and what consequences result from these changes. In some cases the physical environment affects human activities. For example, mountains and deserts often pose barriers to human movement. In other instances human activities, such as building a dam, cause changes to the physical environment. By understanding how the Earth’s physical features and processes shape and are shaped by human activity, geographers help societies make informed decisions.

Activity: Technology Connection

Analyzing Information Have interested students use Internet resources to study a large construction project that dramatically changed an environment. Students may research a project of their own choosing or study one of the following:

- Great Wall of China
- Transcontinental Railroad (United States)
- Trans-Siberian Railroad
- Three-Gorges Dam
- Hoover Dam
- Panama Canal

Students should explore how the structure was made and the effects it had on the environment and on people living in the surrounding area. Allow time for students to share their findings with the class.

Caption Answer: Answers will vary, but may include building roads, mining, or building dams.
Differentiated Instruction

Naturalist  Have interested students create and narrate a video report of a natural area near the school. Have students record the plants and animals they see, as well as any physical features. If students lack access to a video camera, they may take photographs of what they see and use these to prepare a slide presentation.

Caption Answer: Without human interference, scientists can get a better idea of how patterns in the physical systems of the Earth are changing.

READING Check  Answer: Absolute location is the exact location of a place (using latitude and longitude), while relative location is the location of a place in relation to other places.

The Uses of Geography

Geography provides insight into how physical features and living things developed in the past. It also interprets current trends to plan for future needs. Governments, businesses, and individuals use geographic information in planning and decision making. Data on physical features and processes can determine whether a site is suitable for human habitation or has resources worth developing. Geographic information on human activities, such as population growth and migration, can help planners decide whether to build new schools or highways in a particular place. As geographers learn more about the relationships among people, places, and the environment, their knowledge helps us plan and build a better future.

READING Check  Location  How is absolute location different from relative location?

Research Methods

MAIN Idea  Geographers use different research methods to conduct their work.

GEOGRAPHY AND YOU  How do you prepare to write a research report? Read to learn how geographers organize and study geography.

Geographers use specialized research methods in their work. These methods include direct observation, mapping, interviewing, statistics, and the use of technology.

Direct Observation

Geographers use direct observation to study the Earth and the patterns of human activities that take place on its surface. They will often visit a place to gather specific information about it and its geographic features. Geographers also employ remote sensing to study the Earth, using aerial photographs and satellite images. For example, aerial photographs or satellite images can be used to locate mineral deposits or to determine the size of freshwater sources.

Mapping

Maps are essential to geographers. Specialists who make and design maps are known as cartographers. Their area of work, known as cartography, involves designing and making maps. Many findings from geographic research can be shown on maps better than they can be explained in written text. Cartographers select complex pieces of information about an area and present them in a more understandable form on a map. In this way they show the location, features, patterns, and relationships of people, places, and things. In addition, maps allow a visual comparison between places and regions. For example, a geographer might compare population density maps of two counties in order to determine where to build new schools.

Interviewing

To answer a geographic question, geographers must often go beyond observation. In many cases, they want to find out how people think or feel about certain places. They also may want to examine the ways in which people’s beliefs and attitudes have affected the physical environment.

Additional Support

Activity: Collaborative Learning

Using Geography Skills  Organize the class into five groups. Assign each group one of the research methods used by geographers:

- Direct observation
- Mapping
- Interviewing
- Analyzing statistics
- Using technology

Each group will use only its assigned research method to gather geographic information about the neighborhood in which your school is located. Then have groups report their findings. Ask: Which group obtained information most easily? (Answers will vary, depending on method and area characteristics.) Ask: Which group faced the greatest challenge in collecting data? (Answers will vary depending on method and characteristics of neighborhood, but should include examples of challenges students faced.) Ask: How does each research method contribute to an overall understanding of the neighborhood? (Answers will vary depending on research method.)

OL
Skills for Thinking Like a Geographer

<table>
<thead>
<tr>
<th>Skill</th>
<th>Examples</th>
<th>Tools and Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asking Geographic Questions—helps you pose questions about your surroundings</td>
<td>• Why has traffic increased along this road? • What should be considered when building a new community sports facility?</td>
<td>• Maps • Globes • Internet • Remote sensing • News media</td>
</tr>
<tr>
<td>Acquiring Geographic Information—helps you answer geographic questions</td>
<td>• Compare aerial photographs of a region over time. • Design a survey to determine who might use a community facility.</td>
<td>• Direct observation • Interviews • Reference books • Satellite images • Historical records</td>
</tr>
<tr>
<td>Organizing Geographic Information—helps you analyze and interpret information you have collected</td>
<td>• Compile a map showing the spread of housing development over time. • Summarize information obtained from interviews.</td>
<td>• Field maps • Databases • Statistical tables • Graphs • Diagrams • Summaries</td>
</tr>
<tr>
<td>Analyzing Geographic Information—helps you look for patterns, relationships, and connections</td>
<td>• Draw conclusions about the effects of road construction on traffic patterns. • Compare information from different maps that show available land and zoning districts.</td>
<td>• Maps • Charts • Graphs • GIS • Spreadsheets</td>
</tr>
<tr>
<td>Answering Geographic Questions—helps you apply information to real-life situations and problem solving</td>
<td>• Present a report conveying the results of a case study. • Suggest locations for a new facility based on geographic data gathered.</td>
<td>• Sketch maps • Reports • Research papers • Oral or multimedia presentations</td>
</tr>
</tbody>
</table>

One of the most important geographic tools is the ability to think geometrically. The five skills identified above are key to geographic understanding.

1. Place  What types of information can you gain from a map that would help you ask questions about why traffic has increased along a specific road?

2. Regions  Why are the news media and the Internet important tools for geographers?

Such information is obtained by interviewing. Geographers choose a particular group of people for study. Instead of contacting everyone in that group, however, geographers talk to a carefully chosen sample whose answers represent the whole group.

Analyzing Statistics

Some of the information geographers use is numerical. Temperature and rainfall data indicate a region’s climate, for example. Geographers use computers to organize and present this information. They also analyze the data to find patterns and trends. For example, census data can be studied to learn about the age, ethnic, and gender makeup of the population. After identifying these patterns and trends, geographers use statistical tests to see whether their ideas are valid.

Using Technology

As noted in the chart above, geographers often use scientific instruments in their work. They especially depend on advanced technological tools, such as satellites and computers. Satellites orbiting the Earth carry remote sensors, high-tech cameras, and radar that gather data and images related to the Earth’s environment, weather, human settlement patterns, and vegetation. Geographic information systems (GIS) are computer tools that process and organize data and satellite images with other types of information gathered by geographers and other scientists. GIS technology can be used for many purposes. For example, urban planners use it to help determine where to build roads. Biologists use it to monitor wildlife populations in a specific area. Public safety officials use it to pinpoint safe and efficient evacuation routes from hurricane paths.

The development of computer technology has also transformed the process of mapmaking. Today, most cartographers rely on computers and computer software to make maps. Each type of data on a map is kept as a separate “layer” in the map’s digital files. This method allows cartographers to make and change maps quickly and easily.

**Reading a Chart**

**Activity: Connecting with the United States**

**Analyzing Information**  Point out that the U.S. Census Bureau provides a wealth of useful information about the population of the United States. Tell interested students to explore the Census Bureau’s literature or Web site and familiarize themselves with how to locate data. Then have students select one population characteristic to study. Examples include gender makeup, age groups, marital status, ethnic makeup, and so on. Students will then locate statistics for their chosen characteristic for their city, county, and state, as well as figures for the national level. Have students create a report on their findings comparing data within their population characteristic. Data in reports should be displayed in tables, charts, and/or graphs as well as described in the written report. Encourage volunteers to share their findings with the class.

**Skill Practice**

**Reading a Chart**  Show students that in each row, information gets more complex as they move from left to right. Each skill from column 1 is given two examples in column 2, and four or more examples of tools and technology in column 3. For each row, have students connect the skill with one example and then match this with all tools and technologies needed to accomplish the task.

**Answers**

1. Answers may vary. Possible answers include new developments in the area, or road closures.

2. They can help gather and present current information.

**Reading Check**  Answer: Cartographers rely on computers and computer software to make maps, allowing data to be sorted and stored by layer in digital files.

**Additional Support**
Geography and Other Subjects

**MAIN Idea** Geography is related to other subject areas such as history and economics.

**GEOGRAPHY AND YOU** Do you use math when figuring out a science problem? Read to learn how geographers use knowledge from other subject areas to understand the world around them.

Geographers use geographic tools and methods to understand historical patterns, politics and political patterns, societies and culture and their impact on landscape, and economies.

**Past Environments and Politics**
Geographers use historical perspectives to understand what places could have looked like in the past. For example, geographers might want to know about the changes that have occurred in Boston, Massachusetts, over the past two centuries. They may begin by gathering information about different time periods in the city’s history. This information could be used to answer such geographic questions as: How have human activities changed the natural vegetation? Are the waterways different today than they were in the past? Answers to such questions help people make informed decisions about the present and better plans for the future.

Geographers study political patterns to see how people in different places are governed. They look at how political boundaries have formed and changed. Geographers are also interested in how the natural environment has influenced political decisions and how governments change natural environments. For example, in the 1960s the Egyptian government built the massive Aswān High Dam on the Nile River to help irrigate the land. The dam altered the Nile River valley in profound ways and has had a significant impact on the region’s people.

**Society and Culture**
Human geographers, or cultural geographers, use the tools of sociology and anthropology to understand cultures around the world. They study the relationships between physical environment and social structures. They examine people’s ways of life in different parts of the world. Human geographers also seek to understand how the activities of different groups affect physical systems and how the physical systems affect human systems differently.

**Economies**
Geographers study economies to understand how the locations of resources affect the ways people make, transport, and use goods, and how and where services are provided. Geographers are interested in how locations are chosen for various economic activities, such as farming, mining, manufacturing, and trade. A desirable location usually includes plentiful resources and good transportation routes.

Geographers are also interested in the interdependence of people’s economic activities around the world. New developments in communications and transportation—such as the Internet, cellular phones, and overnight air delivery—make the movement of information and goods faster and more efficient than ever before. With such ever-changing technology, a modern business can operate globally without depending on any one place to fill all of its needs.

**Activity: Interdisciplinary Connection**

**Science** Ask: Who might need to know the physical geography of another planet? (NASA or other space agencies)

Have students work in groups to investigate how scientists determine the physical geography of other planets. Students should use Internet or library resources to learn the following:

- How scientists learn about the composition of a planet’s surface and/or atmosphere
- Whether a planet has liquid water
- How they determine appropriate landing and expedition areas
- What geography skills are used for these tasks

Have students present their findings to the class. Ask: What subjects besides geography contribute to studying the physical geography of another planet? (Answers will vary, but should include mathematics, physics, astronomy, chemistry, and geology.)
**Geography as a Career**

**MAIN Idea** Geography skills are useful in a variety of jobs and work environments.

**GEOGRAPHY AND YOU** What skills do you use when learning how to get to the library? Read to learn how geography is used in the workplace.

Although people trained in geography are in great demand in the workforce, many of them do not have geographer as a job title. Geography skills are useful in so many different situations that geographers have more than a hundred different job titles. Geographers work in a variety of jobs in government, business, and education. They often combine the study of geography with other areas of study. For example, an ecologist must know the geographic characteristics of a place or region in which he or she studies living organisms. Also, a travel agent must have knowledge of geography in order to plan trips for clients.

One broad cluster of career opportunities in geography is teaching and education. Teaching opportunities exist at all levels—from elementary school to high school to university. Teachers with some background and training in geography are in demand in elementary and high schools in the United States. At the university level, teaching and research focused on specific branches of geography have been established for decades. Students with formal geographic training from a university have found work in many different industries.

Because geography itself has many specialized fields, there are many different kinds of geographers. Those with knowledge of physical geography work as climate and weather experts and soil scientists. Recently, geographers with training in environmental studies have been in demand for work as environmental managers and technicians. Such work includes assessing the environmental impact of proposed development projects on air, water quality, and wildlife. They also prepare the environmental impact report that is often required before construction can begin.

Human geographers find work in many areas, including health care, transportation, population

---

**Differentiated Instruction Strategies**

**Objective:** To apply geography skills to describe the physical and human features of a room.

**Focus:** Students will prepare a scale map of the layout and main features of their bedrooms.

**Teach:**
- Provide graph paper, rulers, tape measures, and colored pencils.

**Assess:**
- Evaluate student maps. In addition to a scale, maps should include a title, map key, labels, coordinates, and a compass rose.

**Close:**
- Display all maps and discuss the exercise.

**Differentiated Instruction Strategies**

**BL**
- Have students complete a scale map of the basic layout (that is, the floor plan) of their bedroom.
- Provide tracing paper to students and have them prepare an overlay that illustrates the most common paths the students take within the room.

**AL**
- Use figurines or game pieces of varying sizes to illustrate the concept of scale.

**ELL**
- Clarify instructions: What skills do you use when learning how to get to the library? Read to learn how geography is used in the workplace.
studies, economic development, and international economics. Some human geographers with a background in urban planning are hired as planners in local and state government agencies. They focus on housing and community development, park and recreation planning, and urban and regional planning. Planners map and analyze land use and transportation systems, and monitor urban land development.

Geographers who specialize in a specific branch of geography—such as economic geography or regional geography—also find jobs outside of the university setting. For example, an economic geographer examines human economic activities and their relationship to the environment. He or she may work at such tasks as market analysis and site selection for stores, factories, and restaurants. A regional geographer studies the features of a particular region and may assist government and businesses in making decisions about land use. Geographers also find employment as writers and editors for publishers of textbooks, maps, atlases, and news and travel magazines.

Answers

1. Definitions for the vocabulary terms are found in the section and the Glossary.
2. direct observation, mapping, interviewing, analyzing statistics, using technology
3. possible answers: history, political science, ecology, geology, economics, sociology, anthropology
4. education, travel, construction, planning, advertising, news gathering
5. The World in Spatial Terms: links people and places based on location; Places and Regions: specific spaces with physical and human meaning, areas with similar characteristics; Physical Systems: climate, land, water, plants and animals and interactions with one another and with people; Human Systems: human activities, relationship to cultural and physical environments; Environment and Society: connection of people and physical environment; The Uses of Geography: how geography is used in everyday life
6. Knowledge of human systems helps inform a geographer’s work. Geographers studying relationships between and among countries examine the political, economic, social, and cultural causes and effects of those interactions.
7. formal: common feature; functional: central place and surroundings; perceptual: by popular feelings and images
8. physical: geographic boundaries, major water sources, mountain chains, and so on; political: human-made boundaries and cities; physical map shows only physical features and natural boundaries
9. Answers will vary.
What Is Geography?

- Geography is the study of the location of people and places and the patterns in which they are arranged on Earth.
- Physical geography focuses on the physical features and processes of Earth.
- Human geography focuses on the political, economic, or cultural characteristics of human populations.
- An important element in geography is the interaction between people and their environment. Geographers try to understand how Earth’s physical environment shapes and is shaped by human activities.

The Geographer’s Tools

- To understand geography, you first need to understand how maps work.
- Three-dimensional globes are the most accurate depiction of Earth. For example, the shortest distance between two places is not always a straight line but a great circle. This is due to the curvature of the Earth.
- Flat maps use one of several types of projections that distort Earth’s features in some way.
- It is important to understand how each projection distorts Earth so you can pick the map projection that best suits your needs.

Types of Maps

- Maps can be used to show many different types of information.
- Most maps show location. The two most common types of maps show the location and physical features of a place, or the location and political boundaries.
- Some other types of maps are qualitative maps and flow-line maps. These are useful when dealing with historical information or when trying to show movement.

Hands-On Chapter Project

Step 3: Wrap-Up

Synthesizing Ask students to consider what they have learned about how geographers look at the world. Ask: How would you approach studying the geography of the world? (Answers will vary, but should reflect logical connections between basic geography skills and tasks to be achieved.) Have students reflect on their notes from this chapter and write a course description for the rest of the text. The course description should include the students’ predictions about the topics they will study, the skills they will practice, and the tools they will use.
CHAPTER 1

ANSSESSMENT

Answers, Analyses, and Tips

Reviewing Vocabulary

1. C Both answers A and B are terms that describe particular locations. Answer D describes the halves into which geographers divide the Earth. C is the correct answer.

2. D Latitude and parallels on a map are the same thing. Since only one answer is correct, the answers cancel each other out. Both latitude and longitude are tools for describing a location. The correct answer is D.

TEST-TAKING TIP

Only one answer to a multiple-choice question can be correct. If two answers to a multiple-choice question mean the same thing, they cancel each other out and can be eliminated. Choose the best answer from the remaining choices.

3. A All of these answers may seem reasonable, but functional is the best answer. It may help students to remember that cities and surrounding areas work together and function as a single unit or region.

4. B One way to arrive at the correct answer is to remember the etymology of cartography. “Cart-” derives from the French word carte, meaning card or map, and “-graphy” comes from graphie, meaning “drawing.” If students can remember that the word cartography means “drawing on a card,” they will probably choose the correct response.

Reviewing Main Ideas

5. A Answer C is a distracter since the term is not discussed in the section. B and D are elements of two-dimensional maps. The correct answer is A, great circle, an imaginary curved line on Earth itself or on a globe.

6. C Answers B and D are distracters since neither describes a type of location discussed in the section. Of the two remaining answers, absolute location is described numerically as the exact point where a line of latitude crosses a line of longitude, similar to a house address.

7. B Answer A is a distracter since map projections are not discussed in the section. Answers B and C are geographic divisions. The correct answer, B, is the most inclusive term since a region includes places. Situation is an expression of relative location.

8. D Students who struggled with this question probably tried to choose an answer without reading all the possible responses. Remind students that they are looking for the best choice, not simply any correct choice.
**Critical Thinking**

**Directions:** Choose the best answers to complete the sentences or to answer the following questions.

9. How has the geographer’s craft changed over the last 100 years?
   A. The world has literally become smaller.
   B. Maps are no longer as important as they once were.
   C. Technology has provided computers and views from the air and from space.
   D. Interviewing is used less often to learn about and compare cultures.

   Base your answer to question 10 on the map and on your knowledge of Chapter 1.

   **Map:**
   - **Norway:**
   - **Sweden:**
   - **Finland:**
   - **Estonia:**
   - **Latvia:**
   - **Baltic Sea:**

10. The absolute location of Oslo is ________
    A. 60° south and 10° west
    B. 60° west and 10° south
    C. 60° north and 10° east
    D. 10° east and 60° south

**Document-Based Questions**

**Directions:** Analyze the document and answer the short-answer questions that follow the document.

Geography is increasingly important because our ties to the rest of the world increase every day. Here is what geographer George J. Demko said about geography:

**Geography—real-world geography—is the art and science of location, or place. It is about spatial patterns and spatial processes. It is about which way the wind blows from Chernobyl, the Pacific “ring of fire,” AIDS, terrorists, and refugees. It is about acid rain, El Niño, ocean dumping, cultural censorship, droughts and famines. . . .**

Real-world geography also explores things in locations: why something is where it is and what processes change its distribution. Geography is the why of where of an ever-changing universe. Its surpassing objective is to discover the processes that move over space and connect places and continually transform the location and character of everything.

—George J. Demko, *Why in the World: Adventures in Geography*

11. What are some of the world issues that Dr. Demko lists as concerns of geography?

12. According to the excerpt, what is the main objective of geography?

**Extended Response**

13. It is necessary to use a variety of methods to gain a complete understanding of the complexity of the Earth. For example, what works when studying physical processes will not work when studying cultural processes. Students should draw on their knowledge of the chapter to answer this question.

14. The six essential elements of geography are: the world in spatial terms, linking people and places to one another because of their location; places and regions, which help geographers understand and explain how places are similar to and different from one another; physical systems, which look at climate, land, water, plants, and animals in terms of their relationship to one another and to humans; human systems, studying human activities and their relationship to cultural and physical environments; environment and society, which studies the interrelationship between people and their physical environment; and the uses of geography, which provide insight into how physical features and living things developed and interpret current trends to plan for future needs. These essential elements of geography are the subject of the first main heading in Section 2.