

# Grade 4 History & Geography

## Unit 1: Using Maps

5 lessons and a unit quiz. Use this pack with the **Using Maps Student Reader** (print it, or download it once from the course) to teach the whole unit without the internet.

### What is in this pack

- A lesson plan for each chapter: the Big Question, words to know, which pages to read, questions to talk over and the activity pages.
- The unit quiz, ready to print.
- Answers for the teacher at the back: every discussion question and the quiz key.

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# Lesson schedule

Two or three lessons a week, about 30 minutes each. Tick each one off as you go.

|                          | Lesson                                 | Reader pages    | Activity pages                                                         |
|--------------------------|----------------------------------------|-----------------|------------------------------------------------------------------------|
| <input type="checkbox"/> | Chapter 1: Measuring Distance on a Map | PDF pages 5–14  | AP 1.1, AP 1.2, AP 1.3                                                 |
| <input type="checkbox"/> | Chapter 2: Latitude and Longitude      | PDF pages 15–26 | AP 2.1, AP 2.2, AP 2.3                                                 |
| <input type="checkbox"/> | Chapter 3: Finding a Place on a Map    | PDF pages 27–36 | AP 3.1, AP 3.2, AP 1.1, AP 1.2, AP 1.3, AP 2.1, AP 2.2, AP 2.3, AP 3.3 |
| <input type="checkbox"/> | Chapter 4: Time Zones                  | PDF pages 37–46 | AP 4.1, AP 2.1, AP 2.2, AP 3.1, AP 4.2                                 |
| <input type="checkbox"/> | Chapter 5: How to Read Physical Maps   | PDF pages 47–56 | AP 5.1                                                                 |
| <input type="checkbox"/> | <b>Unit quiz</b>                       | —               | —                                                                      |

Page numbers are the PDF page numbers of the Student Reader file, so they match what your PDF reader shows.

## Chapter 1: Measuring Distance on a Map

### THE BIG QUESTION

### Why do we need different kinds of maps?

#### Words to know

- **map** — a drawing or picture on a flat piece of paper of a specific place or area of Earth's surface that shows different features *The visitors used a map to find their way in the foreign city.*
- **symbol** — an object or picture that stands for something else *Maggie used the map scale to determine how far it was from Tucson to Phoenix.*
- **kilometer** — a distance of one thousand meters, or 0.62 miles *Frankie began his training program by running one kilometer without stopping.*
- **distance** — how far it is from one point to another *Li found that the distance between her home and her school was five miles.*
- **direction** — where a person or object is facing or moving toward *Peter asked the tour guide which direction he should take to get to the zoo.*
- **compass rose** — a symbol on a map that shows the directions for north, south, east, and west *Using the compass rose, Sonia figured out that Denver was west of Pittsburgh.*
- **interstate highway** — a major divided highway that runs through more than one state *The fastest way to get from Carson City, Nevada, to Los Angeles, California, is to take the interstate highway.*

#### Read

Read Chapter 1 in the Student Reader: PDF pages 5–14. Look at the pictures and maps together.

#### Talk it over

1. What information does a map key contain?
2. What can you tell by using the scale on a map?
3. Why do mapmakers use map scales to represent distance?
4. Where is the San Diego Zoo located?
5. What information does the map of San Diego show?
6. What information does the map of Southern California show?
7. Why might it be necessary for travelers to use both a city and a state or regional map to find their way?
8. What does a compass rose show?
9. According to the map of San Diego, which state highway travels in an east-west direction just south of Balboa Park?

10. Why is it a good idea to know more than one route to your destination?

Answers are at the back of this pack.

### **Check for understanding**

- Answer the Big Question in a sentence or two: Why do we need different kinds of maps?
- Use one of today's words in a sentence of your own.

### **Activity pages**

- Activity Page 1.1: Source Map: The Ride of Paul Revere — Teacher Guide PDF page 68
- Activity Page 1.2: Source Map: Southern California Highways — Teacher Guide PDF page 69
- Activity Page 1.3: Source Map: Roadways in San Diego, California — Teacher Guide PDF page 70

## Chapter 2: Latitude and Longitude

### THE BIG QUESTION

**How are meridians and parallels—lines identifying longitude and latitude—helpful?**

### Words to know

- **radar** — a tool that uses radio waves to help determine the location, distance, and speed of an object *Many cars come with a Global Positioning System (GPS) to help drivers easily find their way.*
- **parallel** — an imaginary line on a globe or map that circles Earth in the same direction as the equator. Parallels mark degrees of latitude. *Kathleen learned that her hometown was located along a parallel north of the equator.*
- **latitude** — the distance between the equator and a place north or south of the equator; measured in degrees *The city was located at a latitude far to the south of the equator.*
- **equator** — the imaginary east-west line on a globe or map that is an equal distance from the North and South Poles; 0° latitude *The temperature gets higher the closer you get to the equator.*
- **globe** — a representation of Earth's surface in the form of a ball *The teacher used a globe to show where the school was located relative to the students' pen pals in China.*
- **degree** — a unit used to measure the distance between parallels and meridians *The teacher pointed out that the two towns were only one degree of latitude apart.*
- **hemisphere** — either of two halves of Earth *The students had to identify the hemisphere in which their country was located.*
- **meridian** — an imaginary line that runs north-south on a globe or map and measures degrees of longitude east or west of the prime meridian *The city was located on the 90° meridian.*
- **longitude** — the distance east or west of an imaginary line on the globe that goes from the North Pole to the South Pole and passes through Greenwich, England; measured in degrees *Ingrid's house is located one meridian of longitude west of London.*
- **prime meridian** — the imaginary north-south line that runs through Greenwich, England; 0° longitude *The prime meridian crosses Europe and Africa.*
- **coordinates** — a pair of numbers on a globe or map that shows where something is located *Diego used coordinates to find his exact location on the map.*

### Read

Read Chapter 2 in the Student Reader: PDF pages 15–26. Look at the pictures and maps together.

### **Talk it over**

1. What is radar used for?
2. Why would it be especially important for a sailor to have access to navigational tools like radar or GPS?
3. What are the lines that run east-west on a map or globe called?
4. What degree of latitude is the equator?
5. Between what degrees of latitude is the continent of South America located?
6. What North American city is located at approximately 25° N?
7. Using your thumb and the map scale, what is the approximate distance between North America and Europe at 40° N?
8. Using the compass rose, is the continent of Africa to the east or west of the continent of Australia?
9. Why do you think people use maps to locate points and get directions instead of using globes, which can more accurately show distance on Earth's surface?
10. What happens to the temperature the closer you get to the equator?
11. What is the Northern Hemisphere?
12. The text said Fairbanks, Alaska, is located at about 64° N and that Honolulu, Hawaii, is located at 21° N. What do you think the temperature would be like in each of these cities in January? Why?
13. Why is it generally warmer in Mexico than it is in Canada?
14. What is the measure 0° longitude called?
15. How are meridians and parallels different?
16. What is a coordinate?
17. Using the map on page 21 or AP 2.3, where is the ship headed if its final destination is just south of 40°N and 120°W?

Answers are at the back of this pack.

### **Check for understanding**

- Answer the Big Question in a sentence or two: How are meridians and parallels—lines identifying longitude and latitude—helpful?
- Use one of today's words in a sentence of your own.

### **Activity pages**

- Activity Page 2.1: Source World Map: Parallels of Latitude — Teacher Guide PDF page 71
- Activity Page 2.2: Source World Map: Meridians of Longitude — Teacher Guide PDF page 72
- Activity Page 2.3: Source World Map: Parallels of — Teacher Guide PDF page 73

## Chapter 3: Finding a Place on a Map

### THE BIG QUESTION

**Coordinates include a unit of measure called a “degree.”  
What does a degree measure?**

### Words to know

- **minute** — a unit of measure equal to one-sixtieth of a degree of latitude or longitude  
*The captain said the ship was one minute north of 30° N latitude.*
- **atlas** — a book of maps *Patrick looked through the atlas to find a map of Colorado.*
- **index** — an alphabetical list of names or places that appear in a book; it usually includes the page(s) on which the name or place appears *Juana looked at the index to find the page number on which she could find the map of Philadelphia in the atlas.*

### Read

Read Chapter 3 in the Student Reader: PDF pages 27–36. Look at the pictures and maps together.

### Talk it over

1. How many minutes are there in one degree?
2. In finding a place on the map, why is it important to know both its latitude and longitude?
3. The coordinates for Promontory Point are 41°38' N, 112°30' W. Why is it important to include the designation 'N' for latitude and the designation 'W' for longitude as part of the coordinates?
4. What was the Pony Express?
5. What is an atlas?
6. How is using an index helpful?
7. What kinds of coordinates are used on some road maps in place of longitude and latitude?
8. How does the map of Saint Joseph, Missouri, differ from other maps you've seen in this unit so far?
9. If you were a guide at the Pony Express Museum and someone asked you for directions to the Albrecht-Kemper Art Museum, how would you direct the person to go?

Answers are at the back of this pack.

### Check for understanding

- Answer the Big Question in a sentence or two: Coordinates include a unit of measure called a “degree.” What does a degree measure?

- Use one of today's words in a sentence of your own.

### **Activity pages**

- Activity Page 3.1: Source Map: The United States, 1869 — Teacher Guide PDF page 74
- Activity Page 3.2: Source Map: St. Joseph, Missouri — Teacher Guide PDF page 75
- Activity Page 1.1: Source Map: The Ride of Paul Revere — Teacher Guide PDF page 68
- Activity Page 1.2: Source Map: Southern California Highways — Teacher Guide PDF page 69
- Activity Page 1.3: Source Map: Roadways in San Diego, California — Teacher Guide PDF page 70
- Activity Page 2.1: Source World Map: Parallels of Latitude — Teacher Guide PDF page 71
- Activity Page 2.2: Source World Map: Meridians of Longitude — Teacher Guide PDF page 72
- Activity Page 2.3: Source World Map: Parallels of — Teacher Guide PDF page 73
- Activity Page 3.3: Domain Vocabulary: Chapters 1-3 — Teacher Guide PDF page 76

## Chapter 4: Time Zones

### THE BIG QUESTION

### How are time zones and Earth's rotation connected?

#### Words to know

- **international date line** — generally follows 180° longitude; by international agreement, the calendar day on the east side of the line is one day earlier than the calendar day on the west side of the line *The day of the week changed from Tuesday to Wednesday as the ship, sailing westward across the Pacific Ocean, crossed the international date line.*
- **time zone** — one of twenty-four zones around Earth within which everyone observes the same time *Arnav went from one time zone to another when he traveled from South Carolina to Wisconsin.*
- **axis** — an imaginary line around which a spinning object spins *Earth's axis is slightly tilted to one side.*
- **rotation** — the movement of a spinning object *It takes twenty-four hours for the Earth to complete a full rotation on its axis.*

#### Read

Read Chapter 4 in the Student Reader: PDF pages 37–46. Look at the pictures and maps together.

#### Talk it over

1. How does the international date line differ from the 180° meridian?
2. What was done to address the experience of Magellan's crew and others who traveled around the world?
3. What is a time zone?
4. How many time zones are there in total around the world?
5. When it is the middle of the day in the place where you live, what time is it on the opposite side of Earth?
6. How does the fact that it is nighttime in China when it is daytime in the United States explain the need for time zones?
7. If it's 1:00 p.m. in your time zone, what time is it in the next time zone east? What time is it in the next time zone west?

Answers are at the back of this pack.

#### Check for understanding

- Answer the Big Question in a sentence or two: How are time zones and Earth's rotation connected?
- Use one of today's words in a sentence of your own.

## **Activity pages**

- Activity Page 4.1: Source Map: International Date Line — Teacher Guide PDF page 77
- Activity Page 2.1: Source World Map: Parallels of Latitude — Teacher Guide PDF page 71
- Activity Page 2.2: Source World Map: Meridians of Longitude — Teacher Guide PDF page 72
- Activity Page 3.1: Source Map: The United States, 1869 — Teacher Guide PDF page 74
- Activity Page 4.2: Time Zones and Map Skills Puzzles — Teacher Guide PDF page 78

## Chapter 5: How to Read Physical Maps

### THE BIG QUESTION

**What does a physical map reveal that a city road map does not?**

### Words to know

- **valley** — an area of low land bordered by land of higher elevation *Shamika planned a picnic lunch in the valley beside the mountain.*
- **physical map** — a type of map that shows the distribution of one or more of Earth's physical features; for example, taller land areas, such as mountains, and lower land areas, such as valleys *Dante looked at the physical map to determine whether there were mountains on his route west.*
- **elevation** — the height of something; on maps, elevation is shown as the number of feet above or below sea level *The city of Pittsburgh is at a higher elevation than the city of Philadelphia.*
- **mountain range** — a line or group of mountains *The Appalachian Mountains are a vast mountain range in the eastern part of the United States.*
- **peak** — the top or highest point on a mountain *From the airplane, Cornell had a bird's-eye view of the countryside below.*
- **sea level** — land that is the same elevation as the surface of the sea or ocean *Because New Orleans was built below sea level, the city often floods.*

### Read

Read Chapter 5 in the Student Reader: PDF pages 47–56. Look at the pictures and maps together.

### Talk it over

1. What does a physical map show?
2. What does the elevation show on a physical map?
3. Using the physical map on page 46, within which mountain range in the United States, excluding Alaska and Hawaii, is the highest mountain peak located?
4. Using the physical map on page 46, what is the lowestlying land region in the United States?
5. What is a “bird's-eye view”?
6. How is sea level used in elevation?
7. Why do you think geographers and cartographers (people who make maps) use sea level as the basis for elevation?
8. Which trail did you pick to hike from the Hidden Treasures Cavern to Camp Arrowhead? Why?

9. Why would it be a good idea to check a physical map before you started out on a hike from one place to another?

Answers are at the back of this pack.

### **Check for understanding**

- Answer the Big Question in a sentence or two: What does a physical map reveal that a city road map does not?
- Use one of today's words in a sentence of your own.

### **Activity pages**

- Activity Page 5.1: Domain Vocabulary: Chapters 4-5 — Teacher Guide PDF pages 79-80

## UNIT QUIZ

# Using Maps

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Circle the letter of the best answer.

- 1.** If you're planning a trip, you might use two different road maps because
  - a) some maps are flat and some are round.
  - b) some maps are very inaccurate.
  - c) maps of different scale provide different information about places.
  - d) different maps have different keys.
- 2.** Which of the following can help you find the distance between two towns on a map?
  - a) the map scale
  - b) map colors
  - c) compass rose
  - d) the map key
- 3.** If a map's scale shows that one inch on the map equals five miles in real life, how many inches on the map would stand for ten miles?
  - a) two inches
  - b) four inches
  - c) five inches
  - d) ten inches
- 4.** Which of the following is the best description of what a map scale looks like?
  - a) It's always round.
  - b) It looks like a ruler.
  - c) It has a list of symbols.
  - d) It has different colors.
- 5.** On a map, what is the name of the symbol with four arrows pointing in different directions?
  - a) altitude
  - b) key
  - c) scale
  - d) compass rose
- 6.** Date Ferdinand Magellan's crew found that their trip had taken one more day than their own careful records showed. This helps explain why today we have
  - a) Global Positioning Systems.
  - b) a system of parallels and meridians.
  - c) Northern and Southern Hemispheres.
  - d) an international date line.

- 7.** On a map or a globe, what is the term for the lines that run from east to west?
- a) coordinates
  - b) meridians
  - c) parallels
  - d) international date lines
- 8.** Which statement is true?
- a) Parallels of latitude sometimes meet.
  - b) Parallels of latitude are parallel to each other.
  - c) Meridians of longitude never meet.
  - d) Meridians of longitude meet only at the North Pole.
- 9.** Which statement is true about the imaginary line that runs around Earth, halfway between the North and South Poles?
- a) It's a meridian of longitude.
  - b) It's called the equator.
  - c) It's called the prime meridian.
  - d) It is located at 10° N latitude.
- 10.** Where would 10° S latitude be in relationship to the equator?
- a) south of the equator
  - b) north of the equator
  - c) east of the equator
  - d) west of the equator
- 11.** What does the small circle stand for in "90° S"?
- a) temperature
  - b) degrees
  - c) longitudes
  - d) percent
- 12.** In general, what happens to the temperature as you move from a lower number of degrees of latitude to a higher number of degrees of latitude?
- a) It does not change.
  - b) It gets higher.
  - c) It gets lower.
  - d) It is likely to go both up and down.
- 13.** If you and a friend both traveled north on different meridians of longitude from the South Pole, which of the following statements would be true?
- a) You would not meet again.
  - b) You would get close to each other at the equator.
  - c) You would meet again at the North Pole.
  - d) Your paths would cross at the prime meridian.

**14.** What do map coordinates do?

- a) They indicate the actual distance between two points on a map.
- b) They show where parallels of latitude cross.
- c) They help you determine the time of day in different locations.
- d) They let you pinpoint a location on the map.

**15.** When you cross this imaginary line on the map, the calendar shifts to a different day.  
What is this line?

- a) the equator
- b) the prime meridian
- c) the 180° meridian
- d) the international date line

**16.** How many time zones are there on the globe?

- a) 24
- b) 15
- c) 4
- d) 8

**17.** In terms of maps and globes, how many minutes are in one degree?

- a) 1
- b) 15
- c) 30
- d) 60

**18.** What does ' stand for in 41°38' N?

- a) degrees
- b) latitudes
- c) minutes
- d) parallels

**19.** If you were in the Central Time Zone and your watch said 1:00 p.m., what time would it be in the Eastern Time Zone?

- a) 12:00 p.m.
- b) 2:00 p.m.
- c) 12:00 a.m.
- d) 2:00 a.m.

**20.** A person might cross the international date line when he or she

- a) travels across the United States.
- b) flies from the Northern Hemisphere to the Southern Hemisphere.
- c) travels from the Western Hemisphere to the Eastern Hemisphere.
- d) moves from one time zone to another.

- 21.** What kind of map would show the natural features of the land?
- a) physical map
  - b) international map
  - c) colored map
  - d) time-zone map
- 22.** What is another word for the height of the place?
- a) axis
  - b) coordinates
  - c) elevation
  - d) meridian
- 23.** What do most physical maps use to show differences in elevation?
- a) lines or color
  - b) scale and coordinates
  - c) trails or routes
  - d) a map scale and compass rose
- 24.** Which of the following would you use a physical map to show?
- a) cities and towns
  - b) boundaries of states and countries
  - c) tourist attractions in an area
  - d) mountains and valleys
- 25.** If you were reading a road map and you wanted to know which roads were interstate highways on the map, you would check the
- a) the map key.
  - b) the map scale.
  - c) the compass rose.
  - d) the map coordinates.

## Answers

### Chapter 1: Measuring Distance on a Map

1. **What information does a map key contain?**

A map key contains information about the symbols used for items on the map such as towns, highways, schools, or mountains.

2. **What can you tell by using the scale on a map?**

You can tell the distance from place to place.

3. **Why do mapmakers use map scales to represent distance?**

The purpose of a map is to represent a very large area in a much smaller space. The map scale is a way to show how the actual area compares to what's shown on the map.

4. **Where is the San Diego Zoo located?**

Students may respond that the San Diego Zoo is located in Balboa Park. It is also located in Southern California.

5. **What information does the map of San Diego show?**

The map of San Diego shows important roads and locations in the city of San Diego, for example, Balboa Park.

6. **What information does the map of Southern California show?**

The map of Southern California shows information about how to get between cities, including major highways.

7. **Why might it be necessary for travelers to use both a city and a state or regional map to find their way?**

Each type of map features different types of information. A regional or state map could be used to get the travelers to their destination city. Meanwhile, the city map can help them find important attractions.

8. **What does a compass rose show?**

A compass rose shows the directions north, south, east, and west.

9. **According to the map of San Diego, which state highway travels in an east-west direction just south of Balboa Park?**

State Highway 94 runs in an east-west direction just south of Balboa Park.

10. **Why is it a good idea to know more than one route to your destination?**

Possible answers: A road might be closed because of construction; you might decide on the way to visit something interesting, which would require you to use a different road.

### Chapter 2: Latitude and Longitude

1. **What is radar used for?**

Radar, a tool that uses radio waves, helps determine the location, distance, and speed of an object.

2. **Why would it be especially important for a sailor to have access to navigational tools like radar or GPS?**  
If a sailor is traveling on the open ocean, he or she could easily get lost without landmarks. Navigational tools can help sailors stay on the right course.
3. **What are the lines that run east-west on a map or globe called?**  
The lines are called parallels. They measure the degrees of latitude north or south of the equator.
4. **What degree of latitude is the equator?**  
The equator is  $0^{\circ}$  latitude.
5. **Between what degrees of latitude is the continent of South America located?**  
South America is located between  $20^{\circ}$  N and about  $55^{\circ}$  S latitude.
6. **What North American city is located at approximately  $25^{\circ}$  N?**  
The city of Miami is located at about  $25^{\circ}$  N.
7. **Using your thumb and the map scale, what is the approximate distance between North America and Europe at  $40^{\circ}$  N?**  
The distance is about four thousand miles.
8. **Using the compass rose, is the continent of Africa to the east or west of the continent of Australia?**  
Africa is to the west of Australia.
9. **Why do you think people use maps to locate points and get directions instead of using globes, which can more accurately show distance on Earth's surface?**  
While globes are a more accurate representation, they are not very convenient. It's much easier to carry a map with you to find distance or relative location than it is to carry a globe.
10. **What happens to the temperature the closer you get to the equator?**  
The temperature gets higher closer to the equator.
11. **What is the Northern Hemisphere?**  
It is the half of Earth north of the equator.
12. **The text said Fairbanks, Alaska, is located at about  $64^{\circ}$  N and that Honolulu, Hawaii, is located at  $21^{\circ}$  N. What do you think the temperature would be like in each of these cities in January? Why?**  
The temperature in Fairbanks would likely be very low in January because it is far to the north of the equator. Honolulu is very much closer to the equator, and the temperature would be much higher.
13. **Why is it generally warmer in Mexico than it is in Canada?**  
Mexico is closer to the equator than Canada.
14. **What is the measure  $0^{\circ}$  longitude called?**  
The measure  $0^{\circ}$  longitude is called the prime meridian.

**15. How are meridians and parallels different?**

Meridians run in a north-south direction and move closer together as they near the North and South Poles. Parallels run in an east-west direction alongside each other but never touch.

**16. What is a coordinate?**

A coordinate is the place where a line of latitude and line of longitude cross, or intersect. Page 23 G4\_U1\_Chap02\_SE.indd 23

**17. Using the map on page 21 or AP 2.3, where is the ship headed if its final destination is just south of 40°N and 120°W?**

The ship appears to be headed to San Francisco, on the West Coast of North America.

### **Chapter 3: Finding a Place on a Map**

**1. How many minutes are there in one degree?**

There are sixty minutes in one degree.

**2. In finding a place on the map, why is it important to know both its latitude and longitude?**

If you know only the latitude or longitude of a place, you cannot pinpoint its location. Knowing both the latitude and longitude enables you to find where the parallel and meridian lines cross and to find the place's exact location.

**3. The coordinates for Promontory Point are 41°38' N, 112°30' W. Why is it important to include the designation 'N' for latitude and the designation 'W' for longitude as part of the coordinates?**

If the directional designations for latitude and longitude were not included, it would be impossible to identify the precise location indicated by the coordinates. For example, 41° latitude could refer to two possible locations, one at 41° N or another at 41° S. Likewise, 112° longitude could refer to two possible locations at either 112° E or 112° W.

**4. What was the Pony Express?**

The Pony Express was a way of delivering mail before the U.S. Postal Service existed. Riders relayed letters and packages throughout the Wild West.

**5. What is an atlas?**

An atlas is a large book that contains many different maps.

**6. How is using an index helpful?**

An index makes it possible to easily locate information in an atlas or other type of book. This can save you time, instead of having to flip through every single page to find the information you're looking for.

**7. What kinds of coordinates are used on some road maps in place of longitude and latitude?**

Some maps use number and letter coordinates, for example C-3.

**8. How does the map of Saint Joseph, Missouri, differ from other maps you've seen in this unit so far?**

It uses coordinates made up of numbers and letters rather than parallels and

meridians.

9. **If you were a guide at the Pony Express Museum and someone asked you for directions to the Albrecht-Kemper Art Museum, how would you direct the person to go?**

Possible Answer: He or she could go north on 10th street to Fredrick Avenue and then turn right and pass Noyes Boulevard on the right. The museum is on the right a little beyond Noyes Boulevard. The distance is about two miles.

## **Chapter 4: Time Zones**

1. **How does the international date line differ from the 180° meridian?**

Unlike the 180° meridian, the international date line zigs and zags in some places to avoid passing through places where people live.

2. **What was done to address the experience of Magellan's crew and others who traveled around the world?**

The international date line was established.

3. **What is a time zone?**

A time zone is a specific area on the globe where everyone living there experiences the same time. 41

4. **How many time zones are there in total around the world?**

There are twenty-four time zones around the world.

5. **When it is the middle of the day in the place where you live, what time is it on the opposite side of Earth?**

It is the middle of the night on the other side of Earth.

6. **How does the fact that it is nighttime in China when it is daytime in the United States explain the need for time zones?**

Because it can be day and night at the same moment on different parts of Earth, it is useful to have a system for explaining how times differ in different parts of the world.

7. **If it's 1:00 p.m. in your time zone, what time is it in the next time zone east? What time is it in the next time zone west?**

It is 2:00 p.m. in the next time zone east. It is noon in the next time zone west.

## **Chapter 5: How to Read Physical Maps**

1. **What does a physical map show?**

A physical map shows the physical features of an area, such as hills, mountains, and valleys.

2. **What does the elevation show on a physical map?**

The elevation shows how high the land is.

3. **Using the physical map on page 46, within which mountain range in the United States, excluding Alaska and Hawaii, is the highest mountain peak located?**

The highest mountain peak is in the Rocky Mountains.

4. **Using the physical map on page 46, what is the lowestlying land region in the United States?**

Student responses may vary. The first explorers to an area walked around and kept track of the terrain. The use of modern technology such as satellites can take photos of Earth's surface and accurately measure distances and elevations.

5. **What is a “bird’s-eye view”?**

A “bird’s-eye view” is the overhead perspective of an area of land, like what a flying bird might see.

6. **How is sea level used in elevation?**

Elevation is measured relative to sea level. Sea level can be thought of as “zero”; anything above sea level is measured in positive numbers above this point.

7. **Why do you think geographers and cartographers (people who make maps) use sea level as the basis for elevation?**

Student responses may vary. Sea level is a fairly constant factor that can be easily adjusted for. Using the level of the sea is a good way to determine relative distance.

8. **Which trail did you pick to hike from the Hidden Treasures Cavern to Camp Arrowhead? Why?**

Students should be able to defend their choices by explaining the characteristics of the trail they chose and why they considered it preferable to the option they did not choose.

9. **Why would it be a good idea to check a physical map before you started out on a hike from one place to another?**

The physical map would show obstacles, such as canyons or mountains, that you should avoid on your hike.

### **Unit quiz key**

1. c 2. a 3. a 4. b 5. d 6. d 7. c 8. b 9. b 10. a 11. b 12. c 13. c 14. d 15. d 16. a 17. d 18. c 19. b 20. c 21. a 22. c 23. a 24. d 25. a