Mapping Our World

SECTION 2.1 Latitude and Longitude

In your textbook, read about latitude and longitude. Match the definition in Column A with the term in Column B.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Science of mapmaking</td>
<td>a. prime meridian</td>
</tr>
<tr>
<td>2. Imaginary line that separates Earth into northern and southern hemispheres</td>
<td>b. longitude</td>
</tr>
<tr>
<td>3. Distance in degrees north or south of the equator</td>
<td>c. cartography</td>
</tr>
<tr>
<td>4. Distance in degrees east or west of the prime meridian</td>
<td>d. equator</td>
</tr>
<tr>
<td>5. Reference point for longitude that passes through Greenwich, England, and represents 0°</td>
<td>e. latitude</td>
</tr>
</tbody>
</table>

In the space at the left, write true if the statement is true; if the statement is false, change the italicized word or phrase to make it true.

6. The equator is located halfway between the north pole and the prime meridian.

7. Lines of latitude run parallel to the equator.

8. The equator is at 180° latitude.

9. The south pole is at 90° south longitude.

10. One degree of latitude is equivalent to about 111 km on Earth’s surface.

11. Each degree of latitude is divided into 360 minutes.

12. Lines of longitude are also called meridians.

13. The prime meridian is the reference line for latitude.

14. Points east of the prime meridian are located between 0° and 180° east longitude.

15. Lines of longitude are semicircles that extend from the north pole to the south pole.

16. Each degree of longitude corresponds to about 111 km at the north pole.

17. All meridians converge at the poles.
SECTION 2.1  *Latitude and Longitude, continued*

In your textbook, read about locating places with coordinates. Use the map grid to answer the following questions.

18. What is the latitude of point A?

19. Which two points have the same latitude? What is that latitude?

20. What is the longitude of point B?

21. Which two points have the same longitude? What is that longitude?

22. What are the coordinates of point C?

In your textbook, read about time zones. Circle the letter of the choice that best completes the statement or answers the question.

23. Into how many time zones is Earth divided?
   a. 12  
   b. 24  
   c. 60  
   d. 360

24. Approximately how wide is each time zone?
   a. 15°  
   b. 30°  
   c. 60°  
   d. 180°

25. The International Date Line is located at the
   a. 0° line of latitude  
   b. 180° line of latitude  
   c. 0° meridian  
   d. 180° meridian

26. When you travel east across the International Date Line, you
   a. advance your calendar one day  
   b. advance your calendar 12 hours  
   c. move your calendar back one day  
   d. move your calendar back 12 hours
SECTION 2.2  Types of Maps

In your textbook, read about Mercator, conic, and gnomonic projections. Label each map projection as conic, gnomonic or Mercator.

Write the name of the map projection—Mercator, conic, or gnomonic—for each description.

1. ________________  4. Used as road and weather maps
2. ________________  5. Has parallel lines of latitude and longitude
3. ________________  6. Made by projecting points and lines from a globe onto a piece of paper that touches the globe at a single point

7. Distorts direction and distance between landmasses
8. Exaggerates the areas of landmasses near the poles, but correctly shows their shape
9. Made by projecting points and lines from a globe onto a cone
10. Has very little distortion in the areas or shapes of landmasses that fall along a certain line of latitude
11. Used by navigators to plot great-circle routes
The Nature of Science

SECTION 1.1  Earth Science

In your textbook, read about the scope of Earth science.
Use the terms below to identify the major area of Earth science that studies each subject. Each term can be used more than once.

<table>
<thead>
<tr>
<th>term</th>
<th>subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>astronomy</td>
<td>Physical and chemical properties of the oceans</td>
</tr>
<tr>
<td>meteorology</td>
<td>Objects beyond Earth’s atmosphere</td>
</tr>
<tr>
<td>geology</td>
<td>Materials that make up Earth</td>
</tr>
<tr>
<td>oceanography</td>
<td>Forces and processes that produce weather</td>
</tr>
<tr>
<td></td>
<td>Earth’s neighbors, distant stars, and other cosmic bodies</td>
</tr>
<tr>
<td></td>
<td>Rocks, glacial movements, and clues to Earth’s history</td>
</tr>
<tr>
<td></td>
<td>Creatures that inhabit salty water</td>
</tr>
<tr>
<td></td>
<td>Blanket of air that surrounds Earth</td>
</tr>
</tbody>
</table>

Circle the letter of the choice that best completes the statement or answers the question.

9. What subspecialty of Earth science studies patterns of weather over a long period of time?
   a. geochemistry          b. climatology          c. tectonics          d. paleontology

10. Hydrology is the study of which of the following?
    a. habitats of organisms
    b. effects of internal processes on Earth’s surface
    c. water flow on and below Earth’s surface
    d. how the moon and stars affect people’s lives

11. What subspecialty of Earth science studies ancient environments?
    a. paleontology           b. ecology           c. tectonics           d. hydrology

12. Which of the following might an ecologist study?
    a. earthquakes and mountain building
    b. the remains of organisms that once lived on Earth
    c. the kinds of matter in the universe
    d. how organisms interact with each other and their environments

13. In what field do scientists study the processes that change Earth’s composition?
    a. climatology          b. hydrology          c. geochemistry          d. paleontology