RAND McNALLY

Atlas

of the United States

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THE DISCOVERER'S TOOLS

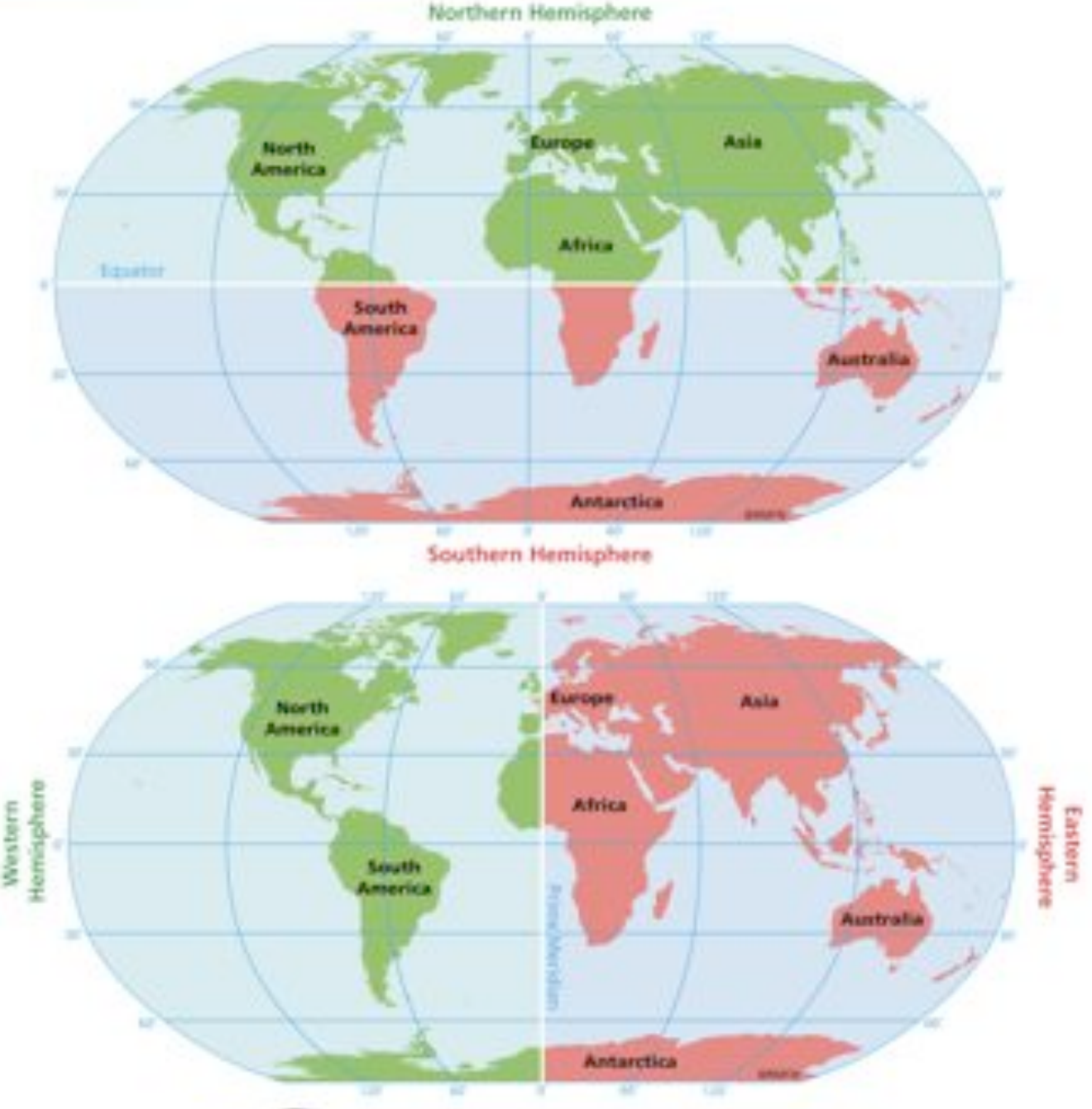
Hemispheres

Halves of the Earth

People have invented ways to refer to different parts of the earth. The earth is round like a sphere, so people refer to half of the earth as a **hemisphere**. The prefix "hemi" means half.

The Equator divides the earth into northern and southern halves. The half that is north of the Equator is the **Northern Hemisphere**. The half that is south of the Equator is the **Southern Hemisphere**.

The earth can be divided into eastern and western halves as well. We use the circle that is formed by the Prime Meridian and the 180th meridian as the dividing line between the two halves. The half that extends west from the Prime Meridian to the 180th meridian is the **Western Hemisphere**. The half that extends east from the Prime Meridian to the 180th meridian is the **Eastern Hemisphere**.



TIME TO EXPLORE

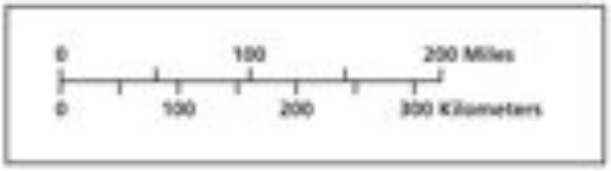
Getting Your Bearings: If you study the world maps on this page, you can see that North America is located in the Northern Hemisphere as well as in the Western Hemisphere. Is it possible for a continent to be located in just one hemisphere?

THE DISCOVERER'S TOOLS

Map Scale

What is a Bar Scale?

A **bar scale** is a valuable tool. It is used to measure distances between points on a map in order to find out the actual distance on the earth. A bar scale is a straight line with distances marked on it. The distances can be shown in miles, in kilometers, or in both.



The following example demonstrates how to use a bar scale to find out the distance between two points on a map.

Measuring Distance:

Suppose you wanted to measure the distance between Montgomery, Alabama, and Atlanta, Georgia.

Step 1 Place a small sheet of paper on the map. Line up its edge with Montgomery and Atlanta. Make a mark on the paper next to the dot symbol for each of the cities, as in **Figure A**.

Step 2 Place the sheet of paper with the marks beneath the bar scale, as shown in **Figure B**.

Step 3 By comparing the marks with the distances on the bar scale, you can see that the distance from Montgomery to Atlanta is about 150 miles.

Figure A

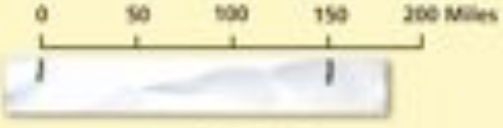


Figure B

Different Scales for Different Maps

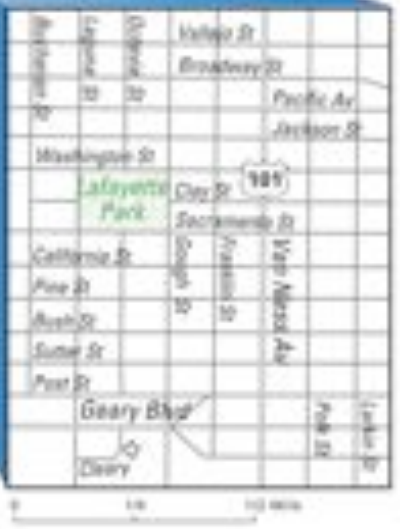
Maps can be drawn to different scales. The three maps on this page all focus on San Francisco, California. The maps are the same size but have different scales. On Map A, one inch represents about 30 miles. On Map B, one inch represents about 4 miles. On Map C, one inch represents about one-half mile.

Because of their different scales, the three maps represent different sizes of areas on the earth.

Map A

Map B

Map C



TIME TO EXPLORE

Judging Scale: Which of the three maps on this page has the best scale for showing more detail of a city, such as its streets and parks?

THE DISCOVERER'S TOOLS

Political and Physical Maps

Political Maps

It would be impossible to show all of the earth's features on a single map. So, mapmakers create maps that show only a few things. For example, the map below is a **political map**, a map that shows political units. A political unit has its own citizens, leaders, and laws. It can be a country, a state, a county, a city, or a province. This political map shows the countries of North America. It also shows some of the largest cities in North America.

Physical Maps

The North America map on this page is a **physical map**, which shows features made by nature. It shows **elevation**, which is the height of the land above sea level. Each color on the map represents a different elevation. Physical maps also show physical features such as mountain ranges, plains, and rivers.

TIME TO EXPLORE

Choosing the Right Map: If you wanted to find mountainous areas where downhill skiing might be possible, which type of map would you use—political or physical?

World Population Density

The world's people are not scattered evenly around the planet. They live in places where they can survive and make a living. Most people live in places with climates that are not too cold or hot, dry or wet. More people live on flat land, where they can grow crops, than on rugged or mountainous land. Very few people live in deserts or very cold regions.

TIME TO EXPLORE

Linking Population and Climate: The map shows that a large area of northern Africa has very low population density—less than 2.5 people per square mile. Why do you think that is?

Hong Kong, China, is a city with a very high population density.

This crowded street market is in Mumbai, India. Find Mumbai on the map. India's population is one of the densest in the world.

La Paz, the capital of Bolivia, is a medium-size city. It sits at the heart of an urban area with a density of 62.5 to 250 people per square mile.

This photo shows a small village in central Africa. The surrounding area has an average density of 2.5 to 62.5 people per square mile.

In the Australian Outback, settlements such as this sheep ranch are separated by miles of open land.

Some regions of the world have very few people. One such region is the Sahara, a vast desert in northern Africa. It is too dry to support large populations.

United States Environments

Everything that surrounds you is your **environment**. The environments map to the right shows the different types of environments found in our country—what you would likely see if you visited any particular place.

Imagine that you could go back in time and see what the land looked like a few hundred years ago. You would find that many areas had different environments than they do now. For example, many areas that are now cropland were once grassland or forest.


Annual Precipitation Map
Under 10 inches
10-20 inches
20-40 inches
40-60 inches
60-80 inches
Over 80 inches
©Rand McNally & Company
Seattle
San Francisco
Los Angeles
Phoenix
Denver
Dallas
Houston
Minneapolis
Chicago
Detroit
Boston
New York
Washington, D.C.
Atlanta
Miami
Atlantic Ocean
160°
120°
110°
100°
90°
80°
70°
60°
50°
30°

Hemispheres as References

LESSON 6
Atlas pages 14–15

Overview

Students will examine several kinds of maps and identify the hemispheres of selected places to use in planning a trip.

Objectives Correlated to National Geography Standards

Students will learn:

- That grids and hemispheres can be used to report information about the earth from a spatial perspective (Standard 1)

Curriculum Connections

Math: Using grids

Language Arts: Alphabetizing

Introducing the Lesson

Tell the class that the creation of a global grid gave us a way of referring to certain parts of the earth. Inform them that these references are frequently used to describe locations around the world.

Developing the Lesson

1. Review the differences between the hemispheres in relation to the Poles, the Equator, and the Prime Meridian.
2. Depending on the number of students in your class, break them into four or eight groups. Assign each group one of the four hemispheres.
3. Tell the students that their job is to plan a trip in their hemisphere. They may need to refer to various political maps in your classroom in order to familiarize themselves with the countries in those hemispheres.
4. Their trips should take them through countries in those hemispheres in alphabetical order.
5. Once they have planned their trips, invite the groups to describe their routes. Encourage them to describe their relative locations—whether they are south or north of the Equator, etc.

Assessing the Lesson

Play a game with the class to test their mastery of hemispheres. Give them clues, such as "North of the Equator" and let them call out answers, such as "Northern Hemisphere." Refer to continents as well to help build their mental maps.

WORKSHEET ANSWERS

1. The Western Hemisphere
2. The Northern Hemisphere and the Southern Hemisphere
3. The Prime Meridian
4. The Prime Meridian
5. Australia and Antarctica
6. Check students' maps for accuracy

Thinking Critically:

It is possible for a continent to be located in more than two hemispheres. Africa is located in all four hemispheres.

TIME TO EXPLORE ANSWER

No, places are always located in at least two hemispheres. They are either in the Northern or Southern Hemisphere as well as the Eastern or Western Hemisphere.

Name: _____

Putting the World in Order

WORKSHEET 6

Use the visuals on atlas pages 14–15 to answer the questions below.

1. What hemisphere is west of the Prime Meridian? _____

2. The Equator divides the earth into what two hemispheres?_____

_____

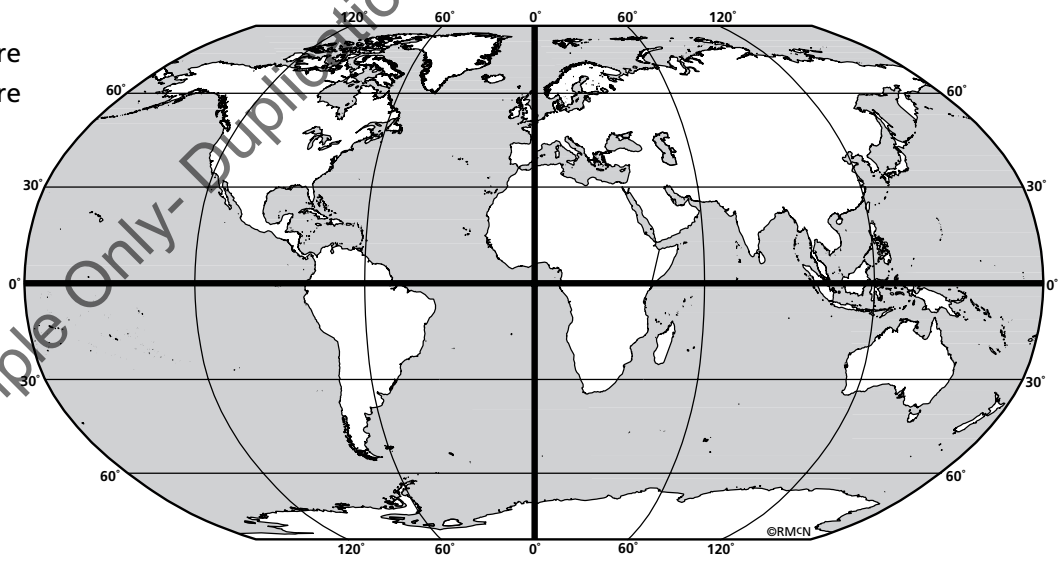
3. Locate the 180th meridian in the Pacific Ocean. What is the same line called on the other side of the globe? _____

4. Which is a line of longitude—the Equator or the Prime Meridian? _____

5. What continents are located completely in the Southern Hemisphere? _____

_____

6. Study the world map below. Label the following features on the map.
   - Equator
   - Prime Meridian
   - Western Hemisphere
   - Eastern Hemisphere
   - Southern Hemisphere
   - Northern Hemisphere
   - North America
   - South America
   - Europe
   - Asia
   - Africa
   - Australia
   - Antarctica



Thinking **Critically**

Is it possible for a continent to be located in more than two hemispheres? Explain and provide one or more examples.

_____

_____