

World Geography



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This edition continues to benefit from the analytical reading the above-named experts gave the original manuscript and the valuable suggestions and criticisms they offered.

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INTRODUCING WORLD GEOGRAPHY

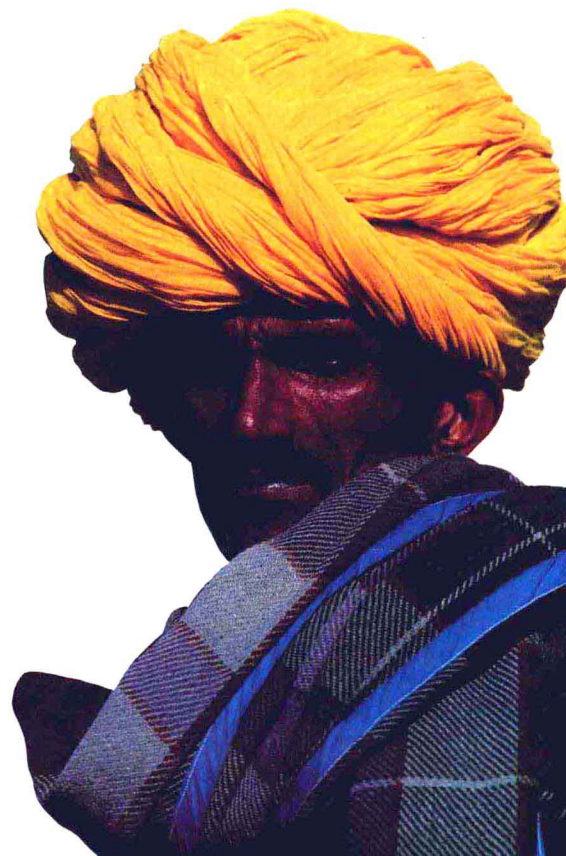
Geography is the study of the earth's places. It deals with how places and peoples are alike and how they are different. It looks at how places and peoples are related. The word **geography** comes from a Greek word, *geographia*. It means "earth description." Scientists who study geography are called **geographers**.

Geographers have many ways of studying and describing places and peoples. Some of their tools are maps, charts, diagrams, satellite images, and photographs.

In this book you too will learn to use some of a geographer's tools. And you will look at the world from at least three different points of view. You will look at it from space, from the air, and from the ground.

Tokyo by night is aglow with lights.

The Grand Canal is the main street of Venice.



THE VIEW FROM SPACE

One way of studying the earth is to look at it from space. Only in recent years have people been able to see the earth from this viewpoint. Some "space-eye" views come from photographs taken by astronauts. The earth as seen from the Apollo spacecraft is a good example. (See page 2.)

Another space-eye view of earth comes from **Landsat images**. These images are not really photographs as you think of them. An astronaut did not take pictures or bring film back to earth. Instead, they are made by a technique called **remote sensing**. Inside a Landsat satellite that circles the earth, a mirror captures light that is reflected from the earth. The pattern of reflected lights and darks forms images.

A series of Landsat images can be put together to show a very large area. The image of the United States on this page is an example. Before Landsat, the United States was always shown as a drawing by a mapmaker. Now you can see a more accurate image of what the continental United States looks like.

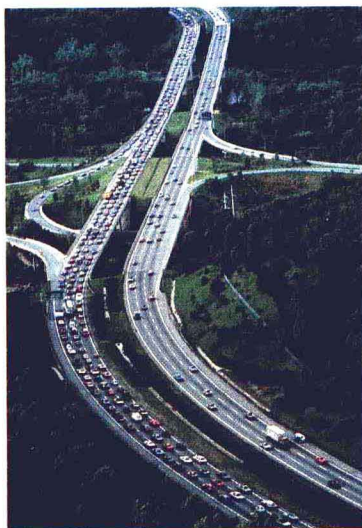
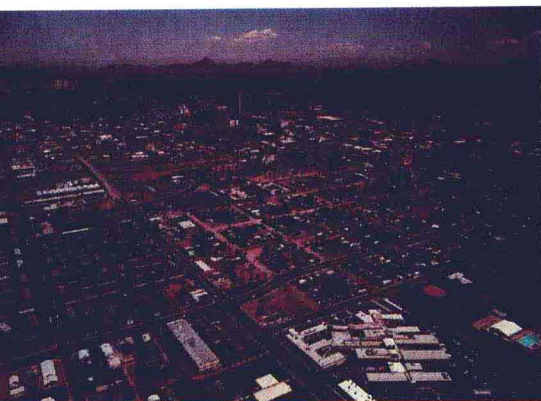
Scientists are using remote sensing in many ways. They use it to get a true notion of the earth's land and water forms. They use it to see the effects of different climates



Astronauts on the moon saw the earth from a new point of view. • Many Landsat images put together form a mosaic like this map of the contiguous area of the United States.



Aerial photos give an overview of a California suburb by the sea . . . • the city of Phoenix, Arizona . . .



and a rush-hour traffic scene.

on vegetation. They use it to locate natural resources. And they use it to see how one part of the world affects another part.

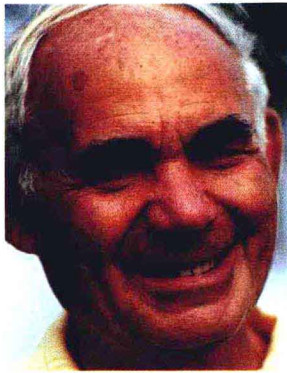
In Unit One you will study certain geographic features of the earth—land and water forms, climate, environments, and natural resources. Photographs, Landsat images, and maps will give you an overview of the earth.

THE VIEW FROM THE AIR

In Unit Two people are added to the earth's description. You will see how the environment affects people and how people affect the environment. The process works both ways.

A space-eye view does not show much about people. But from an airplane you can see how people use the land to get food and shelter. And from the land and its resources they produce other things they need to live. The view from the air also shows how people are distributed across the land.

From the air you can see where people have built cities and factories. You will see the landforms that make natural boundaries between places. Such boundaries separate



people, but they also unite them into countries. And you will see the networks, such as highways and railroads, that connect different peoples and places.

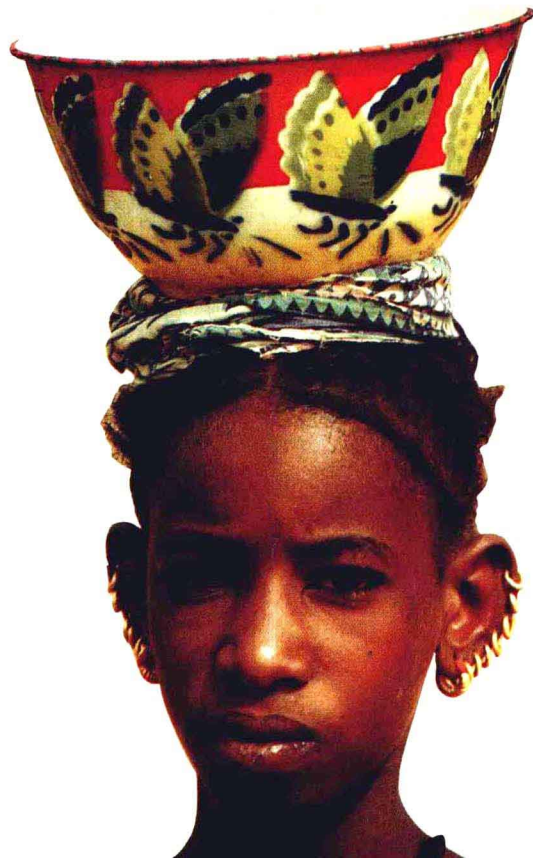
Aerial photography is one of the tools geographers use to look at the earth from above. The aerial photographs on the opposite page show the seashore, a highway, and a city—each one at a glance. From space the details would be invisible. And from the ground you would see them only one at a time. An aerial view offers an excellent way to study many elements in a small region.

THE VIEW FROM THE GROUND

Sooner or later everyone wants a close-up view of the world. Even scientists who use Landsat images test their discoveries. They go to the places shown on the Landsat images to check the facts. There, they gather many different kinds of information. They call their on-the-spot observations getting at ground truth.

Getting at ground truth involves both the earth and the people who live on it. The view from space has shown what the earth is like—its lands, climates, environments, and resources. And the view from the air has shown how people use the land, where they live, how cities and countries grow, and how places are connected.

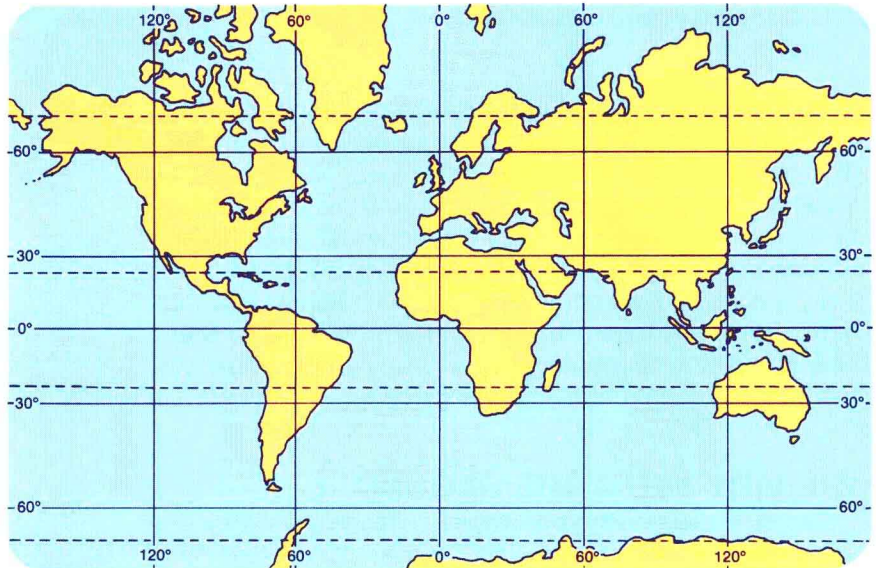
In Unit Three you will get the ground truth about the world you live in. That world is made up of eight major regions. Each region is unique in its land and its people. From the ground, you will see that people in these regions use the earth in very different ways. Yet you will see that certain geographic features and ways of using land are much alike. You will locate and explore the eight regions of the world to learn something about their geography. And you will get to know the people and how they live.



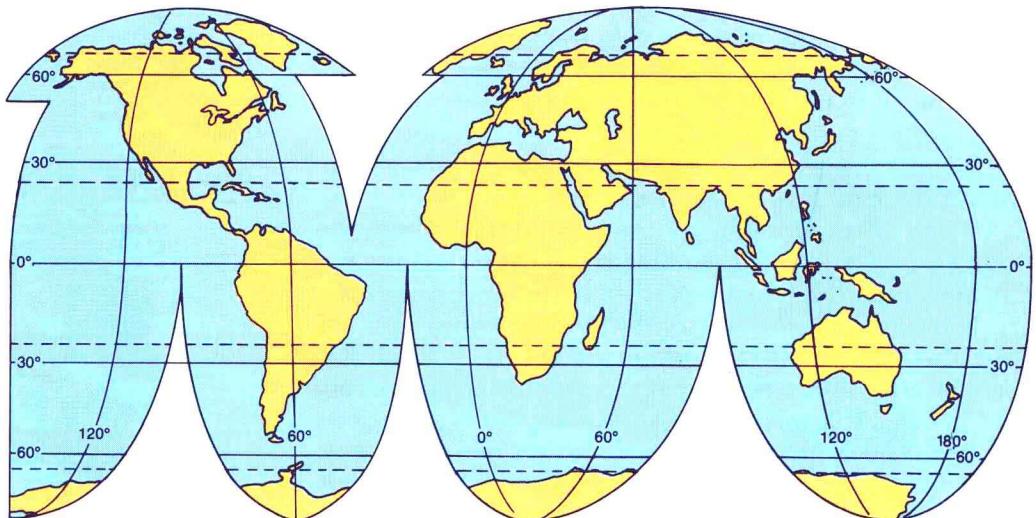
TOOLS OF THE GEOGRAPHER: MAPS

Helping you in your world explorations will be the geographer's favorite tool—maps. Maps are drawings that represent the earth or different places on it. Because the earth is round, a globe is the best way to represent it. But a globe is not as easy to use or to carry around as a flat drawing is. So mapmakers have found ways to use flat drawings, or maps, to show the earth. These different ways of showing the earth are called **projections**. *350/10*

Mercator projection



Interrupted projection

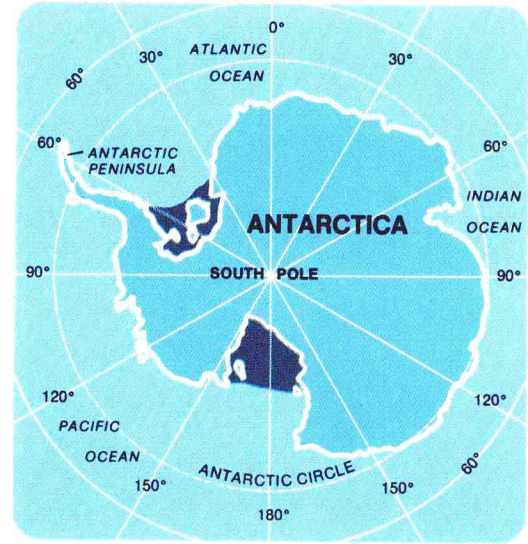


USING MAP PROJECTIONS What happens when the round earth is drawn on a flat surface? Some land areas will be changed in size and shape. And distances between land areas will not be accurate. Look at the map projections on these pages. Some projections show the correct shapes of places, but they make the places look larger or smaller than they really are. Others show the correct size but not the correct shape. When you look at a map, you should note the type of projection it is.

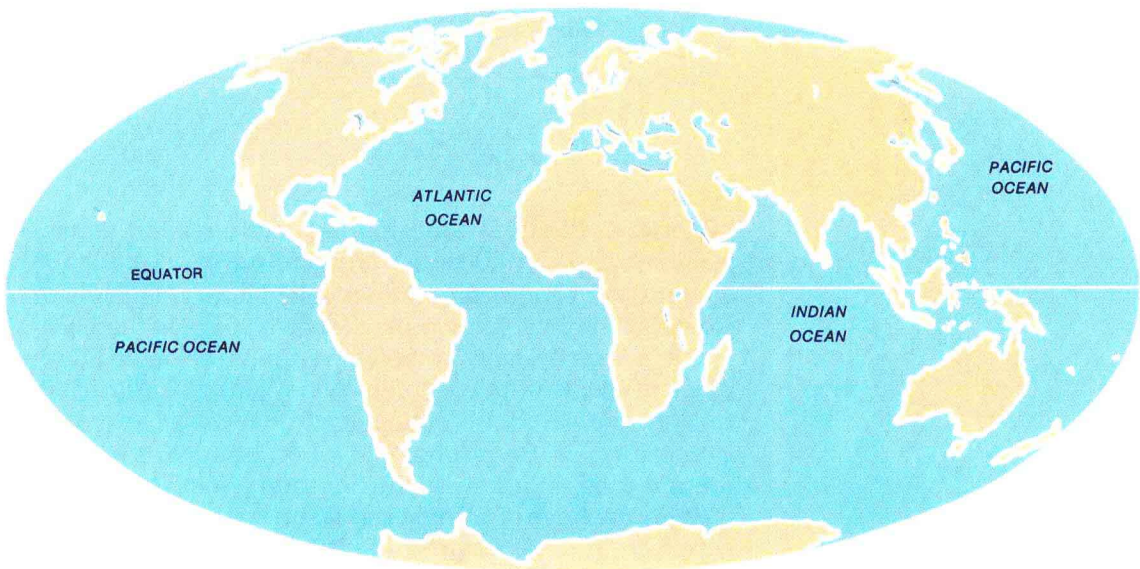
The four projections shown here are often used by geographers. Each has certain strengths and weaknesses. The Mercator (məŕ kăt' əŕ) projection shows accurate shape but inaccurate size, especially close to the poles. An interrupted projection shows both size and shape quite accurately because it divides the world into sections. But this projection makes it hard to tell distances across water. A polar projection shows how the world would appear if you were looking straight down at it from the North Pole or the South Pole. It is accurate near the center but inaccurate toward the edges.

Many of the maps in this book use the Mollweide (mól'vī'də) projection. This is an equal-area projection, with land and water areas drawn in true proportion to each other. The land shapes are not accurate, especially those near the outer edges of the map. However, this is a good projection for showing information about the earth.

Polar projection

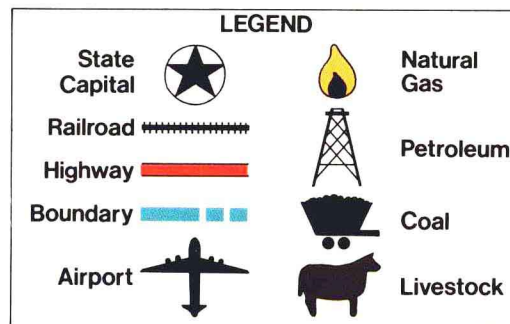
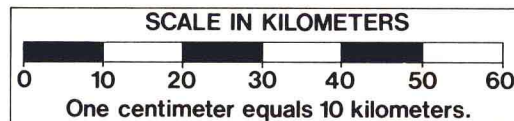


Mollweide projection



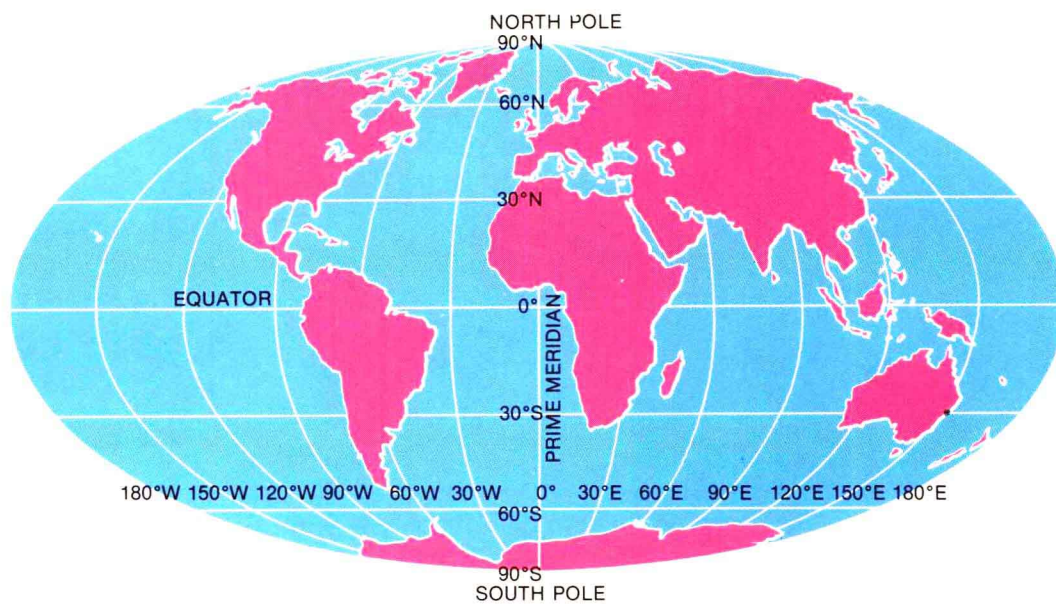
READING MAP SYMBOLS Maps are alike in many ways. Most maps have a title that tells what the map is about. There is often an arrow to show which direction is north. Once you find north, you can tell which ways are south, east, and west. There may also be a **line of scale** so you can measure distance on the map. Sometimes a line of scale has two different units for measuring distance. For the line of scale on this page, what units measure distance?

Maps use a special language of symbols to show information. To use maps as tools, you must learn what these symbols mean. A map's key, or legend, shows the meaning of every special symbol on the map. For the map on this page, what symbol stands for highways? How are state capitals shown?



LOCATING PLACES Geographers use direction to find places on the earth. Places north and south on the globe are measured by imaginary lines called **lines of latitude**, or **parallels**. The best-known parallel of latitude is the **equator**. It is exactly halfway between the North and South poles. It divides the earth into two equal parts, or **hemispheres**. The part between the equator and the North Pole is the Northern Hemisphere. The part between the equator and the South Pole is the Southern Hemisphere.

Study the lines of latitude shown on the map. They measure from 0 to 90 degrees ($^{\circ}$). The equator is at latitude



This world map shows the basic lines of latitude and longitude.

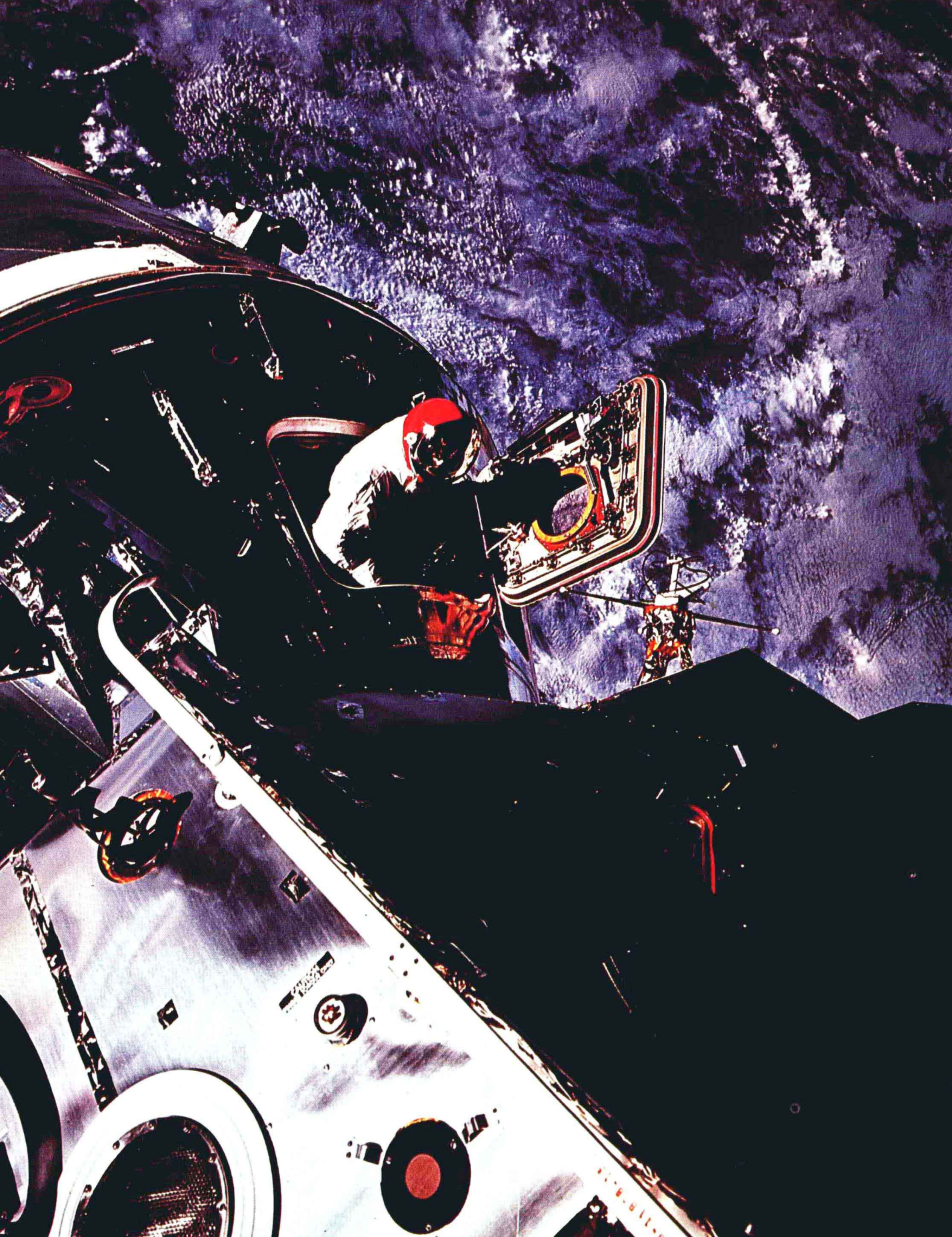
0 degrees. The other numbers tell how far north or south of the equator places are. So 90 degrees north would be at the North Pole. Where would 90 degrees south be?

Geographers use another set of imaginary lines, called **lines of longitude**, or **meridians**, to tell how far east or west a place is. These lines reach from pole to pole and are not parallel.

Longitude is measured from the 0 degree line, called the **prime meridian**, to a line numbered 180 degrees. These two lines divide the earth into Eastern and Western hemispheres. All other longitude lines have numbers to tell how far east or west of the prime meridian they are. Study the lines of longitude shown on the map.

When both sets of lines—latitude and longitude—are combined on a map or globe, the result is a **grid**. A grid is a system of crisscross lines. Look at the world map on this page. Find the place where latitude 30 degrees south crosses longitude 150 degrees east. In what country is this place?

In this book maps are used to present different kinds of information. Some show land and water forms, climates, resources, and environments. Others show population, land use, and transportation routes. Historical maps show the world as it once was. And political maps show the world as it is today. As you study geography, you will learn more about maps. You too will begin to look at maps as an important tool for studying geography.



INTRODUCING WORLD GEOGRAPHYxvi

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