

CHAPTER 1



Mount St. Helens, a volcano in the American Northwest, is just one of the wonders of God's creation.

GEOGRAPHY: FINDING OUR PLACE IN THE WORLD

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PASSPO



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*The Lord by wisdom hath founded the earth; by understanding hath he established the heavens.
(Prov. 3:19)*

God created man and the world for a specific purpose. Every mountain and valley is exactly where He wanted it to be. This planet did not “just happen.” As we behold the earth’s amazing design and provisions for life, our hearts should praise the Creator.

Isaiah tells us that God made the earth to be a home for man, and He supplied it with abundant resources for humans to use and to enjoy. Genesis 1:26 gives God’s reason for making each of us: “Let us make man in our image, after our likeness: and let them have dominion over . . . all the earth.” God made man to show His glory by being like Him. He is the infinite Lord of the universe; humans are the finite lords of His earth. Our challenge is to use the earth’s resources wisely and in a way that honors the Creator.

This unique calling to exercise dominion over the earth is called the **Creation Mandate**. It reveals that we all have a high and glorious calling. But we also bear a heavy burden of responsibility. Our task is complicated by the fact that humans are by nature sinful as a result of the Fall of Adam and Eve (see Genesis 3). In addition to the sin problem, which makes our task harder, the earth is a big and complicated place. If we are to do a good job of using the earth, we will have to study many things—and geography is near the top of the list. We cannot exercise good and wise dominion without knowing about the earth’s physical features, its climates, and the ways in which humans interact on it. Thankfully, God has provided a solution to the sin problem: redemption through the sacrificial death of His Son, Jesus Christ, who paid the price of our sin by dying on the Cross in our place. Redemption also gives us hope and encouragement for our task of exercising dominion over His earth.

I. WHAT IS GEOGRAPHY?

History and geography are both necessary to help us understand the world around us. History is the study of events in *time* (*what* happened and *when*); geography is the study of *space* and *place* (*where* things happen). The basic tool of history is a timeline; the basic tool of geography is a map. One could compare history and geography to a play. History would be the actors and the plot; geography would be the stage on which those actions are played out.

It is not enough, however, just to memorize a list of dates and names of people and places. Beyond *when* and *where*, we want to know *how* and *why*. Geography helps us learn not only where places are but also how they differ and why.

BRANCHES OF GEOGRAPHY

The word *geography* comes from two roots meaning “earth” (*geo-*) and “written description” (*-graphy*). In other words, geography is a description of humanity’s God-given abode—and everything and everyone on it—and how people interact with it and on it in fulfilling their God-given role as stewards of God’s creation.

Geography has two main branches: *physical geography* (the study of the earth and its resources) and *human geography* (the study of

man as he lives on the earth and uses its resources). This distinction is revealed by the titles of the first two units of this book: "The World as God Made It" (physical geography) and "The World as Man Subdues It" (human geography). These two branches are divided into dozens of smaller branches, such as climatology, oceanography, meteorology, and demographics.

One can study the main branches of geography in two ways. *Systematic geography* examines one branch of geography at a time, tying together examples from every region of the world. For example, a chapter titled "Urban Geography" might discuss New York City, London, and Tokyo. *Regional geography*, on the other hand, examines only one region of the world at a time, tying together all of the branches of geography simultaneously. For example, a chapter titled "The Far East" would cover not only the major cities there but also the climate, mountains, resources, and much more about the whole area.

This book combines both approaches. Chapters 1–4 are a general, systematic study of geography concepts, with two chapters on physical geography and two chapters on human geography. You get in these chapters the big picture, learning the basic terms and concepts of geography that are used in the rest of the book to examine the unique features of individual regions and the countries within each region.

THEMES OF GEOGRAPHY

The study of geography has five fundamental themes that you can remember easily using the mnemonic "MR. LIP":

1. *Movement*—of people, goods, ideas, diseases, etc.
2. *Region*—defined by formal boundaries or functions
3. *Location*—either specific (absolute) or relative to the surrounding environment
4. *Interaction*—both among people and between people and their environment
5. *Place*—physical characteristics (mountains, rivers, soils, plant and animal life, etc.) and human characteristics (roads, buildings, agriculture, industry, culture, etc.)

As you study geography, continually remind yourself of these five themes. They will recur many times throughout this book and are critical to a proper understanding of geography.

HISTORY OF GEOGRAPHY

ANCIENT VIEWS OF THE EARTH

Man probably began exploring his world in the Garden of Eden, but any written records of those explorations were lost in the Flood. After the Flood, the Lord commanded Noah to replenish the earth (Gen. 9:1); the work of geography began again. Early mapmakers supplied kings with maps to plan wars, to open new trade routes, and to build new cities. The earliest surviving map is a clay tablet from the Babylonian Empire around 2300 BC that depicts rivers and mountains.

The Greeks were the first ancient people to study the earth extensively. Early seafarers wanted to learn all about their trade routes and the people with whom they traded or might trade in the

future. Alexander the Great, who rose to power in 336 BC, dreamed of conquering the world. After defeating Persia, he hired surveyors to accompany his army on a four-year journey "to the ends of the earth." His march into unexplored central Asia and India greatly expanded the Greeks' knowledge of world geography.

The first great geographer was a Greek mathematician named **Eratosthenes** (ER uh TAHS tuh NEEZ), who lived three centuries before Christ's birth. He summarized Greek understanding of the world in a book titled *Geography* and was the first man to use the

word *geography*. He believed that the world was a sphere and even calculated its circumference as about 25,000 miles, which is very close to its actual 24,860-mile circumference. A century later, another Greek philosopher, **Hipparchus** (hih PAHR kus), made it easier to locate places on maps by drawing a **grid** (a regular pattern of intersecting vertical and horizontal lines).

The Romans borrowed their map-making techniques from the Greeks. They used maps of their vast empire to help them build roads and rule efficiently. The most famous Roman geographer was **Ptolemy** (TAHL uh mee), who lived in the second century after Christ. He promoted a **geocentric** (earth-centered) **theory**, which states that the sun, stars,

and planets revolve around the earth. Ptolemy's amazing map of the world represented land from Britain to China. Both his map and his theory remained unchallenged for almost fourteen centuries.



This is how Eratosthenes thought the world must look based on his calculations.



Ptolemy's map of the world (second century AD)

THE AGE OF EXPLORATION

The translation of Ptolemy's works in the early fifteenth century revived Europe's interest in maps and helped to spark the Age of Exploration. Sea captains mapped the stars and charted the winds to help them plot new sea routes to reach the spices, gold, and jewels of the Orient. After studying Ptolemy's map (which greatly exaggerated the size of Asia), an ambitious young man named Christopher

Columbus decided to try a shortcut to the Orient by sailing westward. Instead, he discovered a new, uncharted world—the Americas. In 1543, **Nicolaus Copernicus** (koh PUR nuh kus) published a lengthy argument for a **heliocentric** (sun-centered) **theory** of the universe.

Along with these advances in science, the art of **cartography** (mapmaking) reached new heights. **Gerhardus Mercator** (mer KAY tuhr) of Flanders published a map in 1569 that became the standard of his day. His well-designed grid enabled seafarers to plot their courses in a straight line. The maps of that period were beautifully illustrated with sea creatures, ships, and other designs to fill in the large areas about which geographers had no information. His system is still used today.

THE MODERN AGE

As European kings began to colonize and conquer the new-found lands, they demanded maps with increasingly more detail and accuracy. They also commissioned extensive surveys of their own lands. The new maps included symbols for **topography** (detailed land features, including their elevations) to help generals move their armies more quickly. When England became the world's leading sea power in the eighteenth century, it also became the world's leading mapmaker.

As modern states began gathering more information about their climates, populations, and resources, they produced *thematic maps* (maps designed to communicate information on particular topics) to display their abstract findings. The United States was late in joining the map race, but that quickly changed. World War II especially spurred U.S. mapmaking efforts. Today, the United States produces hundreds of maps for its troops stationed around the world. The development of airplanes and satellites made it possible to create better, more detailed maps. The U.S. Geological Survey (USGS), founded in 1879, has created a wealth of detailed maps. Radar and infrared satellites have now mapped the ocean floors and the frigid poles.

The most recent innovation is the global positioning system (GPS), which is financed and operated by the U.S. Department of Defense. Although GPS was designed specifically for military use, the government also allows many civilian uses. Twenty-four GPS satellites transmit coded signals to a receiver and calculate position, velocity, and time. It is the most precise indicator available today. Although civilian use is accurate to within 100 meters, military applications are accurate to within ten centimeters!

Although cartographers have produced very detailed and accurate maps of the earth as a result of such innovations, exploration continues. The jungles teem with myriad plant species that have never been cataloged. Millions—even billions—of undiscovered animal communities dot the ocean floor. Despite many famous expeditions, many mountain peaks still have not been climbed. Immense caves remain hidden and beg to be explored.



Copernicus concluded that the earth revolved around the sun, not the sun around the earth.

SECTION QUIZ

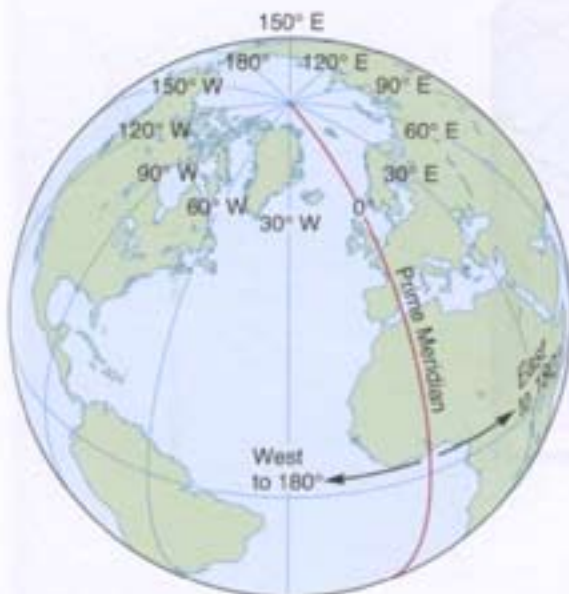
1. What is the Creation Mandate? Why is the study of geography important in relation to this mandate?

Through Christian Eyes

One reason for humans' many remarkable strides in the study of the earth is that we all have at least some of the "insatiable curiosity" of which Buzz Aldrin spoke. Why do you think we are so curious about our world?



Lines of latitude



Lines of longitude

2. Define *geography* and distinguish its two main branches.
 3. Who were the two greatest ancient geographers, and what did each contribute to geography?
 4. What contributions from the Age of Exploration are still used today?
 5. What characteristics of modern maps distinguish them from maps of the ancient world and of the Age of Exploration?
- ❖ Why has the United States become the leading mapmaker in the world?

II. THE GEOGRAPHIC GRID

The *Apollo 11* moon mission was one of the greatest space adventures of the twentieth century and the climax of thousands of years of human exploration and learning. "Far more than three men on a voyage to the moon," observed astronaut Buzz Aldrin, "this stands as a symbol of the insatiable curiosity of all mankind to explore the unknown."

But it was an adventure that could have ended in tragedy. In the years before the space shuttle, which lands on a runway like an airplane, early spacecraft had to splash into the open ocean, where ships would rescue them. A mistake in the calculations for the splashdown could have meant death for the entire crew. But the return trip for *Apollo 11* went smoothly. When the astronauts splashed down in the Pacific Ocean, 950 miles southwest of Honolulu, they were rescued quickly. How did the rescue ship find them so easily, although they were dwarfed by the vast surrounding ocean and virtually impossible to see? The U.S. Navy used the imaginary lines of the *geographic grid* that divide the globe into small sections.

HEMISPHERES

Since the earliest times, geographers have divided the earth's sphere into two halves, calling each half a **hemisphere**. The line that divides the earth into the Northern and Southern hemispheres is the **equator**.

The *Apollo 11* astronauts landed in the Northern Hemisphere. If the earth were flat, the National Aeronautics and Space Administration (NASA) could have located them north of the equator using feet and miles. But the earth is not flat; it is round. It is easier to locate points on a circle using *degrees* (°). NASA needed only two measurements to pinpoint the astronauts' location: degrees of latitude and longitude.

LATITUDE AND LONGITUDE

The first measurement that NASA needed was degrees of **latitude**. Imaginary lines run east and west around the earth. They form circles that are parallel to the equator and are therefore called **parallels** of latitude. They are numbered from 0° at the equator to 90° at the North and South poles. Those numbers are determined by measuring the angle of these circles from the equator. The number of the parallel is followed by an N or an S to designate whether it is north or south of the equator.