

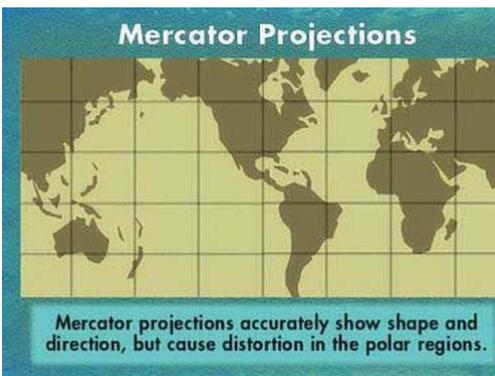
Geography involves the study of civilizations and population changes, environment and ecosystems, and more. Geography can help us learn about the past and present. It can also prepare us for what may happen in the future. Because geography is such a large field of study, the subject is sometimes divided into six basic categories called the Six Essential Elements of Geography. Let's take a look at these elements to see how this design helps to make sense of the world and its people.

The World in Spatial Terms

Road map, school map, atlas, treasure map . . . the first essential element of geography is all about mapping. Maps and related geographic tools, such as satellite imagery or global positioning systems (GPS), provide information from a spatial perspective. This means that they show locations and the relative distances between them. Political maps define territorial borders of cities, states, countries, or other locations. Physical maps show where mountains, oceans, and other physical features are found. Special purpose or thematic maps can show specific spatial information. This information may include where highways or bus lines are located, how much it rains in a certain part of the world, where early people migrated to or from, or even where housing is more or less expensive in a given city.

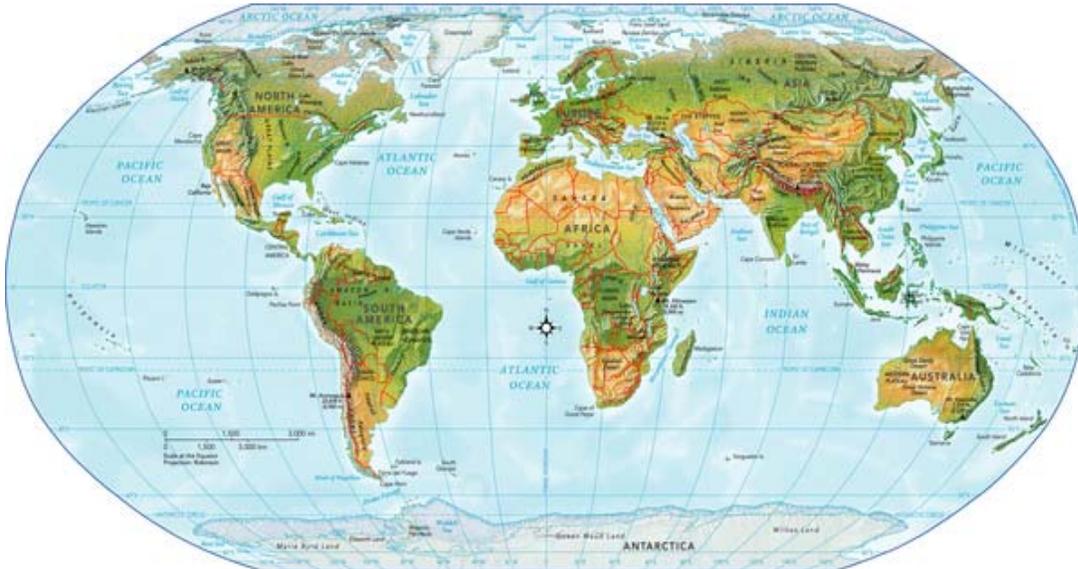


A globe is a three-dimensional map that spatially represents surface features, distances, and other geographic features.



Geographers can alter spatial relationships on maps for different purposes. Because Earth is round and maps are flat, all maps of the world are distorted. Mapmakers use different distortions, called *projections*, to show the world in certain ways. One of the world's first famous mapmakers, Gerard Mercator, created a map called the *Mercator projection* in the 1500s. The Mercator projection created a map for sailors that laid out the continents in a way that showed straight lines across the world. Unfortunately, the map distorted the sizes of the continents, showing Greenland and Africa as similar in size, even though Africa is actually 14 times larger. Another projection called a *Robinson projection* helped correct this problem, but this new projection distorted straight lines between locations.

One thing all maps have in common is that they organize information about people, places, or environments spatially. Whether you are using a map to pinpoint the Florida Keys or using mental map of your neighborhood to guide a friend to the grocery store, you are thinking about the world in spatial terms.



This map of Earth uses a Robinson projection.

Places and Regions

What is the weather and landscape like where you live? Who lives and works in your community? These questions consider the physical and human characteristics of place, bringing us to the second essential element of geography: places and regions. The information in this category helps us understand how the lives of individuals and groups of people are tied to specific locations and regions.

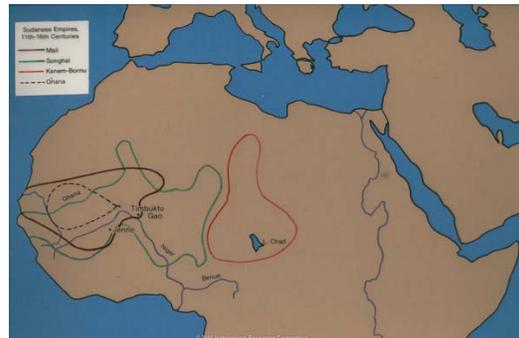
A region is an area with shared features or characteristics. People use regions to help explain similarities and differences between environments and between humans in specific areas. Stretching across the southern part of the United States from Florida to California, the Sun Belt is a region known for its mild winters and booming population. The industrial region south of San Francisco, California, has been known as Silicon Valley since the mid-1900s due to the large concentration of electronics and computer technology companies headquartered there.



New York City's Chinatown is a neighborhood in Lower Manhattan. About 60 percent of all residents in this region are of Asian descent.

New York City, Los Angeles, and other major cities are home to Chinatowns and other ethnic regions where large numbers of culturally similar populations have made their homes. These are only a few examples of some of the regions that define the world, revealing ties between human populations and different areas.

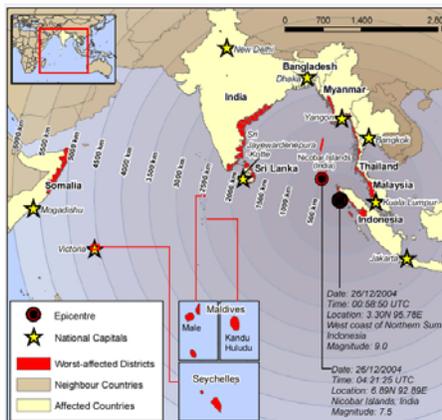
Imagine you are studying ancient African empires. Western Sudan is the name given to a historic region of West Africa that contained several important empires, including Mali and Ghana. A map of this region like the one shown here provides a visual diagram of where these empires were located. The map shows how close the empires were to one another, where they overlap, and the major waterways nearby. Studying this map provides clues about why conflicts and trade occurred among the empires and how connected the cultures may have been.



This map of the great empires of Western Sudan shows the major civilizations in this region from 1000 through 1600.

Physical Systems

In October 2012, Hurricane Sandy hit the eastern United States. The ferocious storm was responsible for more than 230 deaths and caused billions of dollars in damage. It also led to major coastal flooding and beach erosion in places like Florida and New Jersey.



This map shows the epicenter and magnitude of the earthquake and tsunami that hit Indonesia on December 26, 2004.

The third essential element of geography focuses on physical processes in our world. This element explores how natural disasters and physical processes like Hurricane Sandy shape the planet. It also looks at the characteristics of ecosystems to investigate where particular ecosystems are found and why. In December 2004, a major earthquake in the Indian Ocean generated a deadly tsunami. The wave traveled nearly 3,000 miles, destroying thousands of miles of coastline. About 11 million people were left homeless, and more than 150,000 were killed or went missing due to the natural disaster. Maps of this natural disaster help to show where the damage occurred and why.

Human Systems

About 80,000 years ago, early humans traveled out of Africa in a great migration. Since then, human civilizations have spread throughout the world. Later events like European exploration of the Americas have led to population changes. The causes and effects of these migrations are complex and varied. For example, many Irish immigrants came to the United States when their potato crop failed in the mid-1800s. Many settled in the Boston area, creating a large political and cultural influence that is still felt in this region today.

Causes and effects of migration and movement of populations are all part of human systems. Analyzing how people depend on one another economically and culturally as well as the conflicts that occur between groups of people is an important part of understanding the world. Human systems also address population density and human settlement. More than 19 million people live in New York City, whereas less than 2 million live in the whole state of Nebraska. Why do you think that is? What factors make people want to live in certain areas?



This population density map shows how many people live in each square mile of the United States and Canada.

Environment and Society

Humans routinely change the environment for many reasons. We build roads and infrastructure for travel, business, and housing. We dig deep into Earth to mine coal and other minerals. We divert water from rivers and lakes to feed our crops. These are all examples of ways in which humans alter the environment. Sometimes, changing the environment in one area creates changes in other areas. For example, mining can alter the landscape of a mountain and create water pollution in the valley below.

Humans are also naturally affected by the environment in which they live. Located on the coast of the Atlantic Ocean, New England has historically relied on fishing as a major industry. This industry is not so important in a landlocked state like Kansas. However, Kansas is home to a large natural gas field, making natural gas extraction an important industry here. Think about the area where you live. How have people adapted to the environment in your region? How have people changed it?

The Uses of Geography

The final essential element, the uses of geography, helps tie everything together. How many uses of geography are there? The answer is countless! Without physical systems, human systems would not exist. Without human systems, there would be no cultural regions. It would be impossible—and unnecessary—to look at the spatial organization of our planet if there were no humans!



This thematic map shows land use and the location of major resources in the United States and Canada. What factors might contribute to the economic activities in each region?

Imagine you want to learn more about ancient Egypt. You could study maps of the region to gain an understanding of its location. Ancient artifacts like papyrus scrolls and pyramids provide information about the place and culture. Studying the physical landscape and resources—as well as the human inventions and adaptations—teaches you even more about the ancient Egyptians and their way of life. Everything fits together to help you learn more about this ancient civilization. All the essential elements of geography work together to provide a bigger picture of our planet.

After reading the passage, answer the following questions:

1. What is the main idea of the first section of the passage *The World in Spatial Terms*?
 - A. Maps are the basic building blocks of all geography.
 - B. Mapping skills are integral to becoming a geographer.
 - C. There are many kinds of maps, all with different uses.
 - D. Maps are used to organize the position of objects and information.

2. What is the meaning of the term *region* as it is used in the second section of the passage *Places and Regions*?
 - A. A specialized sphere of interest
 - B. A continuous segment of Earth's surface
 - C. An area of land characterized by similar features
 - D. A populated space with obvious natural boundaries

3. Which of the following examples from the text is a statement of opinion rather than fact?
 - A. "We divert water from rivers and lakes to feed our crops."
 - B. "Humans routinely change the environment for many reasons."
 - C. "Humans are also naturally affected by the environment in which they live."
 - D. "Analyzing . . . conflicts that occur between groups of people is an important part of understanding the world."

4. Which of the six essential elements best relate to a study of prehistoric societies? Provide at least two examples, with details and evidence from the passage to support your answer.