

# World Geography

## Chapter 1

# Exploring Geography

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## Chapter 1: Exploring Geography

Section 1: The Study of Geography

Section 2: Changes Within the Earth

Section 3: Changes on the Earth's Surface

# The Study of Geography



- **How do geographers use tools to understand the world?**
- **What are the five themes of geography?**
- **How do geographers identify location, place, and region?**
- **Why do geographers study movement and human-environment interaction?**



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# Geographic Tools



## World Geography Concepts

CONCEPT	DESCRIPTION
<b>Geographic Tools</b>	Instruments used to collect, organize, store, or display geographic information
<b>Physical Characteristics</b>	Features of the Earth's surface, such as landforms, water systems, climate patterns, and plant and animal life
<b>Physical Processes</b>	Actions of nature that change the physical environment
<b>Climates</b>	Regional long-term trends in weather and atmospheric conditions
<b>Ecosystems</b>	Networks of plants and animals interacting with the environment
<b>Patterns of Settlement</b>	Distribution of populations among urban and rural communities
<b>Urbanization</b>	Increase in the percentage of people living in cities
<b>Migration</b>	Movement of people, often influenced by push-and-pull factors
<b>Population Growth</b>	Increase in the number of people in a specific area
<b>Cultures</b>	Learned behavior of people, including their belief systems, languages, governments, and material goods
<b>Science and Technology</b>	Discoveries and inventions that help people to change or adapt to their environments
<b>Government and Citizenship</b>	How different viewpoints influence political decisions, divisions, and policies connected to geographic issues
<b>Cooperation and Conflict</b>	Methods used by countries and organizations to pursue goals, such as maintaining or expanding control over territory
<b>Economic Systems</b>	Ways in which a society satisfies basic needs through the production and distribution of goods and services
<b>Economic Activities</b>	Use of natural resources, production of goods, provision of services, and distribution of information
<b>Global Trade Patterns</b>	International networks for exchanging goods and services
<b>Natural Resources</b>	Any part of the natural environment that people need and value
<b>Natural Hazards</b>	Natural events in the physical environment that are destructive, such as volcanoes and hurricanes
<b>Environmental Change</b>	Natural or human alterations to the environment
<b>Understanding the Past</b>	Analysis of how geography has affected historic events and how places, environments, and cultures have changed over time
<b>Planning for the Future</b>	Use of geographic knowledge and skills to analyze problems and make decisions that affect the future



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# Geographic Tools



- **Geography** means “writing about” or “describing” the earth.
- Geographers use technological tools such as sonar, satellites, and the global positioning system (GPS) to study locations on the earth’s surface.
- Growing in importance are graphic information systems (**GIS**), which use computer technology to analyze and display data about the earth’s surface to solve geographic problems.
- Geographic concepts help organize the way people think about geography.



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# Geography's Five Themes



## Five questions can help organize information about places:

- **What is the location of a place?**
- **What is the character of a place?**
- **How are places similar to and different from other places?**
- **How do people, goods, and ideas move between places?**
- **How do people interact with the natural environment of a place?**



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# Location, Place, and Region



- **Absolute location** describes the position of a place on the globe using the grid of longitude and latitude lines.
- **Relative location** describes the location of a place compared to other places.
- The **character of a place** consists of the place's physical and human characteristics.
- A region is a group of places with at least one common physical or human characteristic, and may be determined by people's **perceptions**, or viewpoints influenced by one's own culture and experiences.
- **Formal regions** are areas in which a certain characteristic is found throughout them.
- **Functional regions** consist of a central place and the surrounding places affected by it.
- **Perceptual regions** are defined by people's attitudes and feelings about areas.



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# Movement and Human-Environment Interaction



- **People, goods, and ideas move between places.**
- **Human beings have made enormous changes in their environment, both intentional and accidental.**
- **Changes to the environment can be favorable, making some places more habitable.**
- **Changes can also be destructive, altering an area's ecosystem and straining local resources.**



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# Section 1 Review



**How do geographers use geographic information systems (GIS)?**

- a) They use it to map the bottoms of the oceans.
- b) They use it to collect, analyze, and display geographic information.
- c) They use it to provide accurate information about location.
- d) They use it to record images of the earth's surface.

**How is absolute location described?**

- a) It is described by its relation to other places.
- b) It is described as a group of places sharing a common characteristic.
- c) It is described by its physical and human characteristics.
- d) It is described by the grid formed by longitude and latitude lines.

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# Section 1 Review



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# Changes Within the Earth



- **How do scientists classify the earth's major physical characteristics?**
- **What physical processes affect the earth's crust?**
- **What theories help scientists understand the earth's past?**



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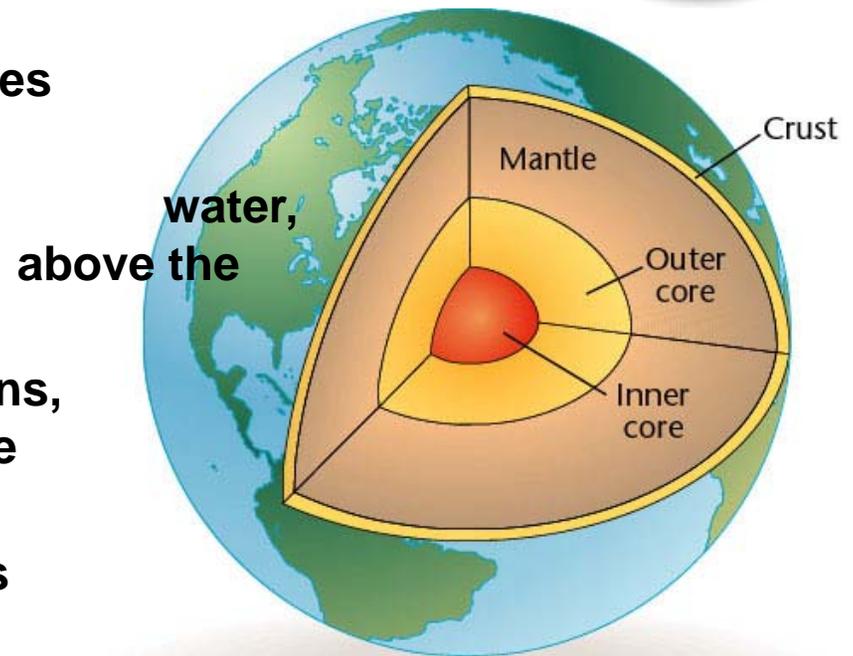
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# Physical Characteristics



- Geologists envision three layers to the earth: the **core**, or center, the **mantle**, or a thick layer of rock around the core, and the **crust**, the thin rocky layer on the surface.
- Landforms and other surface features make up the **lithosphere**.
- The **atmosphere** is the layer of air, and other substances above the surface.
- The water in lakes, rivers, and oceans, and water beneath the surface is the **hydrosphere**.
- The large landmasses in the oceans are the **continents**.
- Landforms are categorized by their differences in **relief**, or the differences in elevation from the highest to the lowest points.



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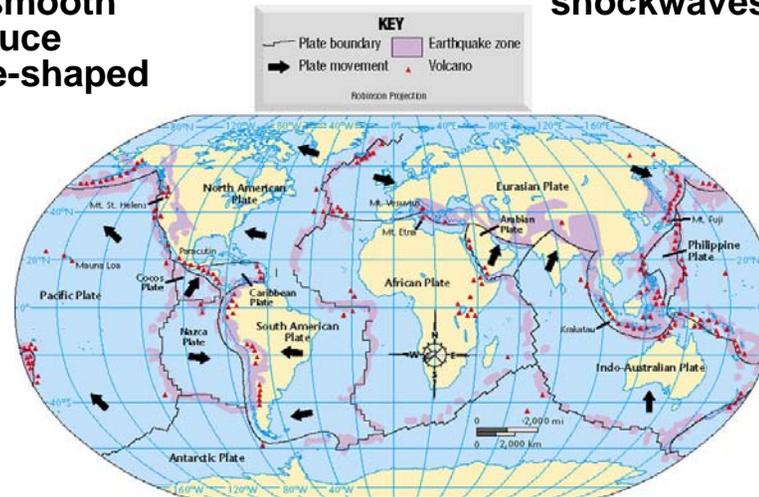
## Landforms are shaped first by forces that originate in the earth's interior.

### Volcanoes

- Volcanoes form when magma breaks through the earth's crust.
- When lava flows evenly, it forms a plateau-like shield volcano.
- An ash and cinder eruption can produce small cinder cone volcanoes.
- Alternating explosive eruptions and smooth lava flows produce distinctive cone-shaped volcanoes.

### Movements in the Crust

- Stresses between layers of rock can create folds and faults.
- The hardness of the rock and the strength of the movement determine whether a fold or fault is formed.
- Slow movements of rock layers along a fault produce almost unnoticeable changes.
- Large, sudden movements send out shockwaves, causing an earthquake.



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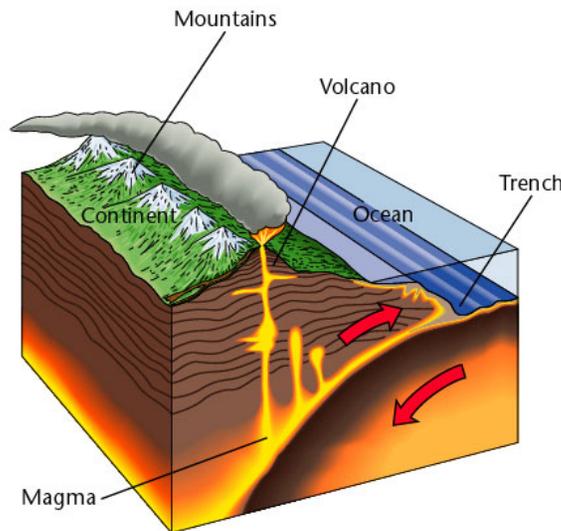
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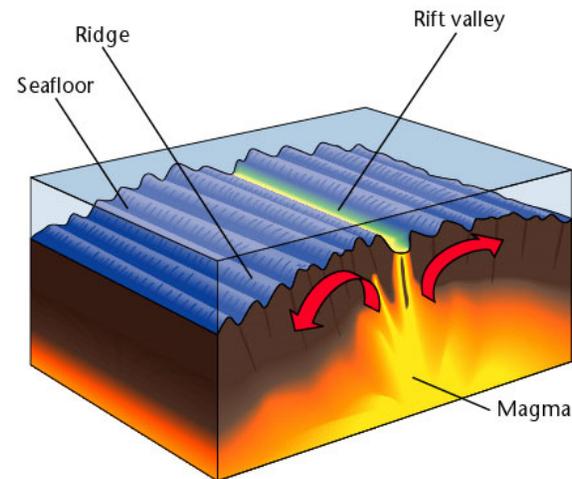
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# Understanding the Past



Subduction



Spreading

- According to the theory of **plate tectonics**, the lithosphere is broken up into a number of moving plates, on which continents and oceans ride.
- The theories of **continental drift** and seafloor spreading support the theory of plate tectonics, and it is thought that the force of convection drives the movement of tectonic plates.



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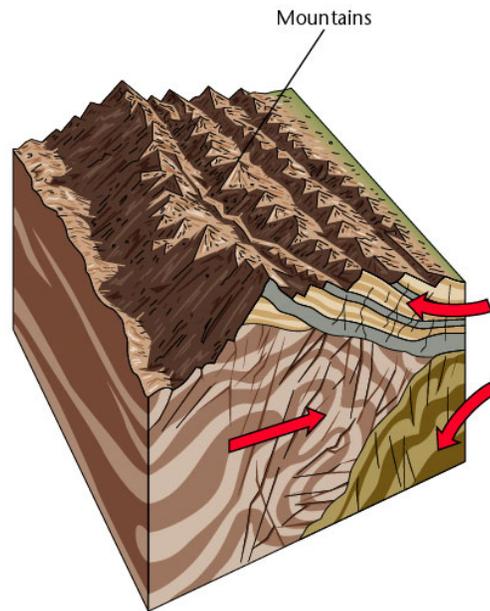
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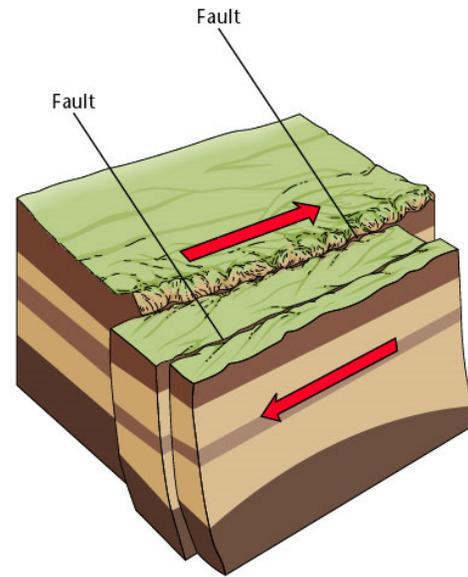
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# Understanding the Past



Converging



Faulting

- The movement of plates can create rift valleys, mountain ranges, volcanoes, faults, and earthquakes, depending on how the plates are moving.
- The **Ring of Fire** is a group of volcanoes and volcanic islands around the rim of the Pacific Ocean.



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# Section 2 Review



**What term is used to describe the water on and below the surface?**

- a) lithosphere
- b) atmosphere
- c) hydrosphere
- d) biosphere

**Which process is used to describe the movements of tectonic plates?**

- a) subduction
- b) convergence
- c) faulting
- d) convection

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# Section 2 Review



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# Changes on the Earth's Surface



- **What are the lasting effects of the two kinds of weathering — mechanical and chemical — on the physical landscape of a place?**
- **How do the three most common causes of erosion — water, wind, and glaciers — alter the physical landscape of a place?**



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# Weathering



**Weathering** is the breakdown of rock at or near the earth's surface into smaller and smaller pieces.

## *Mechanical Weathering*

**Mechanical weathering** occurs when the rock is physically weakened or broken.

The most common mechanical weathering occurs when water freezes in cracks in rock.

## *Chemical Weathering*

**Chemical weathering** alters the chemical makeup of rock.

Water and carbon dioxide are the most important factors.

**Acid rain** is a type of chemical weathering caused by air pollution and water.

## *Observing Weathering*

The wearing effects of weather can be seen in any old stone structure.

Weathering changes natural landforms over millions of years.



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# Erosion



- **Erosion** is the movement of weathered material such as gravel, soil, and sand.
- Moving water is the single greatest cause of erosion, especially when carrying **sediment**.
- Wind, the second major cause of erosion, can strip away exposed soil, but windblown deposits of **loess**, mineral-rich dust and silt, can also benefit farmers.
- **Glaciers**, huge, slow-moving sheets of ice, are also major agents of erosion, as they pick up and drag along dirt, rocks, and boulders.
- During the Ice Ages, glaciers covered up to a third of the earth's surface.
- In places where glaciers have melted and receded, they have left behind ridgelike piles of rocks and debris called **moraines**.



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# Section 3 Review



## Acid rain is

- a) a type of sediment.
- b) a type of mechanical weathering.
- c) wind-blown dust and silt.
- d) a type of chemical weathering.

## How can wind be a force of erosion?

- a) It can deposit silt on an alluvial plain or delta.
- b) It can quickly carve out valleys and canyons from solid rock.
- c) It can carry away dry soil and sand.
- d) It can act as a form of chemical weathering.

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# Section 3 Review



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