UNIT 4

Europe

WHY IT'S IMPORTANT—

In the 1990s, several nations of Europe formed the European Union, an alliance that works for the region's economic and political unity. Many European countries are replacing their national currencies with a common currency—the euro. As one of the world's leading economic powers, Europe has long had close political, cultural, and trading ties with the United States. Because of this important relationship, European ideas and practices have shaped your life and will continue to do so in the years ahead.

World Regions Video

To learn more about Europe and its impact on your world, view the World Regions video "Europe."

NATIONAL GEOGRAPHIC SOCIETY

NGS ONLINE

www.nationalgeographic.com/education

Gondolier in Venice, Italy

What Makes Europe a Region?

Europe is a small continent with a long, jagged coastline. With watery fingers, the sea reaches deep into the land, embracing peninsulas and carving out bays, gulfs, and channels. Warm Atlantic winds and currents bathe European shores, helping to give this northerly landmass an unexpectedly mild climate. They also bring abundant rain that nurtures lush, green landscapes.

Fertile plains extend across much of northern Europe. Farther south, the plains become rugged hills, then mountains. The Alps are the continent's highest mountain range. They stretch across south-central Europe, forming a barrier that shelters the sunny Mediterranean area from moist northern winds.

Great rivers wind their way through Europe's landscapes, linking inland areas with the sea. The Danube flows through or along more countries than any other river in the world. The Rhine, with its source high in the Swiss Alps, is the continent's most important waterway.

2

3

1

1 Guernsey cows tread a familiar track on one of the Channel Islands, between England and France. Warmed by ocean currents that originate in the tropical Atlantic, these islands have a mild, moist climate—perfect for cattle and crops.

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2 Rows of bright umbrellas shelter beachgoers at Positano, Italy. Europe's unusually long coastline borders many seas. Countries along the Mediterranean Sea enjoy what is called a Mediterranean climate, with mild winters and hot, dry summers.

3 Ships and barges follow the snaking curves of the Rhine River in Germany. For centuries, the Rhine has provided an important transportation route through western Europe. Some of Germany's largest cities—and many medieval castles—lie along the Rhine and its tributaries.

4 Icy peaks in the Swiss Alps reflect the colors of the setting sun. The Alpine mountain system forms a broad arc that reaches from Spain to the Balkan Peninsula. The range's highest peak, Mont Blanc, lies in France, near the border with Switzerland and Italy.

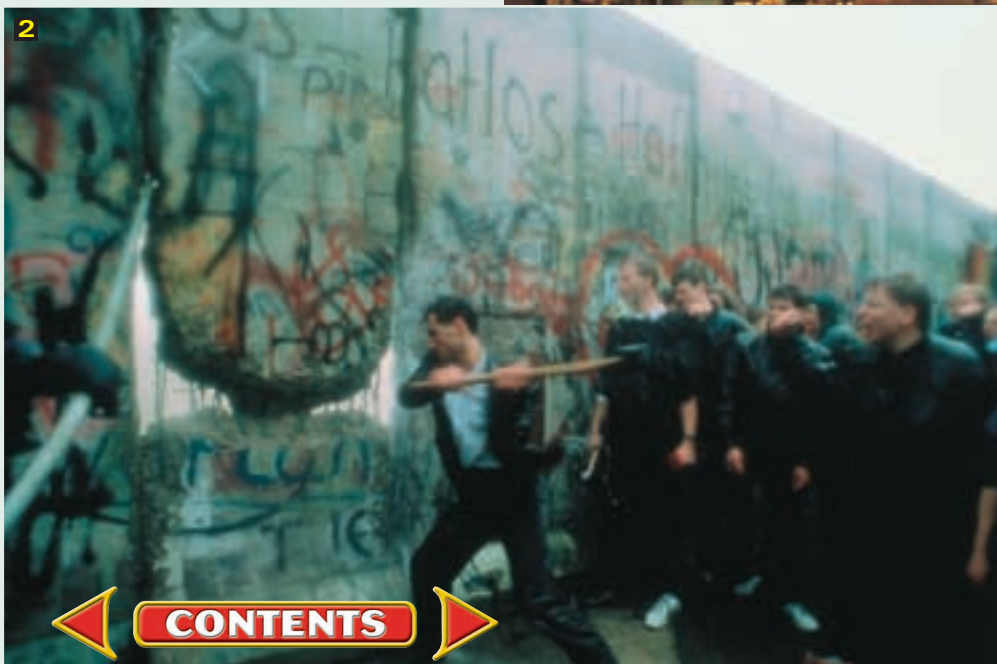
CONTENTS

Cultural Colossus

A mosaic of more than 40 countries, Europe enjoys a rich cultural heritage. Western traditions of art, architecture, science, and mathematics had their start in ancient Greece and Rome. In the centuries that followed, European culture spread far beyond the continent, aided by easy access to the sea. Modern European cities remain thriving centers for education and the arts.

Europe is home to people of many ethnic groups. Differences among those groups have led to frequent conflicts throughout European history. Toward the end of the twentieth century, political reforms greatly changed the face of Europe and brought new unity—as well as new challenges—to the region's inhabitants.

1 Crates of cargo stand on docks lining the harbor of Aberdeen, Scotland. The cargo awaits loading onto oceangoing ships. Europe's long coastline is dotted with busy ports. Access to the sea has helped spread European goods and culture worldwide.



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2 West Berliners batter the wall that once separated the city into eastern and western sectors—and represented Europe's division into Communist and non-Communist camps. In 1989 several Communist governments were toppled, and the Berlin Wall began to come down.

3 The extravagant Opéra Garnier, one of the largest theaters in the world, stands near the center of Paris. Sometimes compared to a gilded wedding cake, this ornate structure was built in the mid-1800s. Originally an opera house, it now features mostly ballet.

4 A young Basque boy dons his father's cap and will carry on the elder's ethnic traditions. Three million Basques inhabit a wedge-shaped homeland that straddles the border between France and Spain. Basques speak an ancient tongue that is unrelated to any other known language.

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UNIT 4

REGIONAL ATLAS

Europe

PHYSICAL

Elevation Profile

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NATIONAL GEOGRAPHIC SOCIETY

POLITICAL

MAP Study

1. Which European countries border the Black Sea?
2. Which European countries are land-locked, or have no coastline?

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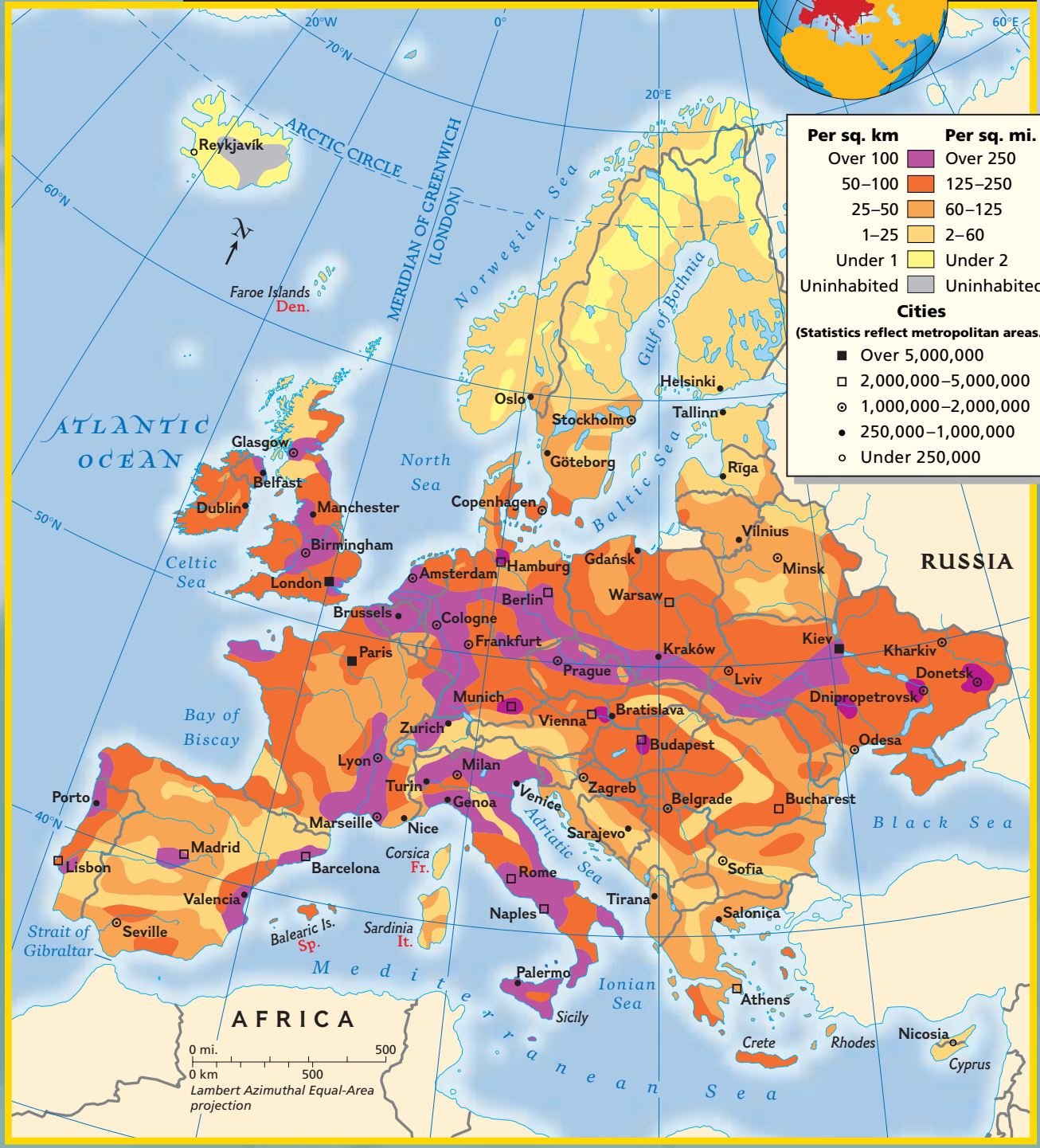
Europe

POPULATION DENSITY



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NATIONAL GEOGRAPHIC SOCIETY

ECONOMIC ACTIVITY

MAP Study

1. **Which European countries appear to have the highest population densities?**
2. **Describe the relationship between coal deposits and population density in Europe.**

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Europe

COUNTRY PROFILES

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
ALBANIA Tirana	Albanian	3,400,000 310 per sq.mi. 120 per sq.km	11,100 sq.mi. 28,748 sq.km	Asphalt	Machinery	Lek	Republic
ANDORRA Andorra la Vella	Catalan, French, Spanish	100,000 380 per sq.mi. 147 per sq.km	174 sq.mi. 451 sq.km	Electricity	Manufactured Goods	French Franc, Spanish Peseta	Parliamentary Democracy
AUSTRIA Vienna	German	8,100,000 251 per sq. mi. 97 per sq. km	32,378 sq. mi. 83,859 sq. km	Machinery	Petroleum	Schilling, Euro	Federal Republic
BELARUS Minsk	Belarussian, Russian	10,000,000 125 per sq.mi. 48 per sq.km	80,154 sq.mi. 207,598 sq.km	Machinery	Fuels	Belarussian Ruble	Republic
BELGIUM Brussels	Flemish, French	10,300,000 872 per sq.mi. 337 per sq.km	11,787 sq.mi. 30,528 sq.km	Iron and Steel	Fuels	Belgian Franc, Euro	Constitutional Monarchy
BOSNIA AND HERZEGOVINA Sarajevo	Serbo-Croatian	3,400,000 173 per sq.mi. 69 per sq.km	19,741 sq.mi. 51,129 sq.km	N/A	N/A	Convertible Mark	Republic
BULGARIA Sofia	Bulgarian	8,100,000 190 per sq.mi. 73 per sq.km	42,822 sq.mi. 110,909 sq.km	Machinery	Fuels	Lev	Republic
CROATIA Zagreb	Serbo-Croatian	4,700,000 197 per sq.mi. 76 per sq.km	21,830 sq.mi. 56,540 sq.km	Transport Equipment	Machinery	Kuna	Republic
CYPRUS Nicosia	Greek, Turkish	900,000 247 per sq.mi. 95 per sq.km	3,571 sq.mi. 9,249 sq.km	Citrus Fruits	Manufactured Goods	Cyprus Pound	Republic
CZECH REPUBLIC Prague	Czech, Slovak	10,300,000 337 per sq.mi. 130 per sq.km	30,448 sq.mi. 78,860 sq.km	Machinery	Crude Oil	Koruna	Republic
DENMARK Copenhagen	Danish	5,400,000 322 per sq.mi. 124 per sq.km	16,637 sq.mi. 43,090 sq.km	Machinery	Machinery	Krone	Constitutional Monarchy

* COUNTRIES AND FLAGS NOT DRAWN TO SCALE

CONTENTS

NATIONAL GEOGRAPHIC SOCIETY

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
ESTONIA	Estonian	1,400,000 78 per sq. mi. 30 per sq. km	17,413 sq. mi. 45,099 sq. km	Textiles	Machinery	Kroon	Republic
FINLAND	Finnish, Swedish	5,200,000 40 per sq. mi. 15 per sq. km	130,560 sq. mi. 338,150 sq. km	Paper	Foods	Markka, Euro	Republic
FRANCE	French	59,200,000 278 per sq. mi. 107 per sq. km	212,934 sq. mi. 551,499 sq. km	Machinery	Crude Oil	French Franc, Euro	Republic
GERMANY	German	82,200,000 597 per sq. mi. 231 per sq. km	137,830 sq. mi. 356,978 sq. km	Machinery	Machinery	Deutsche Mark, Euro	Federal Republic
GREECE	Greek	10,900,000 214 per sq. mi. 83 per sq. km	50,950 sq. mi. 131,960 sq. km	Foods	Machinery	Drachma	Republic
HUNGARY	Hungarian	10,000,000 278 per sq. mi. 107 per sq. km	35,919 sq. mi. 93,030 sq. km	Machinery	Crude Oil	Forint	Republic
ICELAND	Icelandic	300,000 7 per sq. mi. 3 per sq. km	39,768 sq. mi. 102,999 sq. km	Fish	Machinery	Icelandic Króna	Republic
IRELAND	English, Irish Gaelic	3,800,000 142 per sq. mi. 55 per sq. km	27,135 sq. mi. 70,280 sq. km	Chemicals	Foods	Irish Pound, Euro	Republic
ITALY	Italian	57,800,000 497 per sq. mi. 192 per sq. km	116,320 sq. mi. 301,269 sq. km	Metals	Machinery	Lira, Euro	Republic
LATVIA	Latvian, Russian	2,400,000 95 per sq. mi. 37 per sq. km	24,942 sq. mi. 64,599 sq. km	Wood	Fuels	Lat	Republic
LIECHTENSTEIN	German	30,000 534 per sq. mi. 206 per sq. km	62 sq. mi. 160 sq. km	Machinery	Machinery	Swiss Franc	Constitutional Monarchy

* COUNTRIES AND FLAGS NOT DRAWN TO SCALE

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CLICK HERE CONTENTS

Europe

COUNTRY PROFILES

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
LITHUANIA Vilnius	Lithuanian, Polish, Russian	3,700,000 147 per sq. mi. 57 per sq. km	25,174 sq. mi. 65,200 sq. km	Foods and Livestock	Minerals	Litas	Republic
LUXEMBOURG Luxembourg	Luxembourgian, German, French	400,000 446 per sq. mi. 172 per sq. km	999 sq. mi. 2,587 sq. km	Steel Products	Minerals	Luxembourg Franc, Euro	Constitutional Monarchy
MACEDONIA Skopje	Macedonian, Albanian	2,000,000 205 per sq. mi. 79 per sq. km	9,927 sq. mi. 25,711 sq. km	Manufactured Goods	Fuels	Denar	Republic
MALTA Valletta	Maltese, English	400,000 3,157 per sq. mi. 1,219 per sq. km	124 sq. mi. 321 sq. km	Machinery	Foods	Maltese Lira	Republic
MOLDOVA Chişinău	Moldovan, Russian	4,300,000 328 per sq. mi. 127 per sq. km	13,012 sq. mi. 33,701 sq. km	Foods	Petroleum	Moldovan Leu	Republic
MONACO Monaco	French	30,000 45,333 per sq. mi. 17,503 per sq. km	1 sq. mi. 2.6 sq. km	N/A	N/A	French Franc	Constitutional Monarchy
NETHERLANDS Amsterdam	Dutch	16,000,000 1,018 per sq. mi. 393 per sq. km	15,768 sq. mi. 40,839 sq. km	Manufactured Goods	Raw Materials	Guilder, Euro	Constitutional Monarchy
NORWAY Oslo	Norwegian	4,500,000 36 per sq. mi. 14 per sq. km	125,050 sq. mi. 323,880 sq. km	Petroleum	Machinery	Krone	Constitutional Monarchy
POLAND Warsaw	Polish	38,600,000 310 per sq. mi. 120 per sq. km	124,807 sq. mi. 323,250 sq. km	Manufactured Goods	Machinery	Zloty	Republic
PORTUGAL Lisbon	Portuguese	10,000,000 282 per sq. mi. 109 per sq. km	35,514 sq. mi. 91,981 sq. km	Clothing	Machinery	Escudo, Euro	Republic

* COUNTRIES AND FLAGS NOT DRAWN TO SCALE

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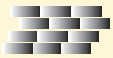
NATIONAL GEOGRAPHIC SOCIETY

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
ROMANIA	Romanian, Hungarian	22,400,000 243 per sq.mi. 94 per sq.km	92,042 sq.mi. 238,389 sq.km	Textiles	Fuels	Leu	Republic
SAN MARINO	Italian	30,000 1,166 per sq.mi. 450 per sq.km	23 sq. mi. 60 sq. km	 Building Stone	Manufactured Goods	Italian Lira	Republic
SLOVAKIA	Slovak, Hungarian	5,400,000 286 per sq.mi. 110 per sq.km	18,923 sq.mi. 49,011 sq.km	Transport Equipment	Machinery	Koruna	Republic
SLOVENIA	Slovene, Serbo-Croatian	2,000,000 256 per sq.mi. 99 per sq.km	7,819 sq.mi. 20,251 sq.km	Transport Equipment	Machinery	Slovenian Tolar	Republic
SPAIN	Spanish, Catalan, Galician, Basque	39,800,000 204 per sq.mi. 79 per sq.km	195,363 sq.mi. 505,990 sq.km	Cars and Trucks	Machinery	Peseta, Euro	Constitutional Monarchy
SWEDEN	Swedish	8,900,000 51 per sq.mi. 20 per sq.km	173,730 sq.mi. 449,961 sq.km	Paper Products	Crude Oil	Krona	Constitutional Monarchy
SWITZERLAND	German, French, Italian	7,200,000 453 per sq.mi. 175 per sq.km	15,942 sq.mi. 41,290 sq.km	Precision Instruments	Machinery	Swiss Franc	Federal Republic
UKRAINE	Ukrainian, Russian	49,100,000 211 per sq.mi. 81 per sq.km	233,089 sq.mi. 603,701 sq.km	Metals	Machinery	Hryvnya	Republic
UNITED KINGDOM	English, Welsh, Scottish Gaelic	60,000,000 635 per sq.mi. 245 per sq.km	94,548 sq.mi. 244,879 sq.km	Manufactured Goods	Foods	Pound Sterling	Constitutional Monarchy
VATICAN CITY	Italian, Latin	1,000	0.2 sq.mi. 0.4 sq.km	N/A	N/A	Lira	Sovereign State Under the Pope
YUGOSLAVIA	Serbo-Croatian, Albanian	10,700,000 270 per sq.mi. 104 per sq.km	39,448 sq.mi. 102,170 sq.km	Manufactured Goods	Machinery	Yugoslav New Dinar	Federal Republic

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GLOBAL CONNECTION

EUROPE AND THE UNITED STATES

ARCHITECTURE

Wander through any city in the United States, and you'll see European influences—not just in foods and fashions, but in brick, wood, and stone. From churches to country homes, many American buildings reflect our connection to European cultures.

The Capitol is a national landmark in the heart of Washington, D.C. Its great dome, or large arched roof, dominates the structure. Roman architects favored arching shapes, and domes are their legacy.

▲ Queen Anne house in Washington State

In 1792 President George Washington asked architects to submit designs for a "federal Capitol" to house the U.S. Congress. William Thornton, an amateur draftsman, won the competition with a neo-Roman design. Thornton modeled the Capitol dome after the one that crowns the Pantheon, an ancient Roman temple built in the A.D. 100s.

The Gothic style of architecture originated in France in the 1100s and became the style of choice for cathedrals. Gothic cathedrals are huge and soaring, with

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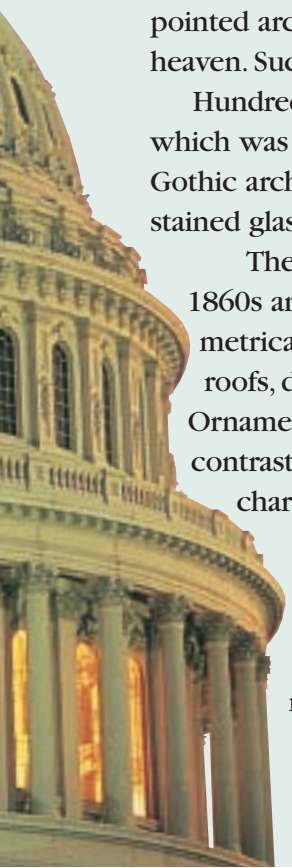
▲ Interior of Pantheon, in Rome

pointed arches, large stained glass windows, and towers and spires that seem to point toward heaven. Such cathedrals were built across western Europe during the Middle Ages.

Hundreds of years later, American architect James Renwick designed St. Patrick's Cathedral, which was built in New York City starting in 1858. It is considered one of the best examples of Gothic architecture in the United States. True to the Gothic style, the cathedral has pointed arches, stained glass windows, and a pair of enormous towers.

The Queen Anne style developed in England in the 1860s and 1870s. Queen Anne buildings tend to be asymmetrical and quirky, with prominent chimneys, steep roofs, dormer windows, and corner turrets jutting out. Ornamental details such as fancy brickwork and contrasting trim help give Queen Anne buildings their characteristic look.

Queen Anne houses became popular throughout the United States in the late 1800s. You probably wouldn't have to travel far to see a Queen Anne house. There might even be one in your neighborhood.



◀ Dome of U.S. Capitol

▲ St. Patrick's Cathedral

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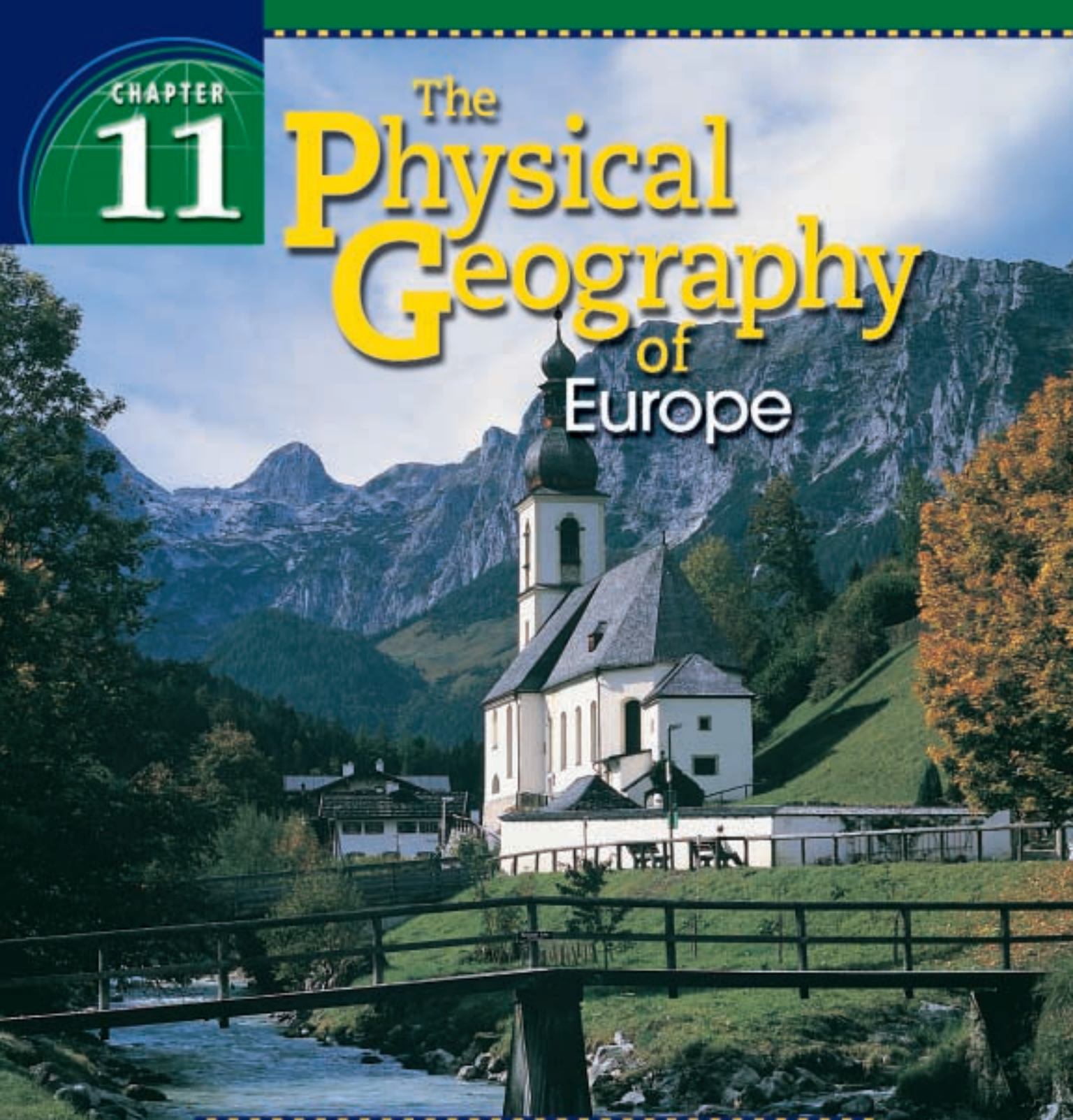
CHAPTER 11

The Physical Geography of Europe



GeoJournal

As you read this chapter, use your journal to describe Europe's physical geography. Include vivid descriptions of its mountains, plains, and water systems.

GEOGRAPHY Online

Chapter Overview Visit the **Glencoe World Geography** Web site at tx.geography.glencoe.com and click on Chapter Overviews—Chapter 11 to preview information about the physical geography of the region.

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SECTION 1

The Land

Guide to Reading

Consider What You Know

References to Europe are often in the news. What physical features come to mind when you think of Europe? What do you know about them?

Read to Find Out

- Why is Europe sometimes called a "peninsula of peninsulas"?
- What are some of the numerous islands surrounding the continent of Europe?
- Why are rivers vital to Europe's economy?
- What are some of Europe's most important natural resources?

Terms to Know

- dike
- polder
- glaciation
- fjord
- loess

Places to Locate

- North Sea
- Iberian Peninsula
- Balkan Peninsula
- Alps
- Rhine River
- Po River
- North European Plain

NATIONAL GEOGRAPHIC

A Geographic View

Fire in Iceland

. . . [O]ne of the largest volcanic eruptions to hit Iceland this century rumbled to life beneath the country's biggest ice cap. For two weeks ash and steam billowed skyward as elemental forces clashed in thermal battle. . . . [A]sh-laden runoff rushed from the eruption site, carving an ice canyon 500 feet deep and more than two miles long.

—*Glenn Oeland, "Iceland's Trial by Fire,"* National Geographic, *May 1997*

Ice canyon, Iceland

Though few natural occurrences are as dramatic as Iceland's volcanic eruptions, physical forces continue to shape the landscape of Europe. In this section you will learn about the variety of Europe's landforms, water systems, and natural resources.

Seas, Peninsulas, and Islands

Unlike the world's other continents, Europe and Asia share a common landmass called Eurasia. Yet Europe, the second smallest of the continents after Australia, is a distinct region. Jutting westward from Asia, Europe has an unusually long, irregular coastline that touches a number of bodies of water, including the Atlantic Ocean and the Baltic, North, Mediterranean, and Black Seas.

History

Struggle With the Sea

Most of Europe lies within 300 miles (483 km) of a seacoast. This closeness to the sea has shaped the lifestyles of its peoples. In the

◀ *Church in the Alps, Bavaria, Germany*

Netherlands, water can be friend or foe. About 25 percent of the Netherlands lies below sea level. Coastal dunes have not always been helpful in keeping out North Sea waters, so the Dutch since the Middle Ages have built **dikes**, large banks of earth and stone, to hold back water. With the dikes for protection, they have reclaimed new land from the sea. These reclaimed lands, called **polders**, once were drained and kept dry by the use of windmills. Today, other power sources run pumps to remove seawater. Polders provide hundreds of thousands of acres for farming and settlement. Still, from time to time, stormy seas breach the dikes, creating devastating floods.

The Northern Peninsulas

Europe is a large peninsula made up of smaller peninsulas. In the far north of Europe lies the scenic Scandinavian Peninsula. During the last Ice Age, in a process known as **glaciation**, glaciers formed and spread over the peninsula. They carved out long, narrow, steep-sided inlets called **fjords** (fee•AWRDZ) on the Atlantic coastline. The map on page 273 shows Norway's jagged coastal strip, where many fjords provide fine harbors.

Much of Norway and northern Sweden is mountainous, but in southern Sweden, lowlands slope gently to the Baltic Sea. In both countries, and in Finland, Ice Age glaciers left behind thousands of sparkling lakes.

The peninsula of Jutland forms the mainland part of Denmark and extends into the **North Sea** toward Norway and Sweden. Glaciers deposited sand and gravel on Jutland's flat western side and carved fjords into the slightly higher coastline on the east. Flat plains or low hills make up most of Jutland's interior.

The Southern Peninsulas

The **Iberian Peninsula** extends off the southwestern edge of Europe. Home to Spain and Portugal, the peninsula separates the Atlantic Ocean from the Mediterranean Sea. Only 20 miles (32 km) of water at the Strait of Gibraltar, however, separates the peninsula's southern tip from Africa.

Most of the Iberian Peninsula is a semiarid plateau, rising above slender coastal plains. To the north, the Pyrenees (PIHR•uh•NEEZ) Mountains cut off the peninsula from the rest of Europe. Because of this rugged barrier, the people of the Iberian Peninsula until modern times were relatively isolated from the rest of Europe and were oriented toward the sea.

The Apennine (A•puh•NYN) Peninsula, where Italy is located, extends like a giant boot into the Mediterranean Sea. Its long coastline varies from high, rocky cliffs to long, sandy beaches. Forming the peninsula's spine are the Apennines, a geologically young mountain chain that includes an active

NATIONAL GEOGRAPHIC **World Explorer**

Geography Skills for Life

Dutch Windmills By the 1800s the Dutch had built about 9,000 windmills to pump seawater from low-lying areas.

Place Why do you think the Dutch shifted to other power sources to drain flooded areas?

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NATIONAL GEOGRAPHIC

MAP STUDY

Europe: Physical-Political

Geography Skills for Life

1. **Interpreting Maps** What body of water separates the United Kingdom from Denmark?
2. **Applying Geography Skills** Which country has areas of land below sea level? How might people live in these areas?

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volcano—Mount Vesuvius, near the city of Naples. Plains cover only about one-third of the Apennine Peninsula, the largest being the fertile plain of Lombardy along the Po River in the north.

In southeastern Europe lies the **Balkan Peninsula**. Bounded by the Adriatic and Ionian Seas on the west and the Aegean and Black Seas on the east, the Balkan Peninsula holds a tangle of mountain ranges and valleys that stretch southward from the Danube River. Because of the region's craggy landscape, overland travel is difficult. Historically people moved along rivers and seas in this mountainous region.

Europe's Islands

In addition to peninsulas, Europe includes many islands. Iceland is located south of the Arctic Circle in the North Atlantic Ocean. Lying astride the Mid-Atlantic Ridge, Iceland has volcanoes, hot springs, and geysers. Because of Iceland's far northern location, glaciers are found next to the volcanoes and hot springs. Most of the homes and industries in the area of the capital, Reykjavík (RAY•kyah•VEEK), pipe in water from hot springs for heat. Grassy lowlands stretch along Iceland's coast, but the land rises sharply to form a large inland plateau.

The British Isles lie northwest of the European mainland. They consist of two large islands, Great Britain and Ireland, and thousands of smaller islands. Mountain ranges, plateaus, and deep valleys make up most of northern and western Great Britain, and low hills and gently rolling plains dominate in the south. Ireland, often called the Emerald Isle, is a lush green land of cool temperatures and abundant rainfall. In many places the rugged coastline of the British Isles features rocky cliffs that drop to deep bays. One visitor to the British coast writes:

> *"We hiked past . . . plenty of farms, and mile after mile of rocky cliffs, their long faces carved raw and craggy by the ocean's dull knife. All day we stayed close to Cornwall's serrated edge, weaving in and out like a conga line."*
>
> Alan Mairson, "Saving Britain's Shore," *National Geographic*, October 1995

Islands also lie south of the European mainland, in the Mediterranean Sea. Rugged mountains form the larger islands of Sicily, Sardinia, Corsica, Crete, and Cyprus. Volcanic and earthquake activity are characteristic of the region. Mount Etna, Europe's highest active volcano, rises over Sicily. Smaller island groups in the Mediterranean area are Spain's Balearic Islands, Malta's 5 islands, and Greece's nearly 2,000 islands in the Aegean Sea. The scenic, rugged landscape and the sunny climate of Europe's Mediterranean islands draw tourists from around the world.

Mountains and Plains

Europe's mainland, in essence, consists of plains interrupted by mountains running through its interior and along its northern and southern edges. The map on page 273 shows the names and locations of some of these landforms.

Mountain Regions

Europe's northwestern mountains have some of the earth's most ancient rock formations. Rounded by eons of erosion and glaciation, these ranges feature relatively low peaks, such as Ben Nevis, the highest mountain in the British Isles at 4,406 feet (1,343 m). Extending from the Iberian Peninsula to eastern Europe, the central uplands consist of low, rounded mountains and high plateaus with scattered forests. This region includes the Meseta, Spain's central plateau, and the Massif Central, France's central highlands.

By contrast, southern Europe's geologically younger mountains are high and jagged. As the earth's crust lifted and folded, the Pyrenees Mountains were thrust upward to more than 11,000 feet (3,354 m). Created by glaciation and folding, the mountain system known as the **Alps** forms a crescent from southern France to the Balkan Peninsula. The highest peak in the Alps, Mont Blanc, stands at

GEOGRAPHY Online

Student Web Activity Visit the **Glencoe World Geography** Web site at tx.geography.glencoe.com and click on Student Web Activities—Chapter 11 for an activity about the physical geography of the Netherlands.

CLICK HERE

Geography Skills for Life **Main-Danube Canal**

Rolling through rural Bavaria, the Main-Danube Canal offers a large lake for swimming and artificial ponds for wildlife along landscaped banks.

Region Describe the two different types of rivers that flow in Europe.

15,771 feet (4,807 m) on the border of France and Italy. Some of Europe's major rivers, such as the **Rhine** and the **Po**, originate in the Alps. The Alps also form a barrier that separates the warm, dry climate of the Mediterranean region from the cooler climates of the north. Another towering mountain chain, the Carpathians, runs through eastern Europe from Slovakia to Romania.

Plains Regions

Europe's broad plains curve around the highlands. Scoured by Ice Age glaciers, the **North European Plain** stretches from southeastern England and western France eastward to Poland, Ukraine, and Russia. The plain's fertile soil and wealth of rivers originally drew farmers to the area, and the plain is still a major agricultural region. The southern edge is especially fertile because deposits of **loess**, a fine, rich, wind-borne soil, cover it.

Deposits of coal, iron ore, and other minerals found on the North European Plain led to western Europe's industrial development during the 1800s. Today many of Europe's largest cities, such as Paris and Berlin, are located on the plain.

Another fertile plains area, the Great Hungarian Plain, extends from Hungary to Croatia, Serbia, and Romania. Farmers cultivate grains, fruit, and vegetables and raise livestock in the lowlands along the Danube River.

Water Systems

Many of Europe's water systems flow from inland mountain and highlands areas to the coasts. By connecting navigable rivers with canals, Europeans have greatly enhanced their natural waterways as transportation links. Europe's rivers and canals also provide water to irrigate farmland and to produce electricity.

Europe's rivers have differing characteristics. The rivers in Scandinavia are short and do not provide easy connections between cities. In the Iberian Peninsula, main rivers generally are too narrow and shallow for large ships. England's Thames (TEHMZ) River, on the other hand, allows ocean-going ships to reach the port of London.

In the heartland of Europe, however, relatively long rivers provide links between inland areas as well as to the sea. The Rhine is the most important river in western Europe. It flows from the Swiss

Alps through France and Germany and into the Netherlands, connecting many industrial cities to the busy port of Rotterdam on the North Sea.

The Danube, which flows from Germany's Black Forest to the Black Sea, is eastern Europe's major waterway. Each year ships and barges carry millions of tons of cargo on the Danube. In 1992 the Main (MYN) River, a tributary of the Rhine, became connected to the Danube when the Main-Danube Canal was completed, thereby linking the North Sea with the Black Sea.

Other major European rivers include the Seine, Rhône, and Loire in France; the Elbe and Weser in Germany; the Vistula in Poland; the Po in Italy; and the Dnieper in Ukraine.

▲ *An Irish farmer digging peat*

Natural Resources

Europe has a long history of utilizing its natural resources, including energy sources, agricultural areas, water, and especially minerals. Europe's abundant supply of coal and iron ore fueled the development of modern industry.

Major reserves of coal lie in the United Kingdom, Germany, Ukraine, and Poland as well as other European countries. Although coal is still an important fuel source, many coalfields in western Europe are depleted or are too expensive to mine. Large deposits of iron ore lie in northern Sweden, northeastern France, and southeastern Ukraine. Europe's other mineral resources include bauxite, zinc, and manganese.

In places where other fuels are scarce, Europeans burn peat, a kind of vegetable matter found in swamps and usually composed of mosses. Peat is dug up, chopped into blocks, and dried so it can be burned. Europeans, however, largely rely on coal, oil, gas, and nuclear and hydroelectric power. Vast oil and natural gas deposits under the North Sea contribute greatly to Europe's energy needs. France, which lacks large oil or gas reserves, has invested heavily in nuclear power.

TAKS Practice

SECTION 1 ASSESSMENT

Checking for Understanding

1. **Define** dike, polder, glaciation, fjord, loess.
2. **Main Ideas** Re-create the table below on a sheet of paper, and fill in examples of the physical features and natural resources of Germany, Norway, Ukraine, Italy, and France.

Country	Physical Features	Natural Resources

Critical Thinking

3. **Comparing and Contrasting** How does the landscape of the Jutland peninsula differ from that of the Balkan Peninsula?
4. **Making Generalizations** Europe's Mediterranean islands are popular vacation destinations. What physical features make these islands attractive to tourists?
5. **Drawing Conclusions** How does Europe's network of rivers and canals contribute to industrial development in the region?

Analyzing Maps

6. **Location** Study the physical-political map of Europe on page 273. What part of Europe has the lowest elevation? The highest?

Applying Geography

7. **Conflict Over Resources** Use the economic activity map on page 263 to identify three areas in which natural resources cross international boundaries. Describe the areas in which conflict could arise because of the management of these resources.

Climate and Vegetation

Guide to Reading

Consider What You Know

Much of Europe borders oceans and seas. What kinds of climates would you expect in Europe?

Read to Find Out

- What are the climate regions in Europe?
- What physical features influence Europe's climates?
- Why are most of Europe's original forests gone?

Terms to Know

- timberline
- foehn
- avalanche
- mistral
- sirocco
- chaparral
- permafrost

Places to Locate

- Gulf Stream
- North Atlantic Drift

NATIONAL GEOGRAPHIC

A Geographic View

Power of the Wind

I stood on the shore of Als Sund, a saltwater sound . . . with [Flemming] Rieck, a maritime archaeologist at the National Museum of Denmark. . . . After a week of rain the spring sun radiated intense light but little heat. Chins tucked in our windbreakers, Rieck and I stared at sailboats bobbing on the whitecaps.

"At some point . . . ," he said, "Scandinavians began using sails." He spread his arms into the stiff breeze. "No one can say why it took so long for them to use the power of all this wind."

Sailboats on Als Sund

—*Michael Klesius, "Mystery Ships From a Danish Bog,"* National Geographic, *May 2000*

Wind is only one of the factors affecting Europe's climates. Latitude, mountain barriers, ocean currents, and the distance from large bodies of water all help determine Europe's varied climates. In this section you will read about Europe's climate regions—from the sunny, dry Mediterranean climate to the frozen subarctic zone. You will also study the patterns of vegetation growth found in each region of Europe.

Water and Land

The climates and vegetation of Europe vary from the cold, barren tundra and subarctic stretches of Iceland, Norway, Sweden, and Finland to the warm, shrub-covered Mediterranean coasts of Italy, Spain, and Greece. What factors account for such variety in a relatively small area?

NATIONAL GEOGRAPHIC

MAP STUDY

Europe: Climate Regions

Geography Skills for Life

1. **Interpreting Maps** What climate regions are found in Scandinavia?
2. **Applying Geography Skills** Why does northwestern Europe have a milder climate than eastern Europe? Explain.

Find NGS online map resources @ www.nationalgeographic.com/maps

Europe's northern latitude and its relationship to the sea influence its climates and vegetation. Western and southern parts of Europe, which lie near or along large bodies of water, benefit from warm maritime winds. These areas have a generally mild climate compared with other places in the world at the same latitude. Frankfurt, Germany, as well as Paris, France, and Boston, Massachusetts, are about the same distance from the Arctic Circle, yet January temperatures in Paris are milder than those in Boston. By contrast, parts of eastern and northern Europe have a colder climate than most of western and southern Europe because of their distance from the warming effects of the Atlantic Ocean.

As in other areas of the world, location influences vegetation patterns in Europe. Natural vegetation in the region varies from forests and grasslands to tundra plants and small shrubs. Compare the natural vegetation map on page 279 with the climate map above. Notice that the types of vegetation found in Europe are closely linked to the climate regions.

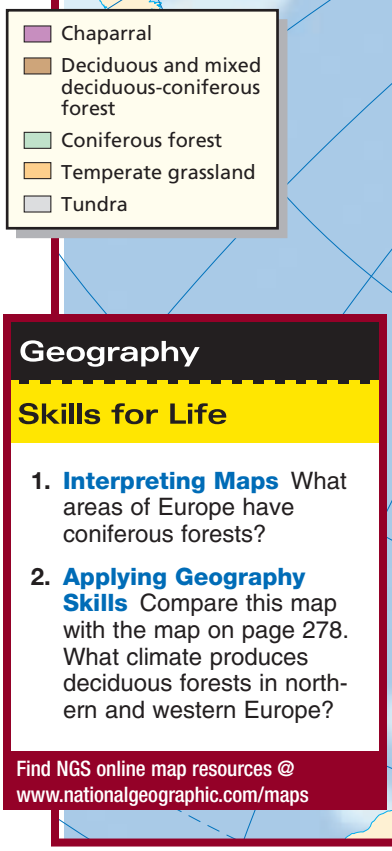
Western Europe

As the climate map on this page shows, much of western Europe has a marine west coast climate—mild winters, cool summers, and abundant rainfall. The Atlantic Ocean's **Gulf Stream** and its northern extension, the **North Atlantic Drift**, bring warm waters to this part of Europe from the Gulf of Mexico and regions near the Equator (see map on page 61). Prevailing westerly winds blowing over these currents carry warm, moist air across the surface of the European landmass.

NATIONAL GEOGRAPHIC

MAP STUDY

Europe: Natural Vegetation



Geography Skills for Life

1. **Interpreting Maps** What areas of Europe have coniferous forests?
2. **Applying Geography Skills** Compare this map with the map on page 278. What climate produces deciduous forests in northern and western Europe?

Find NGS online map resources @ www.nationalgeographic.com/maps

Trees and Highlands

Western Europe's natural vegetation includes varieties of deciduous (dih•SIH•juh•wuhs) and coniferous (koh•NIH•fuh•ruhs) trees. Deciduous trees, those that lose their leaves, such as ash, maple, and oak, thrive in the area's marine west coast climate. Coniferous trees, cone-bearing fir, pine, and spruce, are found in cooler Alpine mountain areas up to the **timberline**, the elevation above which trees cannot grow.

The Alps have a highlands climate with generally colder temperatures and more precipitation than nearby lowland areas. Sudden changes can occur, however, when dry winds called **foehns** (FUHNZ) blow down from the mountains into valleys and plains. Foehns can trigger **avalanches**, destructive masses of ice, snow, and rock sliding down mountainsides. Avalanches threaten skiers and hikers, and often carry away everything in their paths. They represent a serious natural hazard in the Alps.

History

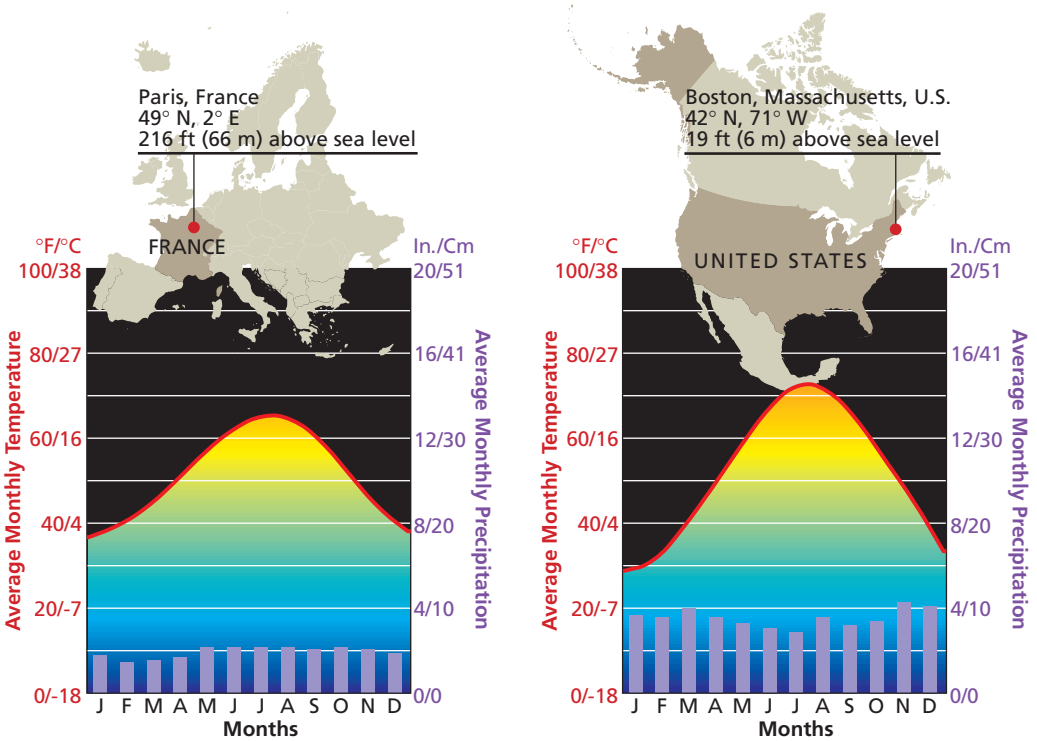
Ireland's Forests

Much of Europe was orginally covered by forest, but over the centuries human settlement and clearing of the land have transformed the vegetation. For example, prior to the 1600s, much of the midlands region of Ireland was covered with forests of broadleaved trees. However, pressure from agriculture and the large-scale harvest of native lumber for firewood depleted the country's forests. By 1922, when Ireland gained independence, only 1 percent of the

NATIONAL GEOGRAPHIC

GRAPH STUDY

Comparing Climate Regions: France and the United States



Source: National Climatic Data Center and Carbon Dioxide Information Analysis Center

Geography Skills for Life

1. **Interpreting Graphs** What is the average March temperature and precipitation in each city?
2. **Applying Geography Skills** Why does Paris have a cooler summer than Boston? (Refer to the map of world climate regions on page 66.)

country was woodland. Searching for old-growth forests can be challenging, as one traveler notes:

> *"'Of course Tomies Wood is all second growth'. . . . The real thing, Padraig told me, was far more remote, far from the trails, in the heights of MacGillycuddy's Reeks, where even now few people ventured."*
>
> Rebecca Solnit, "The Lost Woods of Killarney," *Sierra*, March/April 1997

State-sponsored reforestation efforts since World War II have increased Ireland's woodland areas.

Southern Europe

Most of southern Europe has a Mediterranean climate—warm, dry summers and mild, rainy winters. Several other climates, however, are found in small areas of the region. For example, a humid subtropical climate stretches from northern Italy to the central part of the Balkan Peninsula. In addition, parts of Spain's Meseta have a drier steppe climate.

The Alps block moist Atlantic winds, so less precipitation falls in southern Europe than in northwestern Europe. Local winds in the region sometimes cause changes in the normal weather pattern. The **mistral**, a strong north wind from the Alps, sometimes sends gusts of bitterly cold air into southern France. By contrast, **siroccos** (suh•RAH•kohs),

high, dry winds from North Africa, may bring high temperatures to the region. The hot, dry summers in much of southern Europe support the growth of **chaparral**, or shrubs and small trees, such as the cork oak tree and the olive tree.

Eastern and Northern Europe

Eastern and certain northern areas of Europe have a generally humid continental climate—cold, snowy winters and hot summers. Warm Atlantic currents have less influence on climate in these areas farther from the Atlantic Ocean. As a result, summer and winter temperatures vary more widely in eastern and northern Europe than in the rest of Europe.

In eastern Europe the vegetation is generally a mix of deciduous and coniferous forests. Coniferous trees, which are able to survive long, cold winters, are found in parts of Scandinavia and the region around the Baltic Sea. Grasslands cover parts of eastern Europe, especially in Hungary, Yugoslavia, and Romania.

Europe's far north—for example, Iceland, northern Scandinavia, and Finland—has subarctic and tundra climates of bitterly cold winters and short, cool summers. Tundra and subarctic regions have **permafrost**, soil that is permanently frozen below the surface. Tundra areas support little vegetation, with the exception of mosses, small shrubs, and wildflowers that bloom during the brief summer. The subarctic supports a vast coniferous forest that broadens in the eastern part where Europe and Russia share a border.

NATIONAL GEOGRAPHIC **World Explorer**

Geography Skills for Life

Land of Lakes Inari, in the far north of Finland, is one of some 60,000 lakes that dot the Finnish countryside.

Region What climates dominate Europe's far north?

TAKS Practice

SECTION 2 ASSESSMENT

Checking for Understanding

1. **Define** timberline, foehn, avalanche, mistral, sirocco, chaparral, permafrost.
2. **Main Ideas** Create an outline like the one below, showing the climates and vegetation found in three European countries.

Climate and Vegetation
I. Iceland
A. Climates: subarctic, tundra, and permafrost
B. Vegetation: conifers, lichens, moss

Critical Thinking

3. **Predicting Consequences** Prevailing westerly winds bring warm air from the North Atlantic Drift to the European continent. What do you think happens when the winds temporarily change course?
4. **Analyzing Information** What geographic factors contribute to vegetation differences between highlands and tundra climate regions?
5. **Identifying Cause and Effect** How has human interaction with the environment caused changes in Europe's vegetation patterns?

Analyzing Maps

6. **Location** Study the map of Europe's climate regions on page 278. Where are highlands climate regions found? What are their physical features?

Applying Geography

7. **Physical Processes** Describe the physical processes that affect Europe's climate and vegetation. Provide specific examples related to the variety of climates and vegetation found in the region.

STUDY & WRITING SkillBuilder

TAKS Practice

Finding and Summarizing the Main Idea

Finding and summarizing the main idea in an article or book will help you organize information. It will also help you identify the most important concepts to remember.

. . . Patterdale lies within the 885 square miles of the Lake District National Park. . . . It is the largest of ten national parks in England and Wales (Scotland has none), but, as with the others, the designation is really a misnomer [incorrect name] since the land is neither owned by the nation nor is it in any conventional sense a park. It is, rather, a lived-in landscape, full of towns and farms, with a resident population of 40,000. All but a small fraction of the land is in private hands.

Unlike U.S. national parks, which often aim to preserve wilderness, British parks inevitably include residents. These parks were created so there could be a way to exert some control over the speed and nature of change, not to prevent it altogether. Unfortunately, the various authorities have little power, relying primarily on persuasion to resolve myriad [numerous] demands.

—Bill Bryson, "England's Lake District," ***National Geographic****, August 1994*

Learning the Skill

To identify the main idea, you may need to "read between the lines" and interpret the facts and evidence that are presented. Review the important details, and decide which ones are central to the message. By looking closely at important details, you can infer an author's main meaning.

When looking for a main idea, follow these steps:

- **Skim the material to identify its general subject.** Look at any headings and subheadings.
- **Read the information to pinpoint the ideas that the details support.** Why is the author presenting these facts and this evidence?
- **Identify the main idea.** Ask yourself: How can I state the main idea in my own words?

Practicing the Skill

Read the passage above. Then answer the following questions.

1. What is the general subject of the passage?
2. What important facts and details does the passage include?
3. What is the main idea of the passage? State the main idea in your own words.

Applying the Skill

Bring to class a news article about an issue facing Europe. Summarize the main idea of the article, and explain why it is important.

Go To The **Glencoe Skillbuilder Interactive Workbook, Level 2** provides instruction and practice in key social studies skills.

CHAPTER 11

SUMMARY & STUDY GUIDE

SECTION 1 The Land (pp. 271–276)

Terms to Know

- dike
- polder
- glaciation
- fjord
- loess

Key Points

- Europe is a huge peninsula extending westward from the Eurasian landmass.
- Europe has a long coastline with many peninsulas and islands.
- Europe has a large plains region in its northern areas; mountains are found along the continent's eastern and southern boundaries.
- Rivers provide important transportation in Europe, linking the interior of the continent with coastal ports.
- Europe has important deposits of minerals, oil, and natural gas.

Organizing Your Notes

Use a table like the one below to help you organize the notes you took as you read the chapter.

Country	Mountains	Rivers and Lakes	Other Features

SECTION 2 Climate and Vegetation (pp. 277–281)

Terms to Know

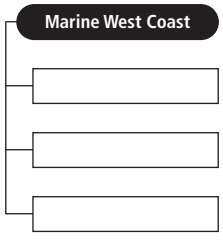
- timberline
- foehn
- avalanche
- mistral
- sirocco
- chaparral
- permafrost

Key Points

- Warm ocean currents give much of Europe a milder climate than other areas at similar latitudes.
- Areas of western Europe with a marine west coast climate have generally moderate temperatures.
- Much of southern Europe has a Mediterranean climate, with mild, rainy winters and warm, dry summers.
- Europe's interior has more extreme seasonal temperatures than do areas nearer the sea.
- Both climate and human activity affect the natural vegetation of Europe.

Organizing Your Notes

Create graphic organizers like the one below to help organize your notes about each of Europe's climate regions.



Reindeer herding, northern Sweden

CONTENTS

CHAPTER 11

ASSESSMENT & ACTIVITIES

Reviewing Key Terms

Write the letter of the key term that best matches each definition below.

a. sirocco
b. fjord
c. foehn
d. polder
e. timberline
f. mistral

1. elevation above which trees cannot grow
2. dry wind that blows in the Alps
3. hot wind that blows from North Africa to Europe's Mediterranean coast
4. drained area reclaimed from the sea
5. deep, water-filled valley carved by glaciers
6. strong north wind from the Alps that brings cold air to southern France

Reviewing Facts

SECTION 1

1. Why is Europe a "peninsula of peninsulas"?
2. What geographic area in Europe has rich, fertile farmland and is a center of industry?
3. How have human actions over the centuries changed Europe's waterways?

SECTION 2

4. How do the Gulf Stream and the North Atlantic Drift affect Europe's climate?
5. What kinds of climate regions are found in Iceland and the Scandinavian Peninsula?

Critical Thinking

1. **Drawing Conclusions** How did geographic features help shape European cultures? Provide examples to support your answers.
2. **Identifying Cause and Effect** Why did the North European Plain develop into a densely populated industrial center?
3. **Drawing Conclusions** Copy the diagram of European rivers, seas, and waterways below onto a sheet of paper. In each oval, write the name of a city that is located on or beside the body of water. Then draw lines to show how cities are linked by waterways.

North Sea –
Baltic Sea –
Rhine River –
Danube River –
Thames River –
Main-Danube Canal –

NATIONAL GEOGRAPHIC

Locating Places

Europe: Physical Geography

Match the letters on the map with the physical features of Europe. Write your answers on a sheet of paper.

1. British Isles
2. Rhine River
3. Sicily
4. Apennines
5. Baltic Sea
6. Mediterranean Sea
7. Scandinavia
8. Crete
9. Iberian Peninsula
10. Balkan Peninsula

CONTENTS

CLICK HERE

GEOGRAPHY Online

Self-Check Quiz Visit the **Glencoe World Geography** Web site at tx.geography.glencoe.com and click on Self-Check Quizzes—Chapter 11 to prepare for the Chapter Test.

Using the Regional Atlas

Refer to the Regional Atlas on pages 260–263.

1. **Location** Through what country do the Seine, Loire, and Rhône Rivers flow?
2. **Place** What are three major agricultural products of the North European Plain?

Thinking Like a Geographer

Think about the physical geography of Europe. Identify Europe's energy resources, and where they are located. Which of these are nonrenewable resources? What future energy sources would you advise European countries to pursue?

Problem-Solving Activity

Group Research Activity People in Europe face many weather-related challenges, from avalanches in the mountains to flooding in the lowlands. Using the Internet and other resources, research an area in Europe that has successfully coped with weather-related events. Then report to the class on the solutions to these challenges. Include photos, charts, graphs, or any other visual elements to enhance your report.

GeoJournal

Creative Writing Using the information in your GeoJournal, describe an imaginary trip through a European country of your choice. Describe the country's physical features and the climate and natural vegetation you find. Use what you have learned in your reading to make your account detailed and colorful.

Technology Activity

Using an Electronic Spreadsheet

Choose a city in each of Europe's climate regions, and find the average rainfall for each city. Use a spreadsheet program to organize your information, listing the cities in the first column and the rainfall amounts in the next column. Use the program's graphics feature to make a bar graph. Write a paragraph summarizing the variations in rainfall among the cities.

The Princeton Review

TAKS Test Practice

Choose the best answer for the following multiple-choice question. If you have trouble answering the question, use the process of elimination to narrow your choices.

"And so I have finally come to understand that while I am hopelessly American, accustomed to (and dependent on) the relentless pressures and fierce energies of the New World, . . . there are moments when I want to escape to a different place with a beauty and a beat of its own. And when that happens, when I want to disappear from who I am, and where I live, the place I think of is Paris."

—David Halberstam, "Paris," *National Geographic Traveler,* October 1999

1. What kind of place does the author want to escape to sometimes?

A He wants a place where there is a lot of pressure and energy.

B He wants a beautiful place halfway around the world.

C He wants a unique, beautiful place that is different from where he lives.

D He wants a place where he can disappear into the crowds.

Test-Taking Tip When choosing an answer for a multiple-choice question, sometimes more than one option may seem correct. Read the question carefully, and then look in the reading for information about the kind of place. Compare each answer with that information.