

# Lesson 11

We will begin this week by reading Chapter Eleven on The Physical Geography of Europe from **pages 270-285**. This chapter is divided into 2 sections. Each section's focus and objective will be listed for you. As you read through your text, take appropriate notes to help prepare for tests.

**Section 1:** This section discusses Europe's important land formations, including its rivers, mountains, plains, islands, and distinctive peninsular features. The section also summarizes some of the continent's important natural resources.

**Objective:** Describe the dominant landforms and natural resources of Europe.

**Section 2:** This section discusses Europe's climate and vegetation regions.

**Objective:** Discuss the differences in climate and vegetation throughout Europe.

After you finish reading this chapter, go over your notes one last time to prepare for the test. Make sure you are clear on all focus points and that you feel comfortable with the material. Click on the link to complete the chapter test. Good luck!



## World Geography

## Lesson 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.



#### The Land

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.

[Lecture notes](#)

[A Geographic View](#)

#### 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

[Guide to Reading](#)

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 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.

### Comparing Lands

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 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 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 oceangoing 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.

# 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.

## 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.

Email  My Answers

Print My Answers

## Climate and Vegetation

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.

Lecture notes

A Geographic View

## 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?

Guide to Reading



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.

## 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.

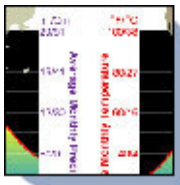
The Alps have a highlands climate with generally colder temperatures and more precipitation than nearby lowland areas. Sudden changes can occur, however, when dry winds called **foehns** (FUHNZ) blow down from the mountains into valleys and plains. Foehns can trigger **avalanches**, destructive masses 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 originally 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 broad-leaved 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 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, Pdraig 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.

## 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.

Email  My Answers

Print My Answers

## 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.

### 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.



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

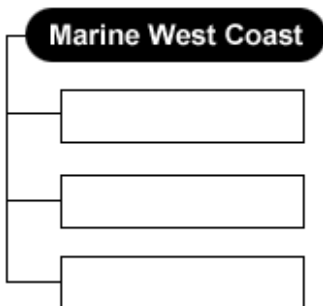
- timberline
- foehn
- avalanche
- mistral
- sirocco
- chaparral
- permafrost

### 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.



## Chapter 11 ASSESSMENT & ACTIVITIES

### Reviewing Key Terms

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

- 1  a. sirocco    1. elevation above which trees cannot grow



- |     |               |  |
|-----|---------------|--|
| 1 ▾ | b. fjord      | 2. dry wind that blows in the Alps   |
| 1 ▾ | c. foehn      | 3. hot wind that blows from North Africa to Europe's                       |
| 1 ▾ | d. polder     | 4. drained area reclaimed from the sea                                     |
| 1 ▾ | e. timberline | 5. deep, water-filled valley carved by glaciers                            |
| 1 ▾ | f. mistral    | 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 –

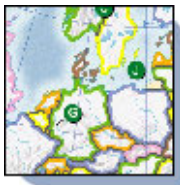
Danube River –

Baltic Sea –

Thames River –

Rhine River –

Main-Danube Canal –



## 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.



## Standardized 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.

North Sea –

Danube River –

Baltic Sea –

Thames River –

Rhine River –

Main-Danube Canal –

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.



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.

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