



Russia

WHY IT'S IMPORTANT —

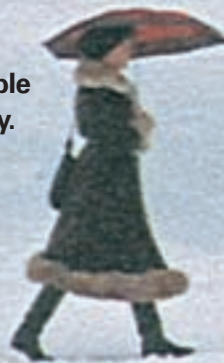
For most of the last century, Russia was part of the vast Soviet Union. Ruled by a Communist government, the Soviet Union challenged the United States and other democracies for global influence. Then the Soviet Union collapsed, and Russia emerged as an independent republic. Now Russia is struggling to build a stable democracy and free-enterprise economy. Because Russia is a key player in world affairs, its success—or failure—will affect your world in the years to come.

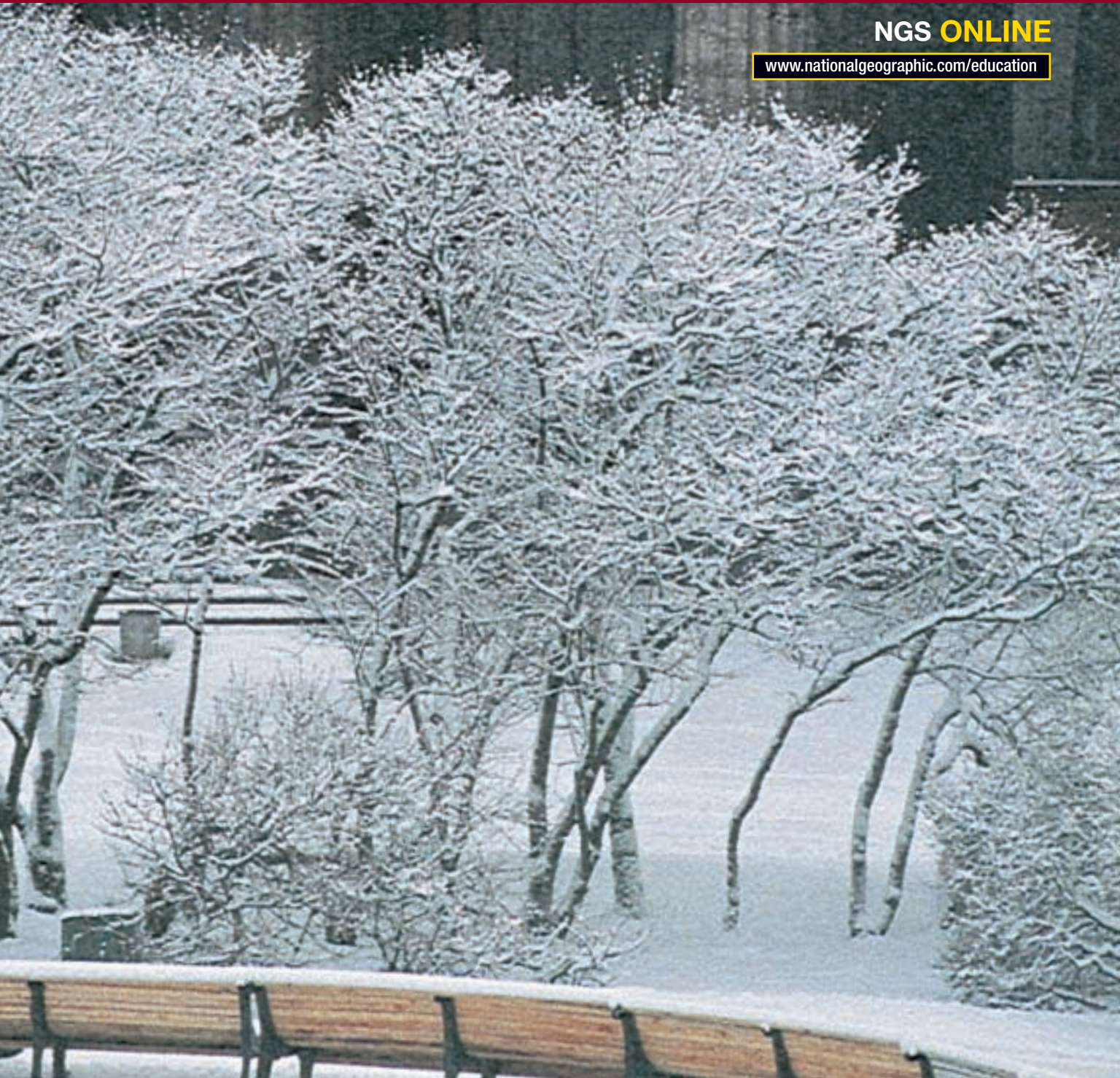


World Regions Video



To learn more about Russia and its impact on your world, view the World Regions video “Russia.”





*Snow-covered trees
in St. Petersburg*

What Makes Russia a Region?

The world's largest country, Russia stretches almost halfway around the northern part of the globe, covering nearly half of two continents. It is a land of vast distances, bitter winters, and remote frontiers.

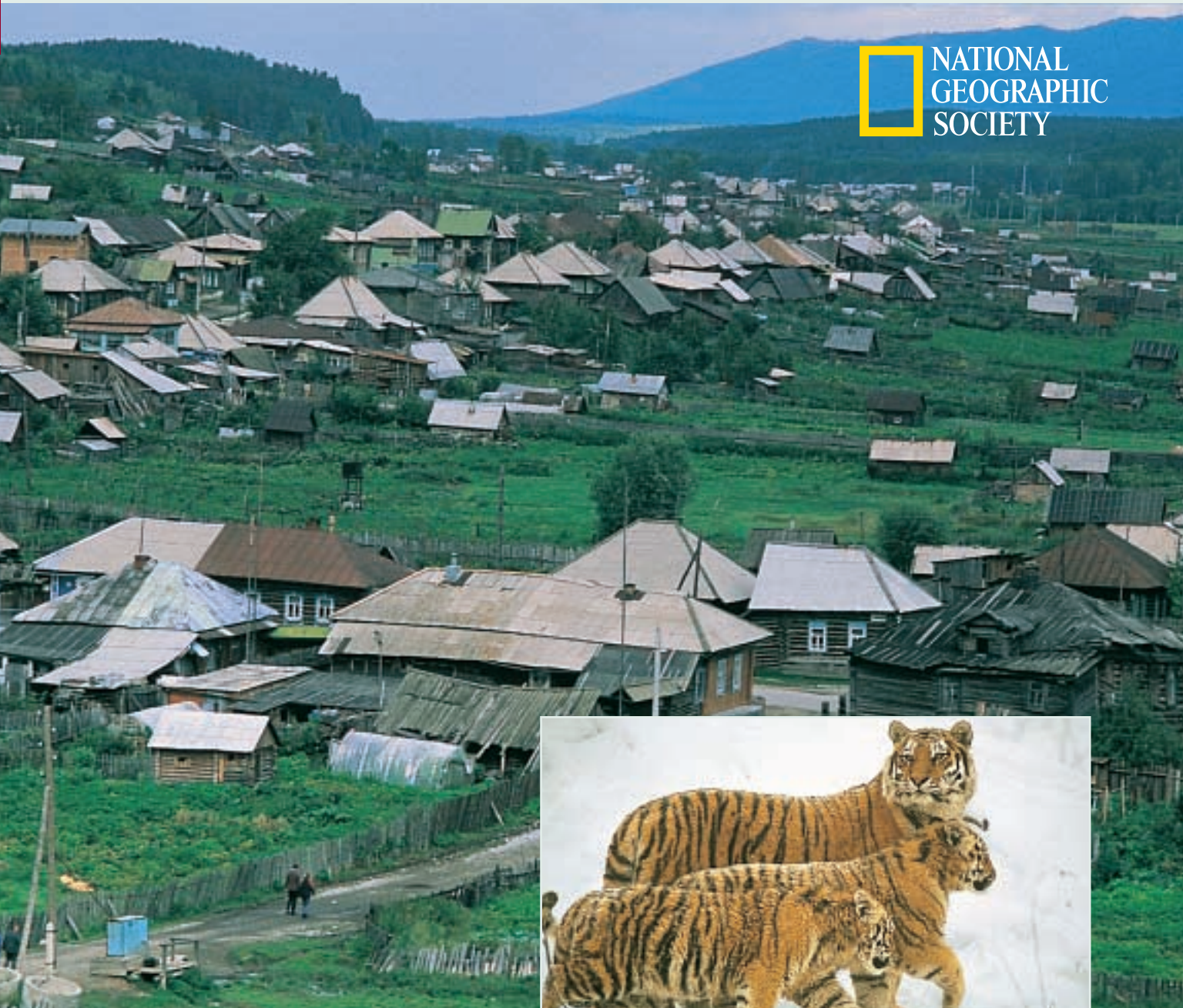
The ancient Ural Mountains separate European Russia in the west from Asian Russia, or Siberia, in the east. Most Russians live in the west, where several rivers course through rolling plains. East of the Urals, Siberia begins as a vast plain. It rises gradually to an immense plateau, then reaches higher still to rugged mountain ranges that border Russia's eastern shores. Siberia has abundant natural resources but few inhabitants.

North of the Arctic Circle, the land is treeless tundra where most of the ground is permanently frozen and winters are some of the coldest on Earth. South of the tundra lies the taiga, an enormous belt of dense coniferous forest. South of the trees is the Russian steppe, a rolling grassland with rich soil and a more hospitable climate.



1 Sparks flare against a dark January sky as lengths of pipe are welded in western Siberia. The pipeline will carry natural gas. Siberia is rich in natural resources, but its rugged terrain, harsh climate, and isolation make extracting and transporting those resources a tremendous challenge.





2 The splendid skyline of St. Petersburg, Russia's second largest city, forms a glowing backdrop for the Neva River. The Neva flows into the Gulf of Finland, an extension of the Baltic Sea. Like many of Russia's rivers, the Neva freezes over during the country's harsh winters.

3 Worn down over time, the rounded peaks of the Ural Mountains shelter a Russian village. The Urals extend 1,500 miles (2,400 km) from the Arctic Ocean south to Kazakhstan. They have long been a rich source of minerals, including gemstones such as emeralds, amethyst, and topaz.

4 At home in the snow, a trio of Siberian tigers roams through the frigid forests of eastern Siberia. Long, thick fur protects these big cats from the cold—but not from poaching and habitat loss, which have left Siberian tigers extremely endangered. Fewer than 500 survive in the wild.

From Empire to Free Enterprise

Most Russians are descended from Slavs, ancient European peoples who settled in western Russia. The settlements they established were eventually united under the rule of Ivan the Great, who ruled in the 1400s.

For centuries, autocratic czars governed what became a vast Russian empire. Revolution ended the czars' rule in 1917. Communism took its place, and Russia, along with neighboring republics, became part of the Soviet Union. Communist authorities controlled the Soviet economy. Everything from farms to steel mills was owned and operated by the government.

Since the Soviet Union disintegrated in 1991, Russians have struggled to establish a free-enterprise economy in their now independent nation.



- 1** A blindfolded statue of Stalin symbolizes the end of Communist rule in Russia. Stalin was a brutal dictator who ruled the Soviet Union for some 30 years. Millions of Russians starved or were put to death under his totalitarian regime. Stalin died in 1953; the Communist system would last almost four decades more.





2 Snow-dusted sculptures inspire an artist in Peter the Great's Summer Garden, in St. Petersburg. Czar Peter the Great founded St. Petersburg in 1703. His goal: to create a Russian capital that rivaled Western cities such as London and Amsterdam.

3 Onion-shaped domes cap Russian Orthodox churches beside a lake in northwestern Russia. The Russian Orthodox faith has its roots in the ancient Byzantine Empire, which was centered in what is now Turkey. The domes are characteristic of Byzantine architecture.

4 Eager for customers, vendors on a Moscow street wait anxiously by their produce. After the disintegration of the Soviet Union, the Russian economy entered a period of great instability. Wages fell, while prices for food and other necessities soared.

Russia

PHYSICAL



Elevation Profile

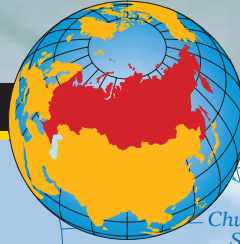
POLITICAL



MAP Study

1. What physical feature separates the North European Plain from the West Siberian Plain?
2. Which Russian cities are located on the North European Plain?

POPULATION DENSITY



COUNTRY PROFILES

COUNTRY * AND CAPITAL	FLAG AND LANGUAGE	POPULATION AND DENSITY	LANDMASS	MAJOR EXPORT	MAJOR IMPORT	CURRENCY	GOVERNMENT
RUSSIA 	 Russian, Local Languages	144,400,000 22 per sq. mi. 9 per sq. km	6,592,819 sq. mi. 17,075,401 sq. km	 Petroleum	 Machinery	Ruble	Federated republic

*COUNTRY AND FLAG NOT DRAWN TO SCALE

FOR AN ONLINE UPDATE OF THIS INFORMATION, VISIT GEOGRAPHY.GLENCOE.COM AND CLICK ON "TEXTBOOK UPDATES."

ECONOMIC ACTIVITY



Land Use	
[Green Box]	Commercial farming
[Light Green Box]	Subsistence farming
[Yellow Box]	Livestock raising
[Light Brown Box]	Nomadic herding
[Dark Brown Box]	Hunting and gathering
[Dark Green Box]	Forests
[Orange Box]	Manufacturing and trade
[Light Blue Box]	Commercial fishing
[White Box]	Little or no activity

Resources			
[Coal Icon]	Coal	[Tungsten Icon]	Tungsten
[Petroleum Icon]	Petroleum	[Platinum Icon]	Platinum
[Natural Gas Icon]	Natural gas	[Gold Icon]	Gold
[Iron Ore Icon]	Iron ore	[Copper Icon]	Copper
[Nickel Icon]	Nickel	[Lead Icon]	Lead
[Bauxite Icon]	Bauxite	[Zinc Icon]	Zinc
[Manganese Icon]	Manganese	[Tin Icon]	Tin

0 mi. 1,000
0 km 1,000
Two-Point Equidistant projection

MAP Study

1. What is Russia's most abundant natural resource?
2. Where do most of Russia's people live? Where are most of its natural resources found?

GLOBAL
CONNECTION

RUSSIA AND THE UNITED STATES

NUTCRACKER



Clara. The Mouse King. The Sugarplum Fairy. Do these names sound familiar? All across America, children and adults alike would instantly recognize them as the names of characters from *The Nutcracker* ballet. Although *The Nutcracker* originated in Russia more than a century ago, it has become a beloved holiday tradition in the United States.

In the late 1800s, elegant St. Petersburg was the world center for ballet. Peter Ilich Tchaikovsky, the famous Russian composer, was at the height of his career. A theater director in St. Petersburg asked Tchaikovsky to write music for a ballet based on a German fairy tale



called “The Nutcracker and the Mouse King.” Tchaikovsky agreed, and in 1892 the Russian Imperial Ballet gave the first performance of this unconventional ballet—the story of a young girl’s dream of Christmas presents that come to life in a magical kingdom of snowflakes and sweets.

The premiere of *The Nutcracker*, however, was far from a success. Critics sneered and audiences were unimpressed. The ballet wasn’t seen outside Russia until 1934. Even then, it was only modestly popular.

◀ Peter Ilich Tchaikovsky





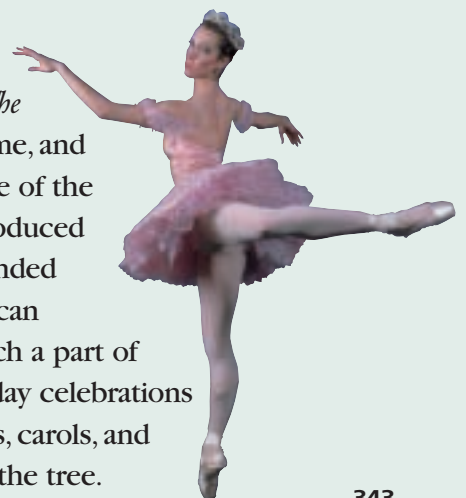
▲ Dancers performing *The Nutcracker* in Austin, Texas

In 1940, musical excerpts from *The Nutcracker* were included in the score of Walt Disney's animated film *Fantasia*. The movie was a hit, and as a result, Tchaikovsky's *Nutcracker* melodies were suddenly all the rage in the United States. The stage was set, so to speak, for a successful American production of the ballet.

It was George Balanchine, a Russian choreographer, who brought *The Nutcracker* to life for American audiences. Balanchine, whose given name was Georgi Melitonovitch Balanchivadze, was born in St. Petersburg and studied ballet there. As a boy, he danced the roles of the Mouse King and the Nutcracker Prince. In 1933 Balanchine came to the United States, where he helped found a ballet company that would

become the famous New York City Ballet. In 1954 Balanchine directed the New York City Ballet in a lush and imaginative production of *The Nutcracker*. It was an immediate—and enormous—success.

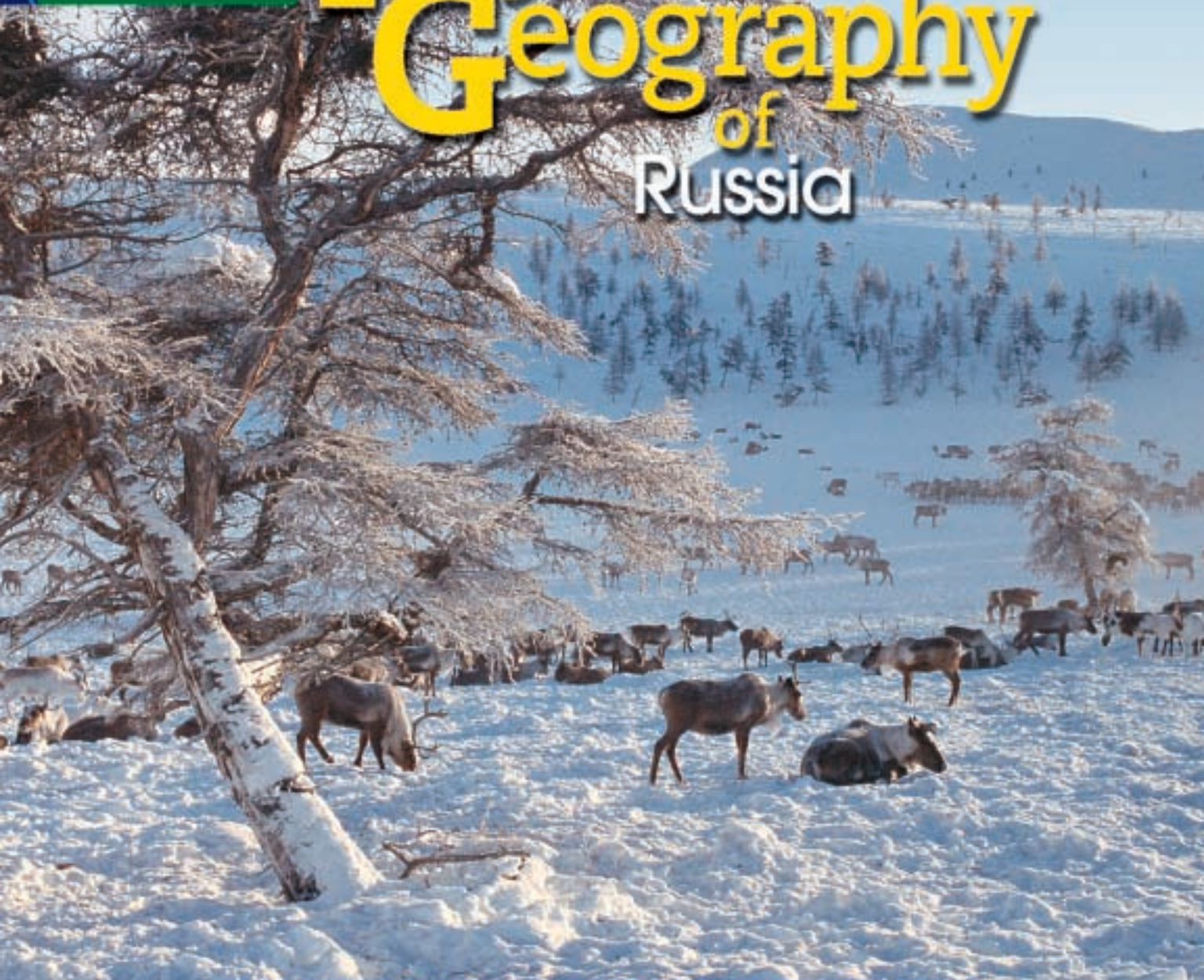
In the years that followed, *The Nutcracker* became, and still remains, one of the most widely produced and widely attended ballets in American history—as much a part of December holiday celebrations as colored lights, carols, and presents under the tree.



CHAPTER

14

The Physical Geography of Russia



GeoJournal

As you read this chapter, use your journal to note the physical features and environment of Russia. Use colorful, vivid words to describe the unique beauty of Russia's landscape.



Chapter Overview Visit the **Glencoe World Geography** Web site at tx.geography.glencoe.com and click on Chapter Overviews—Chapter 14 to preview information about the physical geography of the region.

CLICK HERE

Guide to Reading

Consider What You Know

Like Canada, Russia is a far northern country. How might Russia's location affect its connections to other parts of the world?

Read to Find Out

- How large is the land area of Russia?
- How do Russia's interconnected plains and mountain ranges shape settlement in the country?
- What are Russia's natural resources?

Terms to Know

- chernozem
- hydroelectric power
- permafrost

Places to Locate

- Caucasus Mountains
- Central Siberian Plateau
- North European Plain
- West Siberian Plain
- Volga River

◀ Reindeer in winter pastures, Siberia, Russia

The Land



A Geographic View

Swimming in the Volga

Crossing the Volga on a summer day, the ferry Moskva-44 took pale passengers to a sandy beach and brought away bathers red as lobsters. Upon this island Sahara were . . . boom boxes, sand castles, paper hats. . . . Yes, people still swim in the Volga, and I did, too. . . . You just forget about heavy metals and the 24 smokestacks vying on the horizon with the awesome Stalingrad memorial. The love of Mother Volga is real and has priority.

—Mike Edwards, "Mother Russia on a New Course," National Geographic, February 1991

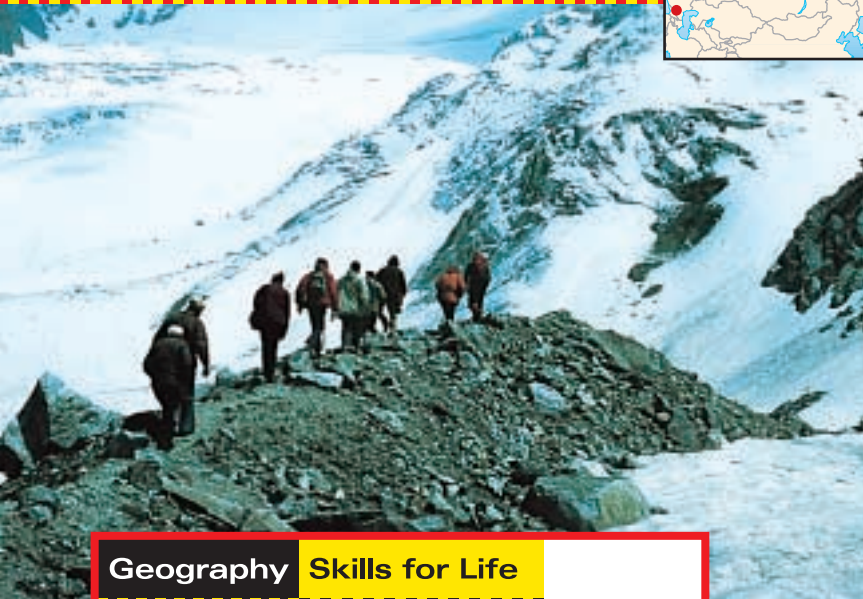
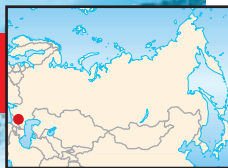


Sunbathers, Volga River

In 1991 the powerful Soviet Union broke up into 15 independent republics. Of these, Russia is by far the largest. In this section you will explore Russia, a gigantic and varied land of grassy and swampy plains divided and bordered by mountain ranges; tundra; subarctic forests; and wide, often frozen rivers and seas.

A Vast and Varied Land

In both total land area and geographic extent, Russia is the world's largest country. Covering about 6.6 million square miles (17.1 million sq. km), Russia stretches across parts of two continents—Europe and Asia. The country's greatest east-west extent is about 6,200 miles (about 9,980 km). This vast distance spans 11 time zones, contains 9 mountain ranges, and borders 13 seas, 3 oceans, and 14 other countries. The Russian landscape consists of an interrupted belt of rugged mountains and plateaus in the south and east and vast plains in the north and west.



Geography Skills for Life

Treacherous Climb Hikers brave rugged terrain and glacial temperatures in the Caucasus Mountains of southern Russia.

Place How do mountain ranges help define Russia's territory?

Mountains and Plateaus

Mountains and plateaus punctuate the generally flat landscape of Russia. The Ural Mountains mark the traditional boundary between European Russia and Asian Russia. The Urals are an old, worn-down series of mountain ranges with an average height of about 2,000 feet (about 610 m). Though modest in height, the Urals are rich in iron ore and mineral fuels, such as oil and natural gas.

In southwestern Russia the rugged **Caucasus** (KAW•kuh•suhs) **Mountains** lie between the Black and Caspian Seas. The Caucasus reach their highest elevation at Mount Elbrus, an extinct volcano that reaches 18,510 feet (5,642 m), Russia's highest point.

Mountain ranges also form a rugged natural boundary between Russia and China. These mountains mark the southeastern edge of the **Central Siberian Plateau**. This rolling plateau has elevations ranging from 1,600 to 2,300 feet (480 to 700 m). Throughout the plateau's expanse, swiftly flowing rivers have carved out canyons.

Still farther east, mountains and basins extend to the Pacific Ocean. Temperatures in this remote area have plunged to a record -90°F (-68°C). In the easternmost part of Russia, on the Kamchatka Peninsula, there are more than 100 volcanoes, including 23 that are active.

Plains Areas

Vast plains span nearly half of Russia. Most of European Russia is part of the rolling **North European Plain** that sweeps across western and central Europe into Russia. In Russia, the northern part of this plain is very flat and poorly drained, resulting in many swamps and lakes. By contrast, the southern part has navigable waterways and a rich black soil, known as **chernozem** (cher•nuh•

ZYAWM), that supports the production of wheat, barley, rye, oats, and other crops. About 75 percent of the Russian population lives on the North European Plain. This region holds Russia's most populous cities, including Moscow, the capital, and the port city of St. Petersburg.

Farther to the east, the Ural Mountains divide the North European Plain from another vast plains area—the **West Siberian Plain**. With almost 1 million square miles (2.6 million sq. km), the West Siberian Plain is one of the world's largest areas of flatland. At its widest this plain stretches from the Arctic Ocean in the north to the grasslands of central Asia in the south. Its lowland areas are poorly drained, with many swamps and marshes.

Comparing Lands

Russia is about twice the size of the continental United States.

Coasts, Seas, and Lakes

Russia has the longest continuous coastline of any country in the world. Stretching 23,400 miles (37,650 km), Russia's coastline touches both the Arctic and Pacific Oceans. Other coasts lie along an arm of the Baltic Sea in the northwest and along the Black and Caspian Seas in the south. Because of Russia's far northern location, most of its coast lies along waters that are frozen for many months of the year. As a result, Russia has few ocean ports that are free of ice year-round.

In Russia's southwest corner, the Black Sea provides Russia with a warm-water outlet to the Aegean and Mediterranean Seas through three Turkish-controlled waterways—the Bosphorus strait,

the Sea of Marmara, and the Dardanelles (DAHRD•uhn•EHLZ). Despite sudden storms that sometimes strike the Black Sea, Russia's fishing industry has thrived in its waters.

The Caspian Sea, on Russia's southwestern border, is the largest inland body of water in the world. Although called a sea, it is actually a salt-water lake that occupies a deep depression. Rivers flow into the Caspian, but there is no outlet to the ocean. Water in the Caspian Sea evaporates over time, slowly shrinking the sea and leaving behind salts that accumulate and make the water saltier.

Another large body of water, Lake Baikal (by•KAHL), lies in southern Siberia. At nearly 400 miles (644 km) long, 40 miles (64 km) wide, and

**NATIONAL
GEOGRAPHIC**

MAP STUDY



Russia: Physical-Political

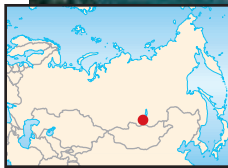


Geography Skills for Life

- 1. Interpreting Maps** Which area has the highest elevation, the West Siberian Plain or the Central Siberian Plateau?
- 2. Applying Geography Skills** Which Russian peninsulas extend north of the Arctic Circle?

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

CONTENTS



Geography Skills for Life

Lake Baikal At an estimated 20 to 25 million years old, Russia's Lake Baikal is the world's oldest existing freshwater lake.

Human-Environment Interaction How has industrial development affected Lake Baikal?

over 1 mile (1.6 km) deep, Lake Baikal is the third largest lake in Asia and the deepest freshwater lake in the world. It is estimated to contain about 20 percent of the earth's total supply of freshwater. In recent years runoff from nearby pulp and paper factories has threatened the purity of the lake.

Rivers

Some of the world's longest rivers flow through Russia, draining a large portion of the land and providing water for irrigation. They also serve as transportation routes or sources of electric power for densely populated urban areas. Most of Russia's longest rivers—which supply 84 percent of the country's water—are located in Siberia,

where only 25 percent of the population lives. Thus, people in Siberia enjoy a surplus of freshwater, but European Russians often face water shortages or problems with water quality.

The Volga River

The **Volga River** in European Russia is the fourth-longest river in Russia. Affectionately called *Matushka Volga*, or "Mother Volga," the river is vital to Russia. The Volga and its tributaries drain much of the eastern part of Russia's North European Plain. They connect Moscow to the Caspian Sea and, by way of the Volga-Don Canal, to the Sea of Azov and the Black Sea. Canals link the Volga to the Baltic Sea in the north, giving Russia a water route to northern Europe. Although frozen almost half of each year, the river provides **hydroelectric power**, or power generated by falling water, and water for drinking and irrigation.

Two-thirds of Russia's water traffic travels along the Volga. Heavy use of the river, however, has created challenges for Russia's people. Fed by melting snow, the wide, swift Volga supplies 33 percent of Russia's usable water, but half of it returns to the river carrying human and industrial waste. In addition, dams interrupt the river's flow, threatening wildlife and drinking water supplies.

Other rivers important to European Russia include the Western Dvina, the Dnieper, and the Don. Many fishing villages line the banks of the Don as it flows through rich farmland toward Rostov, where it empties into the Sea of Azov. A visitor to Veshenskaya, several hundred miles upstream, describes the river's peaceful flow:

“It is indeed a quiet Don there, flowing dreamily at sunset under a diaphanous mist. Rowboats move upon the surface like water spiders, as geese waddle down to the edge, honking joyously.”

Mike Edwards, "A Comeback for the Cossacks," *National Geographic*, November 1998

Siberian Rivers

In Siberia, rivers such as the Ob, the Irtysh, the Yenisey, and the Lena rank among the world's largest river systems. They flow north through

Siberia to the Arctic Ocean. Temperatures are warmer at the rivers' sources in the south than at their mouths in the north. Frozen rivers melt and land along the rivers thaws earlier in the south than in the north. Blocked by ice as they head northward, the meltwaters often flood the land, creating vast inland swamps and marshes.

The Amur River, which drains eastward, forms the border between Russia and China for about 1,000 miles (1,610 km). Influenced by summer monsoon winds from the southeast, the Amur River valley is warmer than the rest of Siberia and is Siberia's main food-producing area.

Natural Resources

Russia's physical geography is both a blessing and a challenge. The country holds an abundance of natural resources. Much of this wealth, however, lies in remote and climatically unfavorable areas and is difficult to tap or utilize.

Minerals and Energy

Russia has huge reserves of mineral resources. It is especially rich in mineral fuels. The country

holds large petroleum deposits and 16 percent of the world's coal reserves. Russia produces more dry natural gas than any other country in the world. It also leads the world in nickel production and ranks among the top three producers of aluminum, gemstones, platinum group metals, sulfur, and tungsten. Russia's rivers make it a leading producer of hydroelectric power.

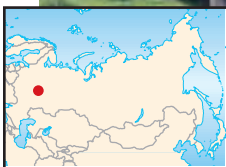
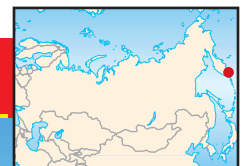
Soil and Forest Land

Because of Russia's generally cold climate, only about 10 percent of Russia's land can support agriculture. In the far north there is very little farming because of **permafrost**, a permanently frozen layer of soil beneath the surface of the ground, which underlies much of Russia. However, a wide, fertile band called the Black Earth Belt covers about 250 million acres (100 million ha) and stretches from Ukraine to southwestern Siberia. The chernozem soils of this farmland produce crops such as wheat, rye, oats, barley, and sugar beets that feed much of Russia.

About one-fifth of the world's remaining forest lands lie in Russia—75 percent of them in eastern Siberia. Second only to the Amazon rain forest in terms of the amount of oxygen returned to the

NATIONAL GEOGRAPHIC

World Explorer

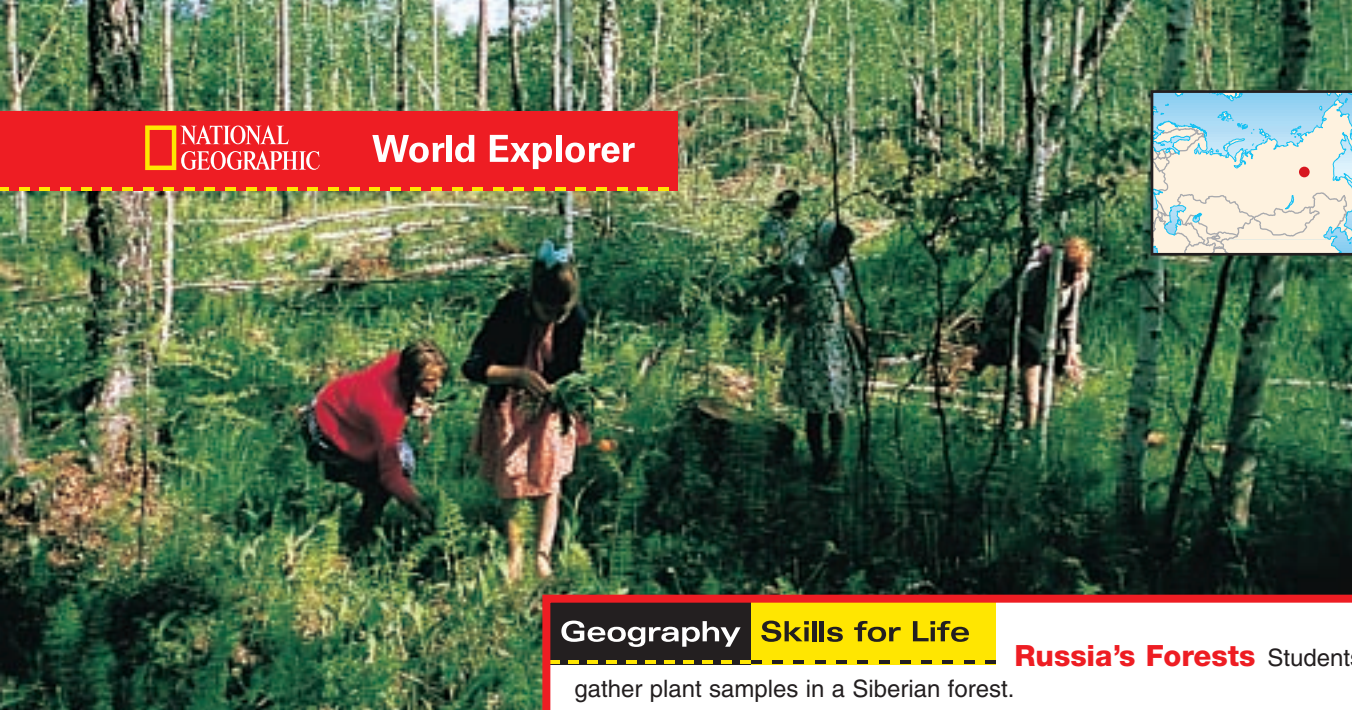
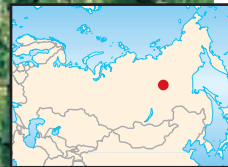


Geography Skills for Life

Vital Resources

The Volga River (left) drains western Russia. In Kamchatka, in eastern Russia, farmers harvest potatoes from the rich soil (right).

Region What other rivers are important to human activity in Russia?



Geography

Skills for Life

Russia's Forests Students

gather plant samples in a Siberian forest.

Human-Environment At what rate are Russian forests being depleted each year?

atmosphere, Russian forests also supply much of the world's timber, mainly pine, fir, spruce, cedar, and larch. As a result of commercial logging, however, Russian forests shrink by almost 40 million acres (16 million ha) each year—a rate of loss higher than that of the Amazon Basin.

Economics

Russia's Fishing Industry

Fish remain important to the Russian diet and economy, even though many of Russia's rivers and seas are overfished or polluted. Salmon from the Pacific Ocean and herring, cod, and halibut from the

Arctic Ocean support a flourishing fishing industry. However, the supply of world-famous Russian caviar, or salted fish eggs, has declined. Dams built on the Volga River have interrupted the migration of sturgeon, the fish that provide the eggs for caviar. Sturgeon is now being fished illegally to meet the global demand for this delicacy.

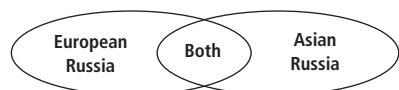
As you have learned, Russia's vast and varied land of plains, mountains, and great frozen tundra has both advantages and disadvantages. In the next section, you will learn in more detail how climate restricts access to the country's natural resources.

TAKS Practice

SECTION 1 ASSESSMENT

Checking for Understanding

- 1. Define** chernozem, hydroelectric power, permafrost.
- 2. Main Ideas** Use a Venn diagram like the one below to show how European Russia and Asian Russia are alike and different.



Critical Thinking

- 3. Drawing Conclusions** Why do 75 percent of Russians live west of the Ural Mountains?
- 4. Identifying Cause and Effect** What problems arise as a result of the large number of Russians living on the North European Plain?
- 5. Making Generalizations** Explain how Russia's geography affects access to natural resources.

Analyzing Maps

- 6. Region** Study the map on page 347. What types of physical features form Russia's boundaries?

Applying Geography

- 7. Effect of Location** Think about the locations of Russia's seas. Then write a descriptive paragraph explaining how the locations of these seas affect Russia's economy.

Guide to Reading

Consider What You Know

You can see on a map that Russia's vast landmass lies in the far northern latitudes. What effect do you think this location has on Russia's climate?

Read to Find Out

- What are Russia's major climates?
- What are the seasons like in Russia?
- How does climate affect the way Russians live?
- What types of natural vegetation are found in each of Russia's climate regions?

Terms to Know

- tundra
- taiga
- steppe

Places to Locate

- Siberia
- Arctic Circle

Climate and Vegetation



A Geographic View

Ice or Mud

We had started on a fine summer day, but as we approached the coast, blue skies gave way to a bitter wind and soul-drenching fog. When Yuri stopped at a small outpost called Nizhne Kamchatsk . . . I was ready to accept his friend's offer of hot tea made from tree fungus ("Good for the kidneys!") and an all-purpose forecast: "Fickle, the weather," he growled. "In Kamchatka the earth is a piece of ice or a piece of mud."

—Bryan Hodgson, "Kamchatka: Russia's Land of Fire and Ice," National Geographic, April 1994



Mountain range, Kamchatka Peninsula

Shifting extremes of weather in the Kamchatka Peninsula challenge the people who live there. Much of Russia experiences extreme cold and long winters. In a land where it is frigid and dark for long periods of time and where the rivers do not move for months, people learn patience.

Russia's Climates and Vegetation

Most of Russia has a harsh climate with long, cold winters and short, relatively cool summers. The country's climate is characterized by temperature extremes. The coldest winter temperatures occur in eastern **Siberia**. Warmer air from the Atlantic Ocean moderates temperature to some extent in certain areas of European Russia. Most of the country, however, lies well within the Eurasian landmass, far

away from any moderating ocean influences. The Siberian city of Verkhoyansk, located at about 68°N latitude, has been called the “cold pole of the world” because of its bitter winters. January temperatures there have fallen to a low of -90°F (-68°C).

High Latitude Climates

Russia’s high-latitude climates feature extremely cold winters and short summers. Seasonal temperatures across this broad landmass can vary greatly. In Yakutsk, in eastern Russia, for example, January temperatures often fall below -33°F (-36°C), and July temperatures average 64°F (18°C). Isolated from oceans and moisture-bearing air masses, Siberia’s interior has very little precipitation.

Tundra

Far to the north, the **tundra**, a vast, treeless plain, dominates the Russian landscape. Hugging the edges of the Arctic seas, almost all of the tundra climate region lies north of the **Arctic Circle** (66½°N). An isolated patch of tundra in northeastern Siberia lies near the Sea of Okhotsk. *Tundra* in Finnish means “barren land,” an apt term for a place where the average annual temperature is below freezing. In this region the sky stays dark for many weeks before and after December 22. Then, for several weeks during summer, there is continuous sunlight.

The tundra covers about 10 percent of Russia. Its short growing season and the thin, acidic soil lying just above the permafrost limit the kinds of plants

NATIONAL GEOGRAPHIC MAP STUDY



Russia: Climate Regions



Geography Skills for Life

1. **Interpreting Maps** In which climate region is Moscow located?

2. **Applying Geography Skills** How does Russia’s latitude affect its climate?

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

that can grow there. Only mosses, lichen, algae, and dwarf shrubs thrive in the tundra.

Subarctic


Russia's dominant climate region is the subarctic. Although the subarctic lies south of the tundra, some of the world's coldest temperatures occur there. For 120 to 250 days each year, snow covers the ground. The subarctic climate supports the **taiga** (TY•guh), a forest belt that covers two-fifths of European Russia and extends into much of Siberia. Roughly the size of the United States, the Russian taiga is the world's largest coniferous forest, containing about one-half of the world's softwood timber.

Culture


Living in a Cold Climate

Living in an extremely cold climate challenges Russians' creativity. Russians must make adjustments to the climate in all aspects of their lives—jobs, transportation, food and water supplies, heating, clothing, and plumbing. Keeping warm requires a great deal of energy from oil, gas, wood, or coal. Layers of clothing made of wool or fur protect those who brave the frigid outdoor temperatures.

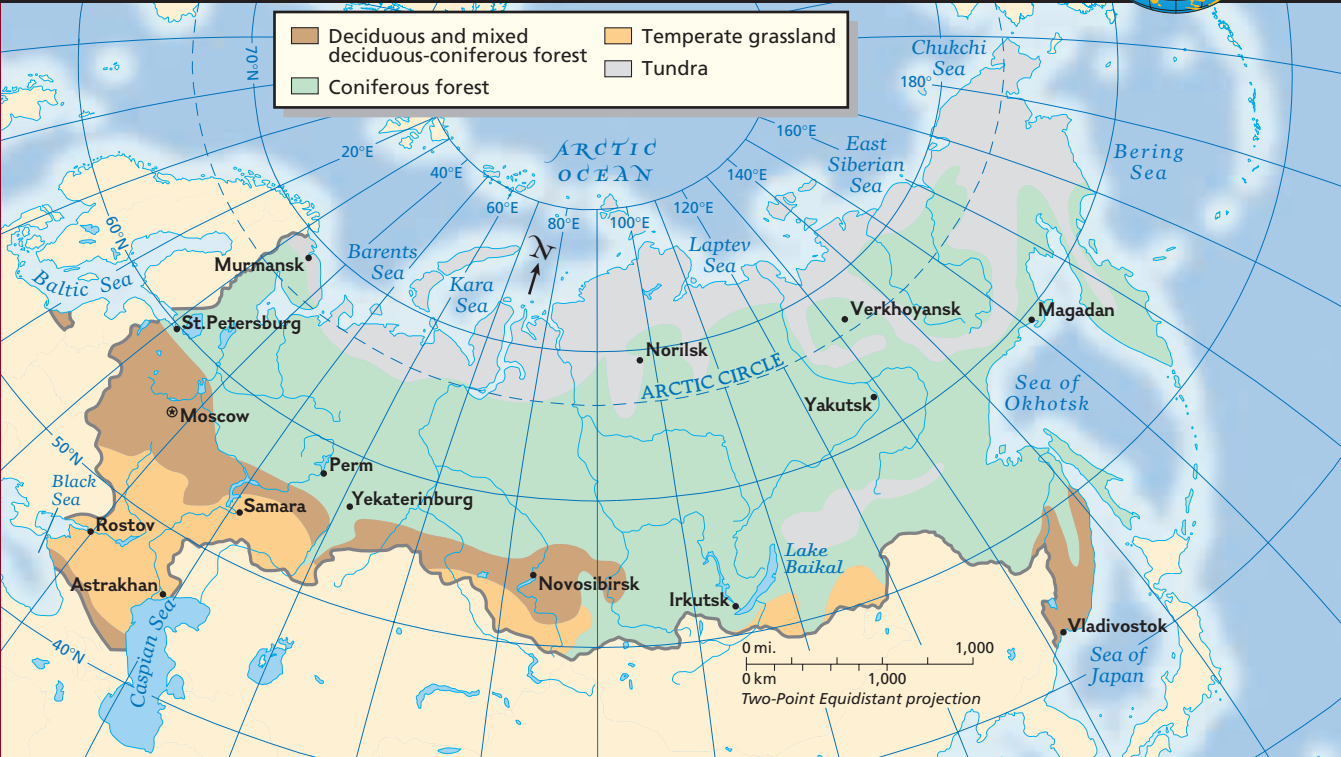
Businesses and industries also must make adjustments to the extreme cold. Builders plan for the cold when they construct buildings. To make machinery and cars, manufacturers must use a special type of steel that will not crack in the cold.



MAP STUDY



Russia: Natural Vegetation

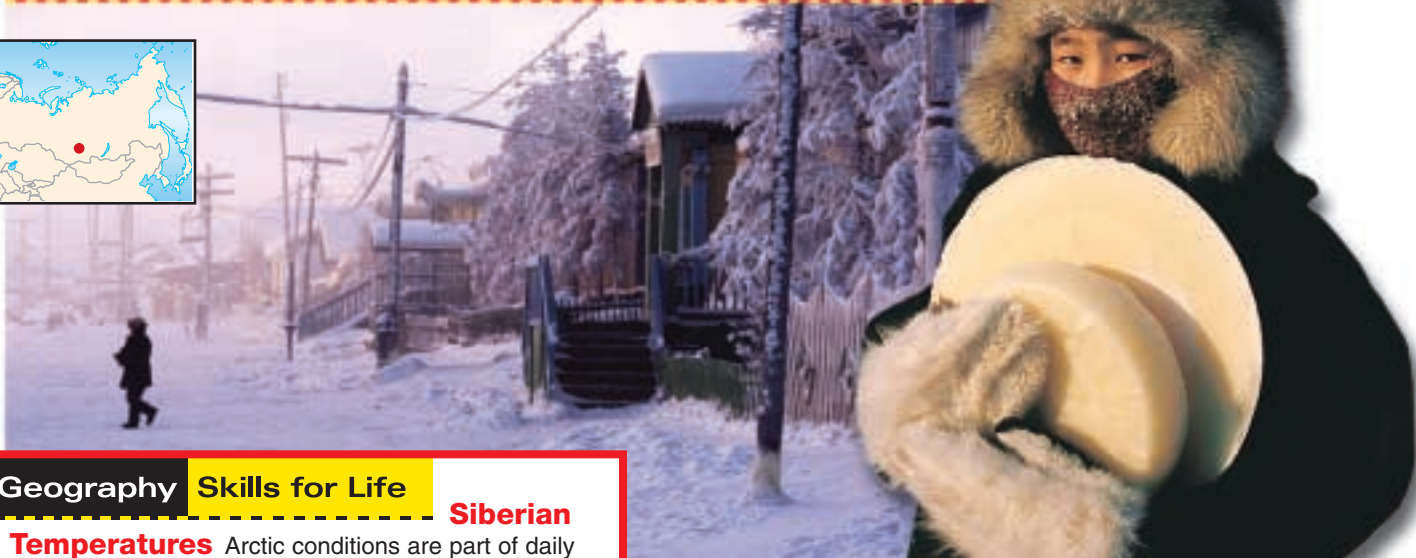


Geography Skills for Life

- 1. Interpreting Maps** What kind of natural vegetation is found in Southwestern Russia?

- 2. Applying Geography Skills** How does the vegetation of the tundra compare with that of the taiga?

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



Geography

Skills for Life

Siberian

Temperatures Arctic conditions are part of daily life in Siberia. The woman shown at right is carrying blocks of frozen milk to her home.

Place Why is the climate so cold in Siberia?

Mid-Latitude Climates

Russia's mid-latitude climates are much milder than the high-latitude climates, with milder winters and warmer summers. Although still relatively cold, these climates are where most Russians live and where much of Russia's agricultural production takes place.

Humid Continental

Most of Russia's North European Plain and a small part of southern Siberia have a humid continental climate. Temperatures in Moscow, which lies in a humid continental region, range from 9° to 21°F (-13° to -6°C) in January and from 56° to 75°F (13° to 24°C) in July. In humid continental areas of Russia, the coniferous taiga of the north gives way to mixed coniferous-deciduous forests. Soils there

are somewhat more fertile than those of the taiga, and farming methods and fertilizers have made them very productive. Here, one traveler takes note of the crops he sees in the region:

“The train bored through a corridor of birch and pine interspersed every 15 minutes with a village. Each of these openings revealed, in the evening light, patches of cabbages, beets, onions, and tomatoes. . . .”

Mike Edwards, "Playing by New Rules," *National Geographic*, March 1993

Farther south the mixed forests gradually merge into temperate grasslands. The rich chernozem soil makes these grasslands ideal for crop production, especially for growing grains such as wheat and barley.

History

War and Winter

Russia's cold climate played an important role during World War II. When German troops invaded the former Soviet Union on June 22, 1941, German commanders thought they would win a quick victory. By November, German forces had

CLICK HERE



Student Web Activity Visit the **Glencoe World Geography** Web site at tx.geography.glencoe.com and click on Student Web Activities—Chapter 14 for an activity about Siberia.

surrounded Leningrad (now St. Petersburg) and were approaching Moscow. As the Germans advanced into the suburbs of Moscow in December, they unexpectedly encountered Russia's most effective weapon, its brutal winter.

In 1941 winter arrived early, blanketing the front lines with temperatures as low as -40°F (-40°C), the coldest temperatures in decades. Many of the German troops, who were still wearing summer uniforms, suffered frostbite. The frigid cold paralyzed the German tanks, mechanized vehicles, artillery, and aircraft. Russian soldiers, used to the harsh cold, fought well. Siberian troops in particular proved to be extremely effective cold-weather fighters. Under pressure, the Germans retreated, forced back by a combination of Russia's harsh winter and its military forces.



Steppe

A small area between the Black and Caspian Seas and a thin band along Russia's border with Kazakhstan make up Russia's **steppe** climate region. This temperate grassland area has dry summers and long, cold, dry winters with swirling, sparse snow. The steppe's chernozem soil is rich in organic matter that enables many plants to flourish. Rippling in the winds, seas of grass stretch to the horizon in every direction. Sunflowers, mint, and beans also flourish in the steppe. In recent years, however, the introduction of foreign plants

Geography

Skills for Life

Russian Steppe Over the centuries, many nomadic invaders, including Attila the Hun, have crossed over Russia's steppe to invade territories to the west.

Region What allows plants to flourish in Russia's steppe region?

and overgrazing by animals have damaged the steppe ecosystem. As the newly introduced plants crowd out native grasses, soil fertility declines.

As you have learned, frigid climates dominate large areas of Russia. Nonetheless, in the pockets of more moderate climates, vegetation and human life coexist quite comfortably.

TAKS Practice

SECTION 2 ASSESSMENT

Checking for Understanding

- Define** tundra, taiga, steppe.
- Main Ideas** On a sheet of paper, create a table like the one below. Complete the table by filling in information on the climate regions and vegetation of Russia.

Climate Region	Description	Vegetation

Critical Thinking

- Making Generalizations** What generalization can you make about Russia's climate regions?
- Making Inferences** How does Russia's climates and short growing season affect food production?
- Comparing and Contrasting** What are the differences between the tundra and subarctic climate regions? Between the humid continental and steppe climate regions?

Analyzing Maps

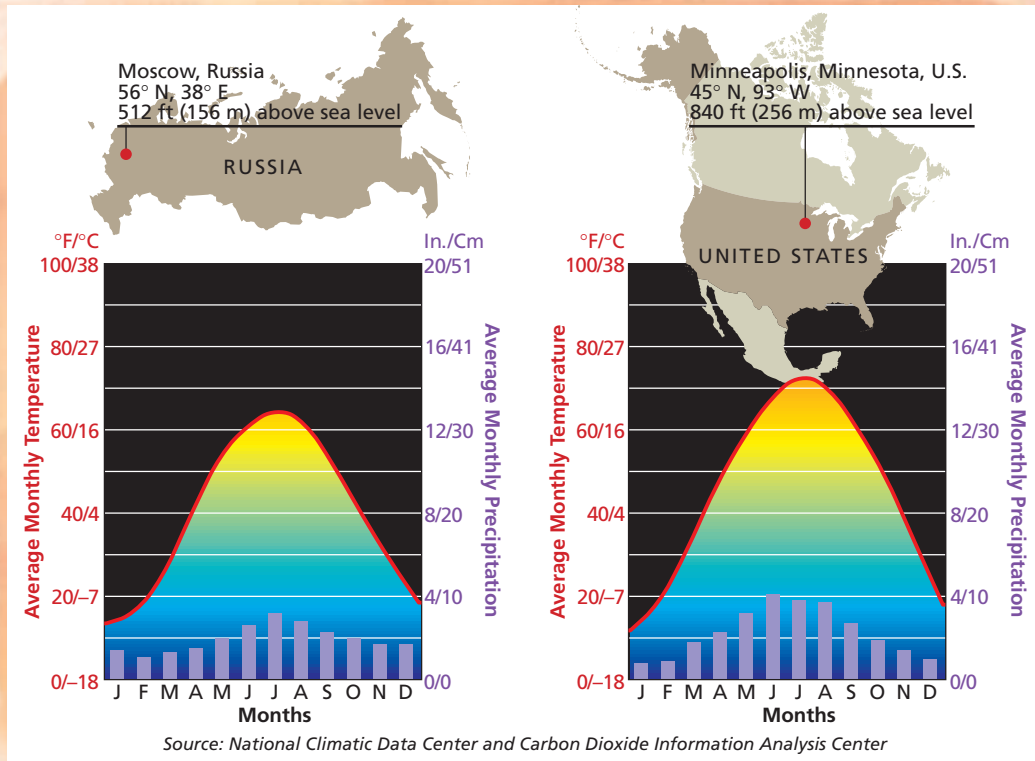
- Region** Study the maps on pages 347 and 352. Which type of climate characterizes the North European Plain?

Applying Geography

- Impact of Climate** Write a paragraph describing physical processes, such as freezing and thawing, and the effect they have on the land and the people of Siberia and other northern parts of Russia.

Understanding Climographs

Climate is the result of the complex interaction of latitude, wind patterns, temperature, and precipitation. Climographs allow us to compare and contrast different climates in different regions based on temperature and precipitation.



Learning the Skill

A climograph combines a line graph and bar graph to show average variation in temperature and precipitation. In the graphs above, the months of the year are shown on the horizontal axis. Temperature appears on the left vertical axis as a line graph; precipitation appears on the right vertical axis as a bar graph.

To analyze the information in a climograph:

- Identify highest and lowest temperatures.

- Determine the variation in annual precipitation.
- Use this information to describe and compare the two climates.

Practicing the Skill

Answer the questions using the climographs above.

1. Which city is warmer year-round? Wetter?
2. Which city has the greater annual variation in temperature?
3. What kind of climate does Moscow have? Minneapolis?

Applying the Skill

Research the average monthly precipitation and temperature in your area using the library, a local newspaper, or the Internet. Use the data to make a climograph. How are the climates of your area and Moscow similar? Different?



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



SECTION 1

The Land (pp. 345–350)

Terms to Know

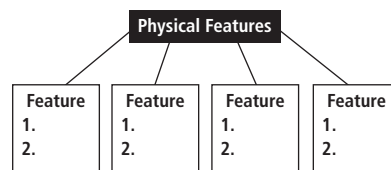
- chernozem
- hydroelectric power
- permafrost

Key Points

- Russia is the largest country in the world, spanning Europe and Asia.
- Russia's land consists of interconnected plains and plateaus and is bordered on the south and east by mountain ranges.
- Most rivers in Russia flow northward and are frozen for much of the year.
- Russia is rich in resources, such as petroleum, coal, minerals and gems, and timber.

Organizing Your Notes

Use a diagram like the one below to help you organize important details about Russia's physical features.



SECTION 2

Climate and Vegetation (pp. 351–355)

Terms to Know

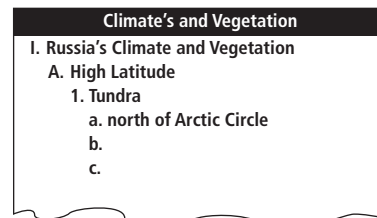
- tundra
- taiga
- steppe

Key Points

- Most of Russia has a harsh climate with wide extremes of temperatures, which creates challenges in all aspects of Russian life.
- Russian winters are long and cold, and its summers are short and relatively cool.
- Permanently frozen subsoil, or permafrost, lies beneath much of Siberia.
- The vegetation in Russia is varied, with treeless tundra in the far north, densely wooded taiga in the north and central areas, and temperate steppe grasslands in the southwest.

Organizing Your Notes

Create an outline using the format below to help you organize your notes for this section.



Birch tree forest
in Siberia. ▶

Reviewing Key Terms

Write the key term that best completes each of the following sentences. Refer to the Terms to Know in the Summary & Study Guide on page 357.

- The permanently frozen _____ lies beneath much of northern Russia.
- The frigid _____ stretches along Russia's northern boundary.
- Many varieties of grasses grow in the _____ climate region.
- The rich _____ soil of the North European Plain supports the production of grains.
- Coniferous trees grow in the _____, a forest belt that covers most of Russia.
- The Volga River provides western Russia with _____.

Reviewing Facts

SECTION 1

- Which mountains form a natural dividing line between European Russia and Asian Russia?
- What are Russia's two main plains?
- Explain why the Volga River is so important to the people of Russia.
- What are Russia's major natural resources?

SECTION 2

- What are the main characteristics of Russian seasons?
- What are the four climate regions in Russia?
- Which climate region dominates Russia?
- What kinds of vegetation are found in each of Russia's climate regions?

Critical Thinking

- Drawing Conclusions** Why do most Russians live on the North European Plain?
- Analyzing Information** Why is Russia's Volga River often called "Mother Volga"?
- Identifying Cause and Effect** Create a web diagram like the one below, and fill in effects of the cold climate on Russian life. Then write a paragraph describing one effect in detail.

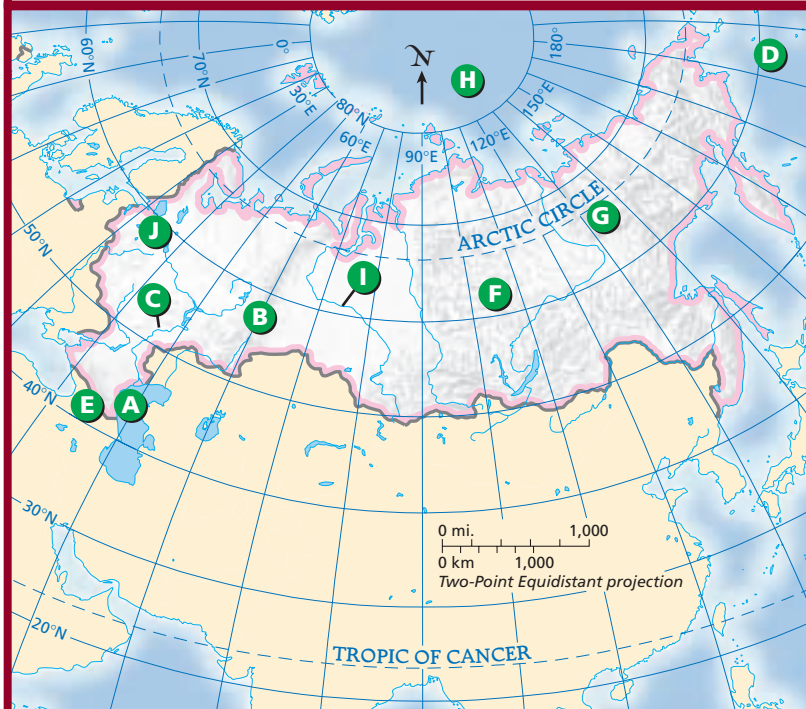


Locating Places

Russia: Physical Geography

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

- | | | |
|-----------------------------|-----------------|--------------------------|
| 1. Ural Mountains | 5. Arctic Ocean | 9. Ob River |
| 2. Caucasus Mountains | 6. Bering Sea | 10. North European Plain |
| 3. Verkhoyansk Range | 7. Caspian Sea | |
| 4. Central Siberian Plateau | 8. Volga River | |



Self-Check Quiz Visit the **Glencoe World Geography** Web site at tx.geography.glencoe.com and click on Self-Check Quizzes—Chapter 14 to prepare for the Chapter Test.

CLICK HERE

Using the Regional Atlas

Refer to the Regional Atlas on pages 338–341.

- 1. Location** What challenges do Russia's physical features create for mining and transporting coal?
- 2. Region** What is the major natural resource found on the Central Siberian Plateau?

Thinking Like a Geographer

Think about the physical geography of Russia. What factors prevent Russia from being a major shipping country with many ports? As a geographer, which form of transportation within Russia do you think would be the best choice for further development?

Problem-Solving Activity

Decision Making Imagine you are a Russian engineer. A foreign automobile manufacturing company has asked you to recommend a location within Russia to build a new plant. List the resources and services needed for the factory. Then use your text, the Internet, or other sources to select one or two ideal areas for the plant. Write your recommendations in a letter to the president of the company.

GeoJournal

Descriptive Writing Using the information you logged in your GeoJournal as you read this chapter, write a descriptive paragraph about one of Russia's unique or beautiful physical features. Describe the feature in detail, using your textbook and the Internet as resources to make your descriptions as specific and vivid as possible.



Technology Activity

Using E-mail Locate an e-mail address for a youth organization in Russia. Write a letter requesting information about the land and climate in the youths' area and the effects on their lifestyle. Share the response you receive with your class.



TX TAKS Test Practice

Using the table below and your knowledge of geography, 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.

Arable Land in Selected Countries

	Russia	Canada	United States	France
arable land	8%	5%	19%	33%
permanent crops	0%	0%	0%	2%
permanent pastures	4%	3%	25%	20%
forests and woodland	46%	54%	30%	27%
other	42%	38%	26%	18%

Source: CIA World Factbook 2000

- What factor may help explain why Russia and Canada have a lower percentage of arable land than do the United States and France?
 - Russia and Canada have been settled longer.
 - Russia and Canada extend farther into cold northern regions.
 - Russia and Canada have larger land masses.
 - Russia and Canada are less industrialized.



Test-Taking Tip Study the information shown in the table about land use. Then think about climate regions in the selected countries. Notice similarities or differences between figures for the four countries. Choice C is not relevant, so it can be eliminated.

Geography

Lab Activity

Cleaning Up Oil Spills



▲ Approximately 30 tons (27,216 kg) of oil spilled into the Neva River in October 1999.

Petroleum and water are both natural resources. However, when they mix, they pose a grave danger to the environment. In 1999 a massive oil spill on the Neva River in northwest Russia threatened to poison the water supply of St. Petersburg and damage the Gulf of Finland downstream. Russian officials immediately dispatched vessels equipped with floating barriers to contain the oil

after the ship carrying it ran aground. Cleaning crews used a bio-absorbent, a substance that helps break down oil, to contain the spill and remove much of the oil from the water.

When oil mixes with water, a number of chemical changes may take place. Depending on the movement and temperature of the water and the presence of wind and sunlight, the oil may change its shape, density, and chemical composition. Cleanup crews have a limited number of tools to use against an oil spill. Pumps and sponges may suck up oil if it is not too heavy after mixing with water. Skimmers that look like conveyor belts draw oil off the water's surface. Oil-eating microbes and strong detergents are also used to dissolve oil.

1 Materials

- Large, shallow, rectangular pan about 11 inches (28 cm) long
- Water
- 1 tablespoon vegetable or cooking oil
- String or dental floss, at least 36 inches (91 cm) long
- Ruler
- Timer
- Drinking straw
- 2 paper towels or several cotton balls
- 1 or 2 drops of dishwashing detergent
- Measuring cup
- Writing materials

2 Procedures

In this activity, you will simulate an oil spill in order to observe how oil reacts in water. You also will experiment with two cleanup strategies.

1. Fill the pan about halfway with water, and set the pan on a level surface.
2. Gently pour the vegetable oil into the center of the water.
3. Use the string or dental floss to measure the size (the circumference) of the "oil slick." Record your measurement.
4. Wait 2 to 2½ minutes, and then measure the oil spill again. Record your measurements.
5. Repeat step 4 three more times, until you have five measurements.

6. Use the straw to blow gently across the surface of the water. Blow steadily for about 20 to 30 seconds. Record your observations.
7. Gently shake or vibrate the pan to create a wavelike motion. Do this for about 30 seconds to 1 minute. Record your observations.
8. Set a paper towel or cotton ball on the surface of the water in the pan until it is completely soaked, but do not let it sink.
9. Remove the paper towel or cotton ball, and repeat this step with a fresh paper towel or cotton ball. Record your observations.
10. Now mix the drops of dishwashing detergent into 4 ounces of water. Pour the mixture gently into the middle of the pan. Record your observations.

3 Lab Report

1. Which of the steps was most time-consuming? Why?
2. What did measuring the oil slick demonstrate about the way oil behaves in water?
3. What did blowing on and shaking the water demonstrate about the way oil behaves in rivers, lakes, and oceans?
4. **Drawing Conclusions** Based on your observations, what oil cleanup strategy would you recommend for future oil spills? Why?

4 Find Out More

Look in reference books or check Internet sources for more information about strategies for cleaning up oil spills. Take notes on the different strategies, including the way they work and how successful they are. Make a poster or multimedia presentation of the different strategies and their success rates, and then share your findings with the class.

Did You Know?

Magnets may prove to be an effective tool against the effect of oil spills on wild birds. When oil coats birds' feathers, the birds lose their natural protection against the elements, and they cannot fly. Scientists have discovered that coating bird feathers with an iron powder and then applying magnets removed nearly all the oil in test cases.

◀ *Water movement and air flow can affect the shape and density of an oil spill.*

