

RESOURCE LIBRARY LESSON

Physical Geography of Europe

Students are introduced to the physical geography of Europe and delineate major drainage basins in Europe.

GRADES

6 - 8

SUBJECTS

Earth Science, English Language Arts, Geography, Physical Geography

CONTENTS

2 Activities

ACTIVITY 1: MOUNTAINS, RIVERS, AND VEGETATION OF EUROPE 1 50 MINS

DIRECTIONS

1. Review <u>physical features</u> and their importance.

Ask students to think back to Lesson 1 of this unit, in which they created <u>borders</u> based on the information given on several <u>maps</u>. The features on those maps included religions, <u>mountains</u>, <u>rivers</u>, and languages. Ask: Which of the features on those maps were physical features? (mountains, rivers) Students may understand this distinction, or they might need some clarification about the difference between physical and cultural features. Point out that in the next three lessons of this unit, students will focus on physical features, and that cultural, or human, features will be addressed later in the unit. Ask: How would physical features be important for defining countries? Do you think <u>country</u> borders should line up with physical

features? Why or why not? If students have difficulty answering, prompt them with questions about travel, communication, growing food, and other things that people in every <u>region</u> would need to do.

2. Introduce key vocabulary in the reading passage.

Use the Background and Vocabulary tab in this activity to do some vocabulary pre-work. Read aloud terms and definitions that are critical to understanding the reading passage. Ask students to use them in complete sentences and/or to provide examples of them in order to demonstrate understanding.

3. Have pairs read a passage about mountains, rivers, and <u>vegetation</u> in Europe.

Divide the class into pairs and give each pair a copy of the reading passage Interactions of Land and Water in Europe. Have partners read the passage, underlining or highlighting each proper name of a physical feature of Europe as they read. If students need additional support, project the worksheet and model underlining physical features in the first paragraph.

4. Have small groups locate features from the reading on maps and label them.

Combine pairs to form small groups. Distribute copies of the worksheet Analyzing Interactions of Land and Water, and the maps Natural Vegetation of Europe and Physical Map of Europe, to each small group. Have groups complete Part 1 of the worksheet by locating and labeling features from the reading passage on the maps.

5. As a whole class, compare maps and answer questions about the reading.

Distribute copies of the map Country Borders in Europe to each group. Work together as a whole class to complete Part 2 of the worksheet. Compare the map Country Borders in Europe to the Physical Map of Europe and Natural Vegetation of Europe maps. Then discuss the questions and have students write their answers. Finally, use the map transparencies to show the class how borders and physical features do or do not line up.

6. Have small groups complete a writing assignment.

Have students return to their small groups to complete Part 3 of the worksheet. Ask each group to choose one of the three scenarios and work cooperatively to write a paragraph. Ask each group to present their writing, supporting their points with maps, as needed.

Modification

Have students use the Cornell Note Taking method with the reading passage. <u>Click here</u> to find and download a blank Cornell Note Taking worksheet.

Informal Assessment

Check for student understanding by observing discussion and presentation contributions, and by evaluating completed worksheets and writing. Students should refer to factual information in the reading and to specific geographic locations, features, and borders in their discussions and writing.

Extending the Learning

Have students make connections to mountains, rivers, and vegetation in your local area.

OBJECTIVES

Subjects & Disciplines

• English Language Arts

Geography

• Physical Geography

Learning Objectives

Students will:

- learn the locations of major rivers, mountain ranges, and vegetation of Europe
- explore how these physical features line up with country borders in Europe

Teaching Approach

Learning-for-use

Teaching Methods

- Cooperative learning
- Discussions
- Hands-on learning
- Reading
- Writing

Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
 - Learning and Innovation Skills
 - Communication and Collaboration
- Critical Thinking Skills
 - Analyzing
 - Understanding
- Geographic Skills
 - Acquiring Geographic Information
 - Analyzing Geographic Information
 - Answering Geographic Questions
 - Organizing Geographic Information

National Standards, Principles, and Practices

IRA/NCTE STANDARDS FOR THE ENGLISH LANGUAGE ARTS

• Standard 1:

Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new

information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.

• Standard 5:

Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

NATIONAL GEOGRAPHY STANDARDS

• Standard 1:

How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

• Standard 3:

How to analyze the spatial organization of people, places, and environments on Earth's surface

• Standard 4:

The physical and human characteristics of places

• Standard 7:

The physical processes that shape the patterns of Earth's surface

ISTE STANDARDS FOR STUDENTS (ISTE STANDARDS*S)

• Standard 2:

Communication and Collaboration

Preparation

BACKGROUND & VOCABULARY

Background Information

Climate is the most influential component of the physical environment at the global scale, as it dictates the supply of energy and water at Earth's surface. Europe's temperatures are generally milder than would be expected for its latitudinal location. Europe in general is a well-watered region, receiving adequate precipitation for humid climates; there are no deserts in Europe. Europe has a variety of major vegetation zones, including semidesert, grass steppe, shrub (wooded) steppe, tundra, boreal forest, mountain forest and Alpine meadow, Mediterranean scrubland, and Mediterranean forest, as well as mixed forest. The Alps

mountain range forms part of France, Italy, Switzerland, Germany, Austria, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, and Albania. The Alpine peaks separate European regions and are the source of many of Europe's major rivers, such as the Rhône, Rhine, Po, and many tributaries of the Danube.

Humans have had a negative impact on the zone of mixed forest that once stretched across the continent from Great Britain and Ireland to central Europe. Approximately 80 percent of Europe's land was once forested. But in the early 21st century, forests covered only about 30 percent of the continent. In southern Europe, Mediterranean vegetation is very distinctive. It includes evergreen trees, shrubs, and scrub, or stunted trees and shrubs. The wooded-steppe and grass-steppe vegetation zones are found primarily in southwestern Russia and Ukraine. Semidesert vegetation is found in the dry lowland near the northern and northwestern shores of the Caspian Sea.

Prior Knowledge

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Recommended Prior Activities

None

Vocabulary

Term	Part of Speech	Definition
agriculture	noun	the art and science of cultivating land for growing crops (farming) or raising livestock (ranching).
biome	noun	area of the planet which can be classified according to the plant and animal life in it.
border	noun	natural or artificial line separating two pieces of land.
boreal forest	noun	land covered by evergreen trees in cool, northern latitudes. Also called taiga.
climate	noun	all weather conditions for a given location over a period of time.
coast	noun	edge of land along the sea or other large body of water.
continent	noun	one of the seven main land masses on Earth.

Term	Part of Speech	Definition
	opecen	geographic territory with a distinct name, flag, population,
country	noun	boundaries, and government.
crop	noun	agricultural produce.
ф		area of land that receives no more than 25 centimeters (10 inches) of
desert	noun	precipitation a year.
fjord	noun	long, narrow ocean inlet between steep slopes.
forest	noun	ecosystem filled with trees and underbrush.
geography	noun	study of places and the relationships between people and their environments.
glacier	noun	mass of ice that moves slowly over land.
hydroelectric		
power	noun	usable energy generated by moving water converted to electricity.
latitude	noun	distance north or south of the Equator, measured in degrees.
lowland	noun	slow-flowing river ecosystem usually found in lower altitudes.
m 2 n	noun	symbolic representation of selected characteristics of a place, usually
map	noun	drawn on a flat surface.
mountain	noun	landmass that forms as tectonic plates interact with each other.
mountain	noun	series or chain of mountains that are close together.
range	noun	
ocean	noun	large body of salt water that covers most of the Earth.
peninsula	noun	piece of land jutting into a body of water.
physical features	noun	naturally occurring geographic characteristics.
plain	noun	flat, smooth area at a low elevation.
precipitation	noun	all forms in which water falls to Earth from the atmosphere.
region	noun	any area on Earth with one or more common characteristics. Regions are the basic units of geography.
river	noun	large stream of flowing fresh water.
sea level	noun	base level for measuring elevations. Sea level is determined by measurements taken over a 19-year cycle.
steppe	noun	dry, flat grassland with no trees and a cool climate.
territory	noun	land an animal, human, or government protects from intruders.
trade	noun	buying, selling, or exchanging of goods and services.
tundra	noun	cold, treeless region in Arctic and Antarctic climates.
vegetation	noun	all the plant life of a specific place.

ACTIVITY 2: DRAINAGE BASINS IN EUROPE 1 50 MINS

DIRECTIONS

1. Activate students' prior knowledge and introduce the activity.

Ask: What is a <u>watershed</u>? Explain to students that another name for a watershed is <u>drainage</u> <u>basin</u>—an entire <u>river</u> system or an area drained by a river and its tributaries. Drainage basins can serve as a type of regional boundary or <u>border</u>. Tell students that they will explore connections among countries within a drainage basin to extend and develop the concept of <u>region</u> by establishing the shared characteristics that make this a region.

2. Have students read and discuss a passage about drainage basins.

Distribute the worksheet Drainage Basins and How Rivers Flow. Have students read the passage independently and use it to sketch a drainage basin in the space at the bottom of the worksheet. Then invite volunteers to restate what a drainage basin is in their own words, while sharing the sketch. Elicit student ideas about why rivers are important, and how countries that share a drainage basin might need to cooperate. Discuss any questions they may have. If possible, have students make connections to drainage systems in your local area.

3. Have small groups identify and discuss drainage basins.

Divide students into small groups and distribute a copy of the worksheet Mapping Drainage Basins and Rivers and the maps Physical Map of Europe and <u>Country</u> Borders in Europe to each group. Assign each group a river to explore: Rhine, Oder, Dnieper, Danube, Volga, or Pechora. Then have students complete the worksheet for their assigned river. Encourage students to include in their descriptions the shape of the river on the map, what the scenery is likely to be on its banks, and what types of human activity may be found there. Provide support, as needed. If students have difficulty, you may choose to demonstrate the process of delineating a drainage basin on one river and then ask groups to complete their own. Students may have difficulty with rivers in northern Europe that flow "up" the map, or may mistakenly believe that south is downhill.

4. Have students present their work to the class.

Have each group present their work by showing and describing their basin on their map and answering questions from classmates.

5. Have a whole-class discussion about physical features, borders, and conflicts.

Conduct a whole-class discussion. Remind students that they explored four different physical features in Lesson 3 of this unit: rivers, mountains, vegetation, and drainage basins. All of these features cross country borders in different ways across Europe. Ask: Which borders, if any, would make sense to use as a border between countries? Why? Encourage students to consider the following:

- Mountains and some rivers used to form natural barriers between people because they
 were difficult to cross. Ask: Is that the case anymore? Why or why not?
- Because of how water moves through drainage basins, countries within that basin will be
 affected by each other's water use, <u>pollution</u>, and use of the river. Ask: How can countries
 best cooperate to use rivers and drainage basins in a way that benefits everyone? Why
 might this be difficult?
- Different types of natural vegetation offer different resources to the people who live there. Ask: What benefits might there be to having a variety of different vegetation types in the same country? What problems might this cause?

6. Have students complete a writing assignment.

Distribute copies of the worksheet A River's Role in the History of Europe and the map Natural Vegetation of Europe to each student. Have students complete the worksheet by writing a brief essay, either in class or as a homework assignment.

Modification

Have the class work together to complete the worksheet Mapping Drainage Basins and Rivers for each river: Rhine, Oder, Dnieper, Danube, Volga, and Pechora. If students have difficulty delineating the basins, use the provided map Major Drainage Basins in Europe and only

require students to answer the questions.

Informal Assessment

Have students transfer and apply their knowledge to another continent, such as North America, by following the same steps on a map:

- tracing the length of a river from beginning to end
- tracing the area defined by surrounding mountains
- shading the drainage basin
- listing the countries, states, territories, and/or provinces within the basin
- identifying countries, states, territories, and/or provinces outside the basin that may be linked to it through trade at a port

Ask: How might a city near the mouth of a river and a city 200 miles inland be connected by a river?

Extending the Learning

Students can use the maps that they drew of drainage basins as a basis to research how people have handled sharing the water resources in a particular area. Have students conduct research that answers the following questions:

- Which countries have been able to work together to share natural resources?
- Which countries have encountered conflict because of the intersection between their borders and physical features?
- Why do you think some groups can cooperate while others cannot?

OBJECTIVES

Subjects & Disciplines

Earth Science

• English Language Arts

Geography

• Physical Geography

Learning Objectives

Students will:

- delineate major drainage basins in Europe
- explore how countries within a drainage basin are connected by trade, transportation, and water use
- consider how country borders can intersect physical features in different ways and discuss how this intersection can lead to cooperation or conflict

Teaching Approach

Learning-for-use

Teaching Methods

- Cooperative learning
- Discussions
- Hands-on learning
- Reading
- Writing

Skills Summary

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• Standard 2:

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BACKGROUND & VOCABULARY

Background Information

A drainage basin, or watershed, is a land area from which all precipitation is drained by a stream system consisting of a single, or main, stream and all its tributaries. Drainage basins serve as functional regions. Individual drainage basins are separated by higher terrain or divides. Rivers have an organized channel flow from source to mouth. Water flows down a surface gradient from high elevations to lower elevations, independently of cardinal direction. For example, the Rhine River flows from its source in the Alps downstream in a generally northerly direction to its mouth in the North Sea. The drainage basins of most European rivers lie in mountainous areas that receive heavy precipitation, including snow. Drainage is directly, or via the Baltic and the Mediterranean seas, to the Atlantic and Arctic oceans and to the enclosed Caspian Sea.

Agents of erosion, transportation, and deposition create landforms within a drainage basin. They erode valleys, create waterfalls, meander scars, oxbow lakes, natural levees, floodplains, and deltas. The rivers within a watershed may have different degrees of flow, depending primarily on the source and seasonal availability of water. The major rivers of Europe—Rhine, Danube, Thames, and Seine—are permanent or perennial rivers, existing in well-watered areas and flowing throughout the year. Smaller rivers may be seasonal, depending on rainfall. Some smaller river basins may be located entirely within one country. Most of the major river basins of Europe exist within more than one country. The Danube River is the second longest river in Europe after the Volga River in Russia. Its source lies in the Black Forest mountains of western Germany; it flows for approximately 2,850 kilometers (1,770 miles) to its mouth at the Black Sea. Along its course, the Danube passes through nine countries: Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Romania, and Ukraine.

Prior Knowledge

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Recommended Prior Activities

None

Vocabulary

Term	Part o	of Definition
ieiiii	Speec	
border	noun	natural or artificial line separating two pieces of land.

Term	Part of	Definition
ieiiii	Speech	Demitton
continent	noun	one of the seven main land masses on Earth.
country	noun	geographic territory with a distinct name, flag, population,
		boundaries, and government.
drainage basinnoun		an entire river system or an area drained by a river and its tributaries.
		Also called a watershed.
highlands	plural	whaters are also at all weathers of heard
	noun	plateau or elevated region of land.
lowland	noun	slow-flowing river ecosystem usually found in lower altitudes.
mountain	noun	landmass that forms as tectonic plates interact with each other.
natural		a material that humans take from the natural environment to survive,
resource	noun	to satisfy their needs, or to trade with others.
physical		naturally occurring geographic characteristics.
features	noun	
pollution	noun	introduction of harmful materials into the environment.
rogio p	noun	any area on Earth with one or more common characteristics. Regions
region		are the basic units of geography.
river	noun	large stream of flowing fresh water.
trade	noun	buying, selling, or exchanging of goods and services.
transportation noun		movement of people or goods from one place to another.
tributary	noun	stream that feeds, or flows, into a larger stream.
watershed	noun	entire river system or an area drained by a river and its tributaries.
		NATIONAL



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