

RESOURCE LIBRARY
ACTIVITY : 50 MINS

Drainage Basins in Europe

Students read about and trace drainage basins in Europe. They discuss issues around physical features, borders, and conflicts.

GRADES

6 - 8

SUBJECTS

Earth Science, English Language Arts, Geography, Physical Geography

CONTENTS

7 PDFs

OVERVIEW

Students read about and trace drainage basins in Europe. They discuss issues around physical features, borders, and conflicts.

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/drainage-basins-in-europe/>

DIRECTIONS

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

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

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

What You'll Need

MATERIALS YOU PROVIDE

- Lesson 3, Activity 1 reading passage
- Pencils
- Pens

REQUIRED TECHNOLOGY

- Internet Access: Optional
- Tech Setup: 1 computer per classroom, Projector

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group instruction
- Small-group instruction

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

Recommended Prior Activities

- None

Vocabulary

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

For Further Exploration

Articles & Profiles

- [National Geographic Education: Europe—Physical Geography](#)
- [National Geographic Education: Europe—Resources](#)

Maps

- [NG MapMaker 1-Page Map: Europe](#)
- [National Geographic Education: Europe MapMaker Kit](#)
- [NG MapMaker Interactive: Europe](#)

Websites

- [National Geographic Education: National Teacher Leadership Academy \(NTLA\)](#)



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