



## MAPPING THE WORLD

Explore the fascinating history of mapmaking, from prehistoric maps drawn on cave walls to digital mapping tools.

## CONVERSATION QUESTION

Why are there different types of maps?

## TEACHING OBJECTIVES

- Students will learn about the European exploration.
- Students will learn about types of map projections.
- Students will learn about mapping technologies.
- Students will explain how cultural characteristics affect the movement of ideas.
- Students will use maps to describe the locations of cultural characteristics.
- Students will construct maps to represent and explain the spatial patterns of cultural and environmental characteristics.
- Students will use details from a text to write a historical fiction narrative.
- Students will conduct research and create a multimedia presentation.
- Students will write an analysis.



In addition to supplemental materials focused on core Social Studies skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

## SELECTIONS

- **Mysteries in a Map**  
Expository Nonfiction, ~1050L
- **A Matter of Perspective**  
Expository Nonfiction, ~1150L
- **What Is GIS?**  
Expository Nonfiction, ~1150L

## Mysteries in a Map

pp. 20–21, Expository Nonfiction

Investigate the origins of the first European map depicting the Americas.



## RESOURCES

- How Ideas Move

## OBJECTIVES

- Students will read and analyze a nonfiction article.
- Students will learn about European exploration.
- Students will explain how cultural characteristics affect the distribution of ideas.
- Students will use details from a text to write historical fiction.

## KEY VOCABULARY

- **landmass** (p. 21) a very large area of land, such as a continent
- **cartographers** (p. 21) people who make maps
- **projecting** (p. 21) causing an image to appear on a surface

## ENGAGE

**Conversation Question:** Why are there different types of maps?

Ask students to imagine they are living in Europe during medieval times. Tell them that Europeans have just begun exploring the seas in search of a western passage to Asia. Then ask them what might be surprising about a person from that time finding a copy of a map in a library that showed the Americas. Finally, tell them they're going to learn more about the origin of the first map of the Americas.

## INTRODUCE VOCABULARY

Review the vocabulary words and definitions. Then ask students to use the vocabulary words to make predictions about the topic of the text. If necessary, help students guess the topic by revealing the title of the article. Then remind students to look for the vocabulary words as they read the article.

## READ & DISCUSS

Have students read the article with a partner. Then use these prompts for discussion:

1. What was surprising about the way the Waldseemüller Map depicted the Americas?
2. What was the most likely way the Waldseemüller Map came to include the Americas?
3. What can you conclude about how Europeans expanded their knowledge of landmasses beyond Europe in medieval times?

## SKILL FOCUS: Explain Distribution

**INSTRUCT:** Explain to students that the cultural characteristics of a group—including its language, religion, and customs—influence not only what the group members think is important but how they spread that knowledge. Point out that the article describes the fact that medieval Europeans were exploring and creating maps of unknown regions.

**ASSESS:** Distribute the *How Ideas Move* organizer. Have students work in pairs to identify one specific cultural characteristic (i.e., creating written works on geography or exploring) that impacted how ideas about landmasses were distributed. Then have students complete the graphic organizer to trace the spread of these ideas over time.

## EXTEND

**English Language Arts** Explain that historical fiction portrays believable characters and events in a setting from the past. Ask students to write a one-page historical fiction story about a European explorer who discovers the Americas. Remind students to include details about the voyage and what their characters might see once they spot the Americas.

### How Ideas Move

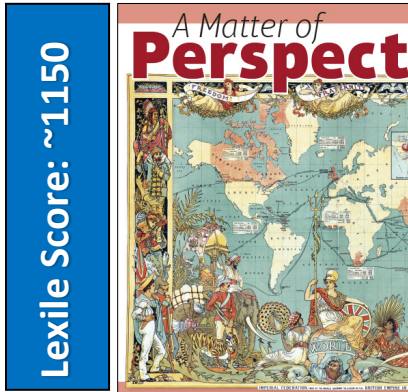
Ancient and medieval Europeans helped to spread ideas about the landmasses of the Earth by exploring and creating geographical books. The chart below shows the names of seven explorers and mapmakers. Complete the chart to analyze the impact of these explorers and mapmakers on our knowledge of the Earth today.

	How did each explorer or mapmaker contribute to our knowledge of the Earth's landmasses?
Ptolemy	
Amerigo Vespucci	
Waldseemüller and Ringmann	
Vasco Núñez de Balboa	
Magellan	
Father Joseph Fisher	

## A Matter of Perspective

pp. 36–38, Expository Nonfiction

All maps are not the same. Explore how maps project the world in different ways and discover the limitations of each type of projection.



## OBJECTIVES

- Students will read and analyze a nonfiction article.
- Students will learn about types of map projections.
- Students will use maps to describe the locations of cultural characteristics.
- Students will conduct research and create a multimedia presentation.

## KEY VOCABULARY

- **projection (p. 37)** a type of map or drawing that shows all the parts of something that is curved, such as the earth, on a flat surface
- **distorted (p. 37)** giving a misleading or inaccurate account or impression of something
- **propaganda (p. 38)** ideas or statements that are often false or exaggerated and that are spread in order to help a cause, a political leader, or a government

## ENGAGE

**Conversation Question:** Why are there different types of maps?

Show students a Mercator map projection of the world. Ask them if they think this is an accurate representation of the size of each country. Then inform them it is not. Point out that landmasses look larger the farther they are from the equator. Finally, invite students to hypothesize ways to accurately map the size of Earth's landforms.

## INTRODUCE VOCABULARY

Review the vocabulary words and definitions. Then ask students to use the vocabulary words to make predictions about the topic of the text. If necessary, help students guess the topic by revealing the title of the article. Then remind students to look for the vocabulary words as they read the article.

## READ & DISCUSS

Have students read the article with a partner. Then use these prompts for discussion:

1. What are some different types of map projections?
2. What are the pros and cons of each type of map projection?
3. How do some maps reinforce political messages?

## SKILL FOCUS: Use Maps

**INSTRUCT:** Explain that different types of maps create different types of distortions of the Earth's landmasses. Review the pros and cons of the Mercator projection with students. Then direct students to the large Imperial Federation map spanning pages 36 and 37.

**ASSESS:** Have students work in pairs to identify the main idea of the map (i.e., Britain is the center of the world because it controls all the regions shaded in red). Then invite pairs to explain how the Mercator projection might contribute to the idea that Britain is the center of the world (i.e., regions it controls that are far from the equator appear very large, suggesting Britain controls most of the world's landmasses).

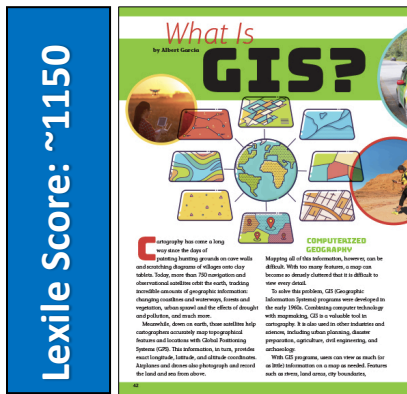
## EXTEND

**Social Studies** Have students conduct research to gather information about the Gall-Peters, Spilhaus, or Equal Earth map projection. Tell students to learn about how it projects landmasses, including how it distorts their relative size. Then have them create a short multimedia presentation on the projection.

## What Is GIS?

pp. 42–43, Expository Nonfiction

Learn about digital GIS (Graphic Information Systems) programs and how they help in the creation of maps.



## OBJECTIVES

- Students will read and analyze a nonfiction article.
- Students will learn about mapping technologies.
- Students will construct maps to represent and explain the spatial patterns of cultural and environmental characteristics.
- Students will write an analysis.

## KEY VOCABULARY

- **cartography** (p. 42) the science or art of making maps
- **satellites** (p. 42) machines that are sent into space and that move around the earth, moon, sun, or a planet to collect information
- **topography** (p. 42) the physical features of an area of land, such as mountains and rivers

## ENGAGE

**Conversation Question:** Why are there different types of maps?

Invite students to explain what maps show. Make sure students understand maps can show both environmental and cultural characteristics. Ask students to hypothesize what the benefits of putting two maps over one another might be. Then tell them they're going to learn about a digital mapping tool called GIS that does just that!

## INTRODUCE VOCABULARY

Review the vocabulary words and definitions. Then display the sentences below. Have students use the vocabulary words to complete the sentences. Discuss answers. Then remind students to look for the vocabulary words as they read.

- \_\_\_\_\_ sometimes requires using \_\_\_\_\_ to gather information.
- The \_\_\_\_\_ of the region was difficult to map without the use of \_\_\_\_\_.

## READ & DISCUSS

Have students read the article with a partner. Then use these prompts for discussion:

1. What is a GIS map?
2. How do you use GIS maps in your daily life?
3. What are the benefits of using a GIS map over a printed map?

## SKILL FOCUS: Construct Maps

**INSTRUCT:** Tell students they will be working in pairs to construct a two-layer GIS map of the United States. Explain that the top layer will show the borders of states and the bottom layer will show physical features within the states, such as landforms, elevation, and waterways. (You'll need to access and print or project both a physical and political map of the United States for students to use as a reference point.)

**ASSESS:** Have student pairs work together to create the base (i.e., physical) layer. Then provide plastic wrap to each pair and instruct them to secure the first layer of the map to their desk and secure the plastic wrap over the first layer. Have them use a marker to draw on the plastic wrap to make the second layer. Walk around to monitor how well pairs are creating their map-layers. For a fun activity, quiz students on what states have certain physical features.

## EXTEND

**Social Studies** Remind students that the article discusses how researchers can use GIS maps to analyze spatial patterns. Have students choose one type of social problem or issue (limited water and food supply, the need for energy, pollution, etc.) and write a one- or two-paragraph analysis of how using GIS mapping technology could help researchers analyze and solve the problem.