

Lesson 4a

Explaining Relationships in Scientific and Technical Texts



Learning Target

Explaining the relationships or interactions between events and ideas will help you develop a deeper understanding of scientific or technical texts.

► **Read** When you read **scientific texts**, you learn about the natural world. If you read about why lightning strikes or how electricity works, you're reading a scientific text. When you read **technical texts**, you are learning to make or do something. If you read the directions for using a cell phone, you are reading a technical text. Both scientific and technical texts describe the **relationships** and **interactions** between events, ideas, or concepts.

Read the passage. Underline any relationships or details that seem important.

ELECTRICITY IN MOTION

You're pretty familiar with what electricity can do. You flip a switch and a light bulb glows. You push a button and a fan whirs to life. Turning on an electric oven makes it heat up. But why do you get these results? What do a glowing light bulb, a spinning fan, and a hot oven have in common?

The answer is current electricity, or the steady flow of bits of matter called electrons. You can't see electrons. They're so small that even the best microscopes won't show one to you. But while electrons aren't visible, you can see the effects of their motion. Light bulbs, fans, ovens—all of these work because you've let the electrons flow.



► **Think** Consider what you know about scientific and technical texts. What process does the passage describe? How does one event lead to another? Complete the organizer, and then write a short explanation of what you learned about electricity.



Explanation of the Process

► **Talk** Share your explanation with a partner.

- What events do you include in your organizer?
- What kind of relationships do you see between one event and another?
- How does understanding one event help you understand another event?



Academic Talk

Use these words and phrases to talk about the text.

• relationship	• interaction
• scientific text	• technical text

Lesson 4b

Explaining Relationships in Historical Texts



Learning Target

Explaining relationships between people, events, and ideas will help you understand what matters in historical texts.

► **Read** When we read **historical texts**, we learn about people, events, and **ideas**. Some historical texts describe simple **cause-and-effect relationships** that tell what happened and why. Other historical texts explain how one cause led to many effects, or how several causes produced one important effect.

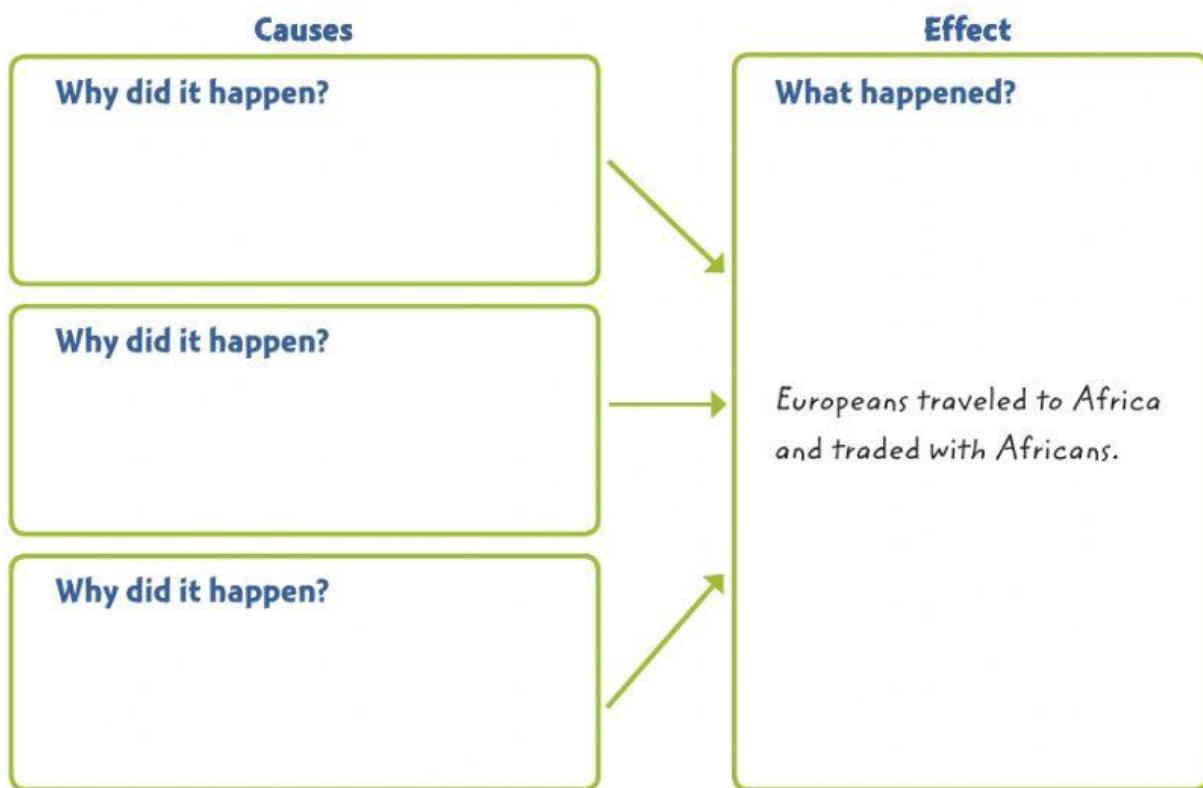
Read the passage below. As you do, try to identify relationships between causes and their effects.

During the Middle Ages, much of Africa was a mystery to Europeans. A few travelers, however, told tales of wealthy African kingdoms and endless supplies of gold. But was this true? Could fortunes be made there?

By the 1400s, improvements to European sailing ships made long ocean trips possible. So, Portuguese sailors began exploring along Africa's coastline. They set up trading posts in ports along the way, and other Europeans soon followed. This was because the Portuguese had discovered the stories to be true. Indeed, there was wealth to be had. Europeans could trade their goods for salt, spices, ivory, and yes, even gold!



► **Think** Consider what you've learned about reading historical texts. According to the passage you just read, what happened? And what caused it to happen? Use the *cause-and-effect organizer* below to show how three causes led to one important effect.



► **Talk** Share your cause-and-effect organizer with a partner.

- Did you list all the same causes?
- Do all the causes you list actually lead to the effect?
- Are some of your causes not events but ideas?



Academic Talk

Use these words and phrases to talk about the text.

• cause and effect	• historical texts
• ideas	• relationships