Britannica Expedition:LEARN!

Teacher Toolkit

Cause and Effect: Grades 3–5

OVERVIEW:

Recognizing cause-and-effect relationships in informational texts can be a challenge for many students, since it requires them to not only comprehend what they are reading, but to draw conclusions and make inferences. Teaching students how to identify and evaluate cause-and-effect relationships in science and social studies supports students in developing both their reading comprehension and content knowledge as students consider how ideas, events, and concepts within a text are related. Cause and effect is one of the most common ways authors organize the information within a text, so the more practice students have with recognizing these relationships, the better they can comprehend the various texts they will encounter in the content areas.

In social studies, recognizing cause-and-effect relationships is an important piece of analyzing historical events to explain why things happened as they did. It can also help historians predict what might happen in the future.

Cause and effect is a central theme in science, as scientists work to explain how things function. Cause and effect helps us make sense of the world around us, answering questions such as "Why do plants grow towards the Sun?" and "Why is the sky blue?" Teaching students how to identify and explain cause and effect in science helps them see how one thing leads to another.

Mini-Lesson I

Review the Concept of Cause and Effect (15 minutes)

Background: By the time students get to upper elementary grades, they should have an understanding of cause and effect. However, many students would benefit from a review of these concepts, including an explanation of cause and effect in the context of science or social studies. The following lesson reviews the definitions of *cause* and *effect* and provides students with an opportunity to practice identifying each.

- Introduce the vocabulary to students:
  - *cause*: reason, action, or motive that brings about a reaction; answers the question, "Why did it happen?"
  - *effect*: the result or reaction; answers the question, "What happened?"
- Emphasize the importance of learning to recognize cause-and-effect relationships by sharing how it helps students better comprehend informational texts. Also emphasize how historians or scientists use it in their work.

- Share with students that they will practice identifying cause-and-effect relationships using pictures. Model the practice by displaying an image from an *Expedition: Learn!* lesson. The following teaching suggestion is based on the image "Plastic on the Beach" on page 5-Build in the *Expedition: Learn!* lesson "What Is Recycling?"
- Display the image, and ask students to consider what the image shows. Strategically call on students to share, and then synthesize their responses, writing them below the displayed image. For example:
    - *Event or situation: Plastic trash covers the beach.*
- Reinforce that every event or situation has a cause (why it happened) and an effect (what happened as a result). These effects can then be the cause of other events, forming a chain. Explain that students will discuss possible causes and effects related to the picture. Model the process, recording the sentences. Consider using different color markers to distinguish between the cause and effect portions of the sentence. For example:
    - *There were no trash cans on the beach, so people threw their plastic bottles on the ground.*
    - *The bottles were left on the beach, so the kids picked them up and recycled them.*
- Invite students to turn and talk with a partner to think about a cause-and-effect statement they can make about the image. As needed, provide the following sentence frames to support students:
    - Because ____, ____.
    - As a result of ____, ___.
- Call on volunteers to share, adding their responses to the displayed image.
- Debrief by asking students to reflect on keywords that signal the relationship between the two parts of their sentences. Emphasize that these are signal words and phrases (*as a result, because, due to, if, when*) that help us find causes and effects when we read.
- For additional practice, place students into small groups. Give each group an image related to a topic being discussed in class. As a group, students generate as many cause-and-effect statements about the picture as they can.

Mini-Lesson II

Cause and Effect Within Historical Events (30 minutes)

Background: Learning to identify and evaluate cause-and-effect relationships in social studies is an important skill that helps students understand and explain the past. Many of the events in history are complex, with multiple causes and effects, and it is not uncommon for students to misinterpret these relationships. Providing students with an organizer can help them sort their thoughts as they read so they can more easily explain the relationship after reading. The following teaching suggestions are based on the *Expedition: Learn!* lesson "What Was the Triangular Trade?"

- Provide each student with a **Cause and Effect organizer**, or invite students to create one in their notebook.
- Introduce the organizer and set a purpose for reading. Share with students that they are going to learn about the trade route that emerged during colonization and the Age of Exploration that moved goods and enslaved people between Europe, Africa, and the Americas. Explain that as they read, students will analyze what caused the triangular trade to develop and evaluate the impact, or effect, it had.
- Invite students to record the event "The emergence of the triangle trade route" in the middle of their organizer.
- Model the process by reading aloud the article, strategically stopping to highlight details that you can add to the organizer. Consider the following stopping points:
    - **After the title:** Emphasize to students that the title "How the Triangular Trade Started" gives a clue that the article will focus on the causes of the triangular trade. Emphasize that authors organize the information they present in logical ways, and that might mean giving all the causes in one article and the effects in another. Share that paying attention to the title and organization of the text helps students focus while they read.

- **After the first paragraph:** Highlight the sentence, "A system known as the triangular trade solved this problem," and share that this sentence gives a clue that the author introduced a cause. Skim the paragraph and think aloud while recording the following on the organizer under "Causes":
  - *Sending goods long distances was difficult and slow.*
- **After the first section:** Think aloud to summarize the cause presented in the section "Arriving in the Americas," adding to the organizer as you do.
  - Think aloud: *Explorers in America, found a wealth of resources they wanted to bring back to Europe. In addition, they realized they could trade some of these resources for gold in Africa.*
  - Record under "Causes": *Wealth and Money—Explorers wanted to bring resources back to Europe that they could sell either at home or in Africa for gold.*
- **After the section: "The Columbian Exchange":**
  - Think aloud: *The event we are focusing on is the triangular trade route. This section focuses on the Columbian Exchange. At this point, I am unclear if the two are connected, so I am not going to add anything to my organizer. But I will jot a reminder to myself to revisit this idea after I finish the article.*
  - Model recording on a sticky note or in the margins: *Effect of Columbian Exchange → animals and plants spread from one place to another and diseases were introduced to Indigenous peoples in the Americas. Are these effects connected to the triangular trade?*
- **After the section "The Triangular Trade":** Think aloud to highlight that this section discusses a number of effects of the triangular trade. Emphasize that you also learned in this section that the Columbian Exchange was part of the triangular trade, so that means that the effects you identified in the previous section can be added to your organizer. Model skimming the section to summarize the effects that are mentioned and add them to the organizer. For example:
  - *Animals and plants spread between the Americas, Europe, and Africa.*
  - *Diseases were introduced to American Indians.*
  - *Enslaved Africans were taken from their homes and brought to the Americas.*
  - *Some Europeans and white Americans became wealthy.*

- Invite students to work with a partner to practice identifying causes and effects as they read the second article, "Effects of the Triangular Trade." Emphasize that the title gives a clue to what is in the passage and that this should focus their attention. Share that students should read with a partner, stopping at the end of each section to add any causes or effects to their organizer.
- Debrief the task, strategically calling on pairs to share what they added to their organizers. For example:
  - *Ideas, beliefs, and ways of doing things spread across the world.*
  - *Animals, such as horses and oxen, were brought to the Americas, which made farming and finding food easier.*
  - *Corn and potatoes were introduced in Europe, Africa, and Asia. These crops reduced food shortages.*
  - *American Indians and enslaved Africans shared their skills.*
  - *The demand for farmland led to Europeans taking land from Indigenous peoples.*
  - *An increase in farming led to a demand for labor and an increase in enslaved Africans being brought to the Americas.*
- As time allows or for an extension, challenge students to classify the effects as positive or negative. Alternately, invite students to summarize the causes and effects by writing a clear paragraph about the emergence of the triangular trade.

Mini-Lesson III

Cause-and-Effect Chains in Science (30 minutes)

Background: Cause and effect is a critical thinking skill that demonstrates an understanding of a relationship between two or more events. Scientists study cause-and-effect relationships all the time because events take place and generate observable patterns. For students, learning how to identify and evaluate cause-and-effect relationships can help them recognize and ask questions about the patterns they observe. Students are introduced to cause and effect in the early grades; however, as they move into upper elementary grades, these relationships become less obvious and require students to make inferences. One way to help students recognize how cause-and-effect relationships lead to patterns is to focus on cause-and-effect chains, or a series of interconnected events/reactions. The following teaching suggestions are based on the article "Animals Respond to Their Environment" in the *Expedition: Learn!* lesson "Animal Responses."

- Introduce and distribute the **Cause-and-Effect Chain organizer**. Review the concept of cause and effect, emphasizing how identifying and analyzing cause-and-effect relationships can help students recognize patterns and explain why things happen the way they do.
- Introduce the article "Animals Respond to Their Environment," sharing that students will read the passage once through to determine the cause-and-effect relationship they should be looking for.
- Conduct a first read of the article aloud, stopping as needed to monitor student comprehension and highlight key vocabulary.
- After reading, facilitate a discussion regarding the gist of the article: that animals have senses that gather information to help them survive.
- Explain to students that you will reread the text to focus on the cause-and-effect chains that are explained. Reread the section, stopping to think aloud and add information to the organizer. For example:
    - After the second paragraph in the section, think aloud about how the section describes the effect of what happens when the cat's whisker senses something in the environment. Model adding the following to the first row of the organizer.
        - *The whiskers sense an enemy → whiskers are attached to cells that send information to the brain → the brain processes and sends a message that the cat should run away.*
    - After the third paragraph, think aloud to summarize the cause-and-effect chain and add to the organizer.
        - *The days get colder and shorter → animals' brains sense the change → animals' behavior changes (they move or hibernate)*
- Invite students to pair up with a partner. Assign each pair (or allow them to choose) one of the following animals: frog, snake, bird, or gecko. With their partner, students should reread the sections "Finding Food" and "Staying Safe" and then complete the cause-and-effect chain on the organizer for their animal.
- Debrief, inviting pairs to share out. Sample cause-and-effect chains students may identify include:
    - *Frog: frog's eyes sense a movement → brain processes → frog's tongue snaps out and catches the food*
    - *Snake: snake uses tongue to pick up scent → brain processes scent as an animal that is a threat → snake moves and hides*
    - *Bird: receptors in a bird's eye sense a large animal → brain processes as threatening → bird flies away*
    - *Gecko: animal catches gecko by the tail → brain processes → tail falls off*
- Share with students that scientists use these relationships to identify patterns that can be used to explain the world or phenomena. Invite students to study the information on the organizer and discuss with a partner to draw a conclusion about a pattern they chain reveals.
- Strategically call on pairs to share. Synthesize responses and add to the organizer. For example:
    - *Animals gather information from the environment using their senses. This information is sent to the brain, where it is processed. The brain sends a signal to the animal of how it should respond, keeping the animal safe.*

Check for Understanding

If you observe ...	Then try ...
students having trouble distinguishing between cause and effect	asking students create a visual timeline of the events. Focusing on chronology can help students see which detail came first, which can help them distinguish between the two.
students struggling to identify the cause or effect	teaching students signal words to look for. For example: *after, because, before, if, then, since, so.*

Cause and Effect

Cause

Cause

Cause

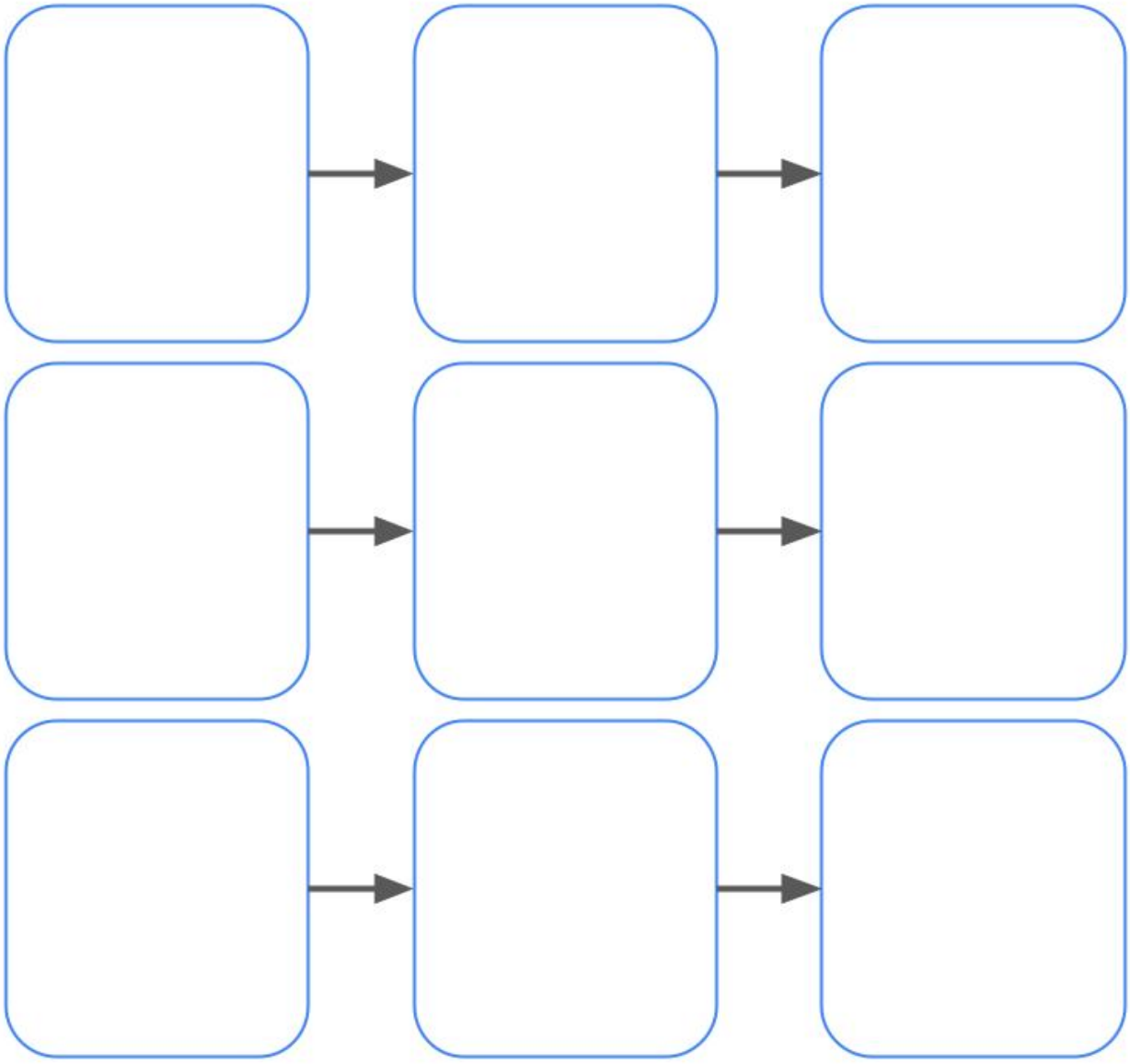
Event

Effect

Effect

Effect

Cause-and-Effect Chain



What patterns can you identify?