



# Cause and Effect: Grades 6–8

## OVERVIEW:

By the time students enter middle school, they have likely been introduced to the basics of cause and effect and are now ready to deeper into the skill. Both science and social studies understanding relies on students' ability to identify and evaluate casual relationships, which means that they need to be exposed to more complicated cause-and-effect relationships. Not only does this help students understand the content they are learning, but it also helps them make sense of the type of causal relationships they see in the real world.

## Mini-Lesson I

### Determine the Validity of Causal Relationships (20 minutes)

**Background:** In a world full of information and misinformation, it is essential that students don't just spend time identifying cause and effect but also consider whether the causal relationship makes sense and is valid. This helps students learn to determine the validity of sources, and it also helps them better evaluate the conclusions they draw about cause-and-effect relationships. The following mini-lesson provides specific teaching suggestions for modeling this strategy using the article "The Greenhouse Effect and Global Warming" in the *Expedition: Learn!* lesson "Climate Change." However, instruction can be adjusted to align with a different topic. Prior to teaching this lesson, prepare three to five sentences that correlate with the topic being taught.

- Reinforce the importance of determining causal relationships in science and social studies texts, emphasizing how these relationships can help make meaning of the past and explain how the world works.
- Stress the importance of being a critical consumer of information in a world where it is easy to post information and there is a wide variety of media available on the Internet. Share that in order to prove their views, authors sometimes present false or inaccurate causal relationships.
- Display and read aloud a series of causal sentences related to the passage students will be reading, some of which are true and some of which are false. For example:
  - True: Without the greenhouse effect, Earth would be too cold to support life as we know it.
  - True: Human activities, such as burning fossil fuels, have increased the concentration of carbon dioxide in the atmosphere, leading to global warming.
  - False: The greenhouse effect occurs because the walls of Earth's atmosphere trap warm air inside
  - False: Methane, one of the naturally occurring greenhouse gases, is released only through human activities, such as agriculture.
  - False: Global warming is caused by natural processes like volcanic eruptions, which have increased the concentration of greenhouse gases.

- Explain to students that some of these sentences present accurate causal relationships while others are false. Share that their task is to read the article and determine which are true and which are false, revising the false sentences so they are true.
- Walk students through an example. Share the following false sentence, and then think aloud to explain the steps: "If it is difficult to see, you should turn off the lights."
  - Explain that the first step is to determine if the sentence is accurate or not. Share that you know this sentence doesn't make sense, because turning off lights makes it harder to see.
  - Explain that if the sentence is inaccurate, they should rewrite the sentence so it is true. For example:
    - *If it is difficult to see, you should turn on the lights.*
- Invite students to pair up and read the article "The Greenhouse Effect and Global Warming." Ask students to then determine if the provided sentences are accurate or inaccurate and rewrite the inaccurate sentences.
- Monitor partner discussions and debrief, calling on pairs to share. For example:
  - *The greenhouse effect occurs when greenhouse gases absorb infrared radiation released from Earth's surface, keeping the lower atmosphere warm.*
  - *Methane is released naturally by processes in environments with low oxygen, such as swamps and by livestock as a result of digestion.*
  - *Global warming is primarily caused by human activities, such as the burning of fossil fuels, which have significantly increased the concentration of greenhouse gases like carbon dioxide.*
- Debrief the task, emphasizing the importance of evaluating causal relationships presented by authors.

## Mini-Lesson II

### Multiple Causes and Multiple Effects (40 minutes)

**Background:** When students are first introduced to cause and effect, they are often presented with the inaccurate idea that for every cause there is only one effect and vice versa. Reading within the disciplines of science and social studies requires students to understand that there are multiple causes and multiple effects. In science, teaching students to analyze multiple causes and effects helps them understand phenomena. In social studies, it helps them see the complexity of events and understand why some events were more pivotal than others. The [Cause and Effect organizer](#) guides students to explore pivotal moments, figures, and innovations through three critical lenses: "What Happened," "Why It Happened," and "How It Impacted" both society and subsequent events. This approach fosters students' close reading and critical analysis skills. Students are encouraged to identify the most pivotal elements in a text and assess their underlying causes and long-term effects. The expected outcome is a deeper understanding of history and its continuous influence on the present and future. The following mini-lesson provides specific teaching suggestions for modeling this strategy using the article "Leaving the South" in the *Expedition: Learn!* lesson "The Great Migration, 1915-1940." However, instruction can be adjusted to align with a different topic.

- Invite students to read a text independently or collaboratively through the lens of "What Happened." This helps students focus on and evaluate the critical moments to determine which are most important.
- After the initial reading, students should participate in a discussion to evaluate the key events so they can determine the most impactful event, moment, or idea from the text. Ask students to record this in the middle box, labeled "What Happened: Critical Event." For example:
  - *Two million Black Americans moved from the southern U.S. to cities in the North during the first wave of the Great Migration.*
- Invite students to conduct a second read of the text to analyze the causes and effects of the event. As they read, students should complete "Why It Happened" (the causes) and "Impact" (the effects) boxes. For example:
  - Why It Happened:
    - *Black Americans in the South were experiencing poverty and exploitation.*

- *Jim Crow laws, racism, and lynching threatened the lives and well-being of Black Americans.*
- *Job shortages in the North were advertised as paying more than four times the daily rate of farm work in the South.*
- Impact:
  - *White Americans forced Black Americans to live in rundown housing, often in undesirable neighborhoods.*
  - *Black Americans organized politically and produced brilliant art. Individuals, white mobs, and terrorist groups, such as the Ku Klux Klan, destroyed property, and injured and killed Black Americans in the North and South.*
- After reading, students should hold a collaborative discussion (either in pairs or groups) to share their thinking and learn from others.

## Mini-Lesson III

### Correlation vs. Causation (40 minutes)

**Background:** Cause and effect is a fundamental theme in science. It explains how actions or events (causes) lead to certain outcomes or results (effects). This helps scientists understand why things happen, predict future outcomes, and even adjust variables to achieve specific results. From tiny atomic interactions to large-scale environmental changes, cause and effect is central to how we understand the world. In middle school, students dig deeper into these relationships, learning to distinguish between cause-and-effect relationships and correlational relationships. They also learn that correlation doesn't always mean causation, an important point in developing critical thinking. The [Correlation vs. Causation organizer](#) helps students identify causal relationships and recognize when two events are correlated but do not necessarily have a cause-and-effect relationship. The following lesson provides specific teaching suggestions for modeling this strategy using the article "Comparing Epidemics and Pandemics" in the *Expedition: Learn!* lesson "Epidemics and Pandemics." However, instruction can be adjusted to align with a different topic.

- Remind students of the definitions of causation and correlational relationships, using everyday examples that emphasize the differences between the two.
- Invite students to read the article "Comparing Epidemics and Pandemics," paying attention to examples of causal and correlational relationships. Walk students through an example of both a causal relationship and a correlational relationship and add each to the organizer. Remind students to check off "Correlation" or "Causation" for each example when filling out their organizers. For example:
  - Causation:
    - Text (Level 4): *"Ebola initially spread from humans to animals, and then it spread from person to person through contact with infected body fluids."*
    - Causation: *Contact with infected body fluids causes the spread of Ebola from person to person.*
    - Explanation: *The direct contact with body fluid leads to the transmission of the disease.*
  - Correlation:
    - Text (Level 4): *"While nearly every region of the world was affected by the COVID-19 pandemic, some regions experienced outbreaks at different times than others."*
    - Correlation: *Different outbreaks happened in various regions at different times, but this does not mean that one outbreak caused the others.*
    - Explanation: *The spread of COVID-19 occurred globally in waves, but the timing of outbreaks in various regions is correlated, not caused by each other.*

- Invite students to pair up and complete a second read of the article. Ask pairs to find one more example of a causal relationship and one more example of a correlational relationship and add them to their organizer. For example:
  - Causation:
    - Text (Level 4): *"[Smallpox] affected the Indigenous people more severely because they had not been exposed to it previously and therefore did not have any immunity."*
    - Causation: *Lack of previous exposure causes severe impact because Indigenous people had no immunity.*
    - Explanation: *The absence of immunity directly results in higher vulnerability to the disease.*
  - Correlation:
    - Text (Level 4): *"There have been several pandemics of the influenza virus throughout history. Pandemics of influenza often occur when a new strain of the influenza virus evolves and spreads rapidly through the population."*
    - Correlation: *The occurrence of pandemics throughout history and the evolution of new strains of influenza are correlated events, but the fact that pandemics have occurred in the past does not cause a new strain to evolve.*
    - Explanation: *New strains of influenza may occur at the same time as pandemics. However, the historical occurrence of pandemics is correlated with new viral strains, but does not necessarily cause them.*

## Check for Understanding

**If you observe ...**

**Then try ...**

**students struggling to identify if something is causal**

asking students to find evidence in the text to support the claim.

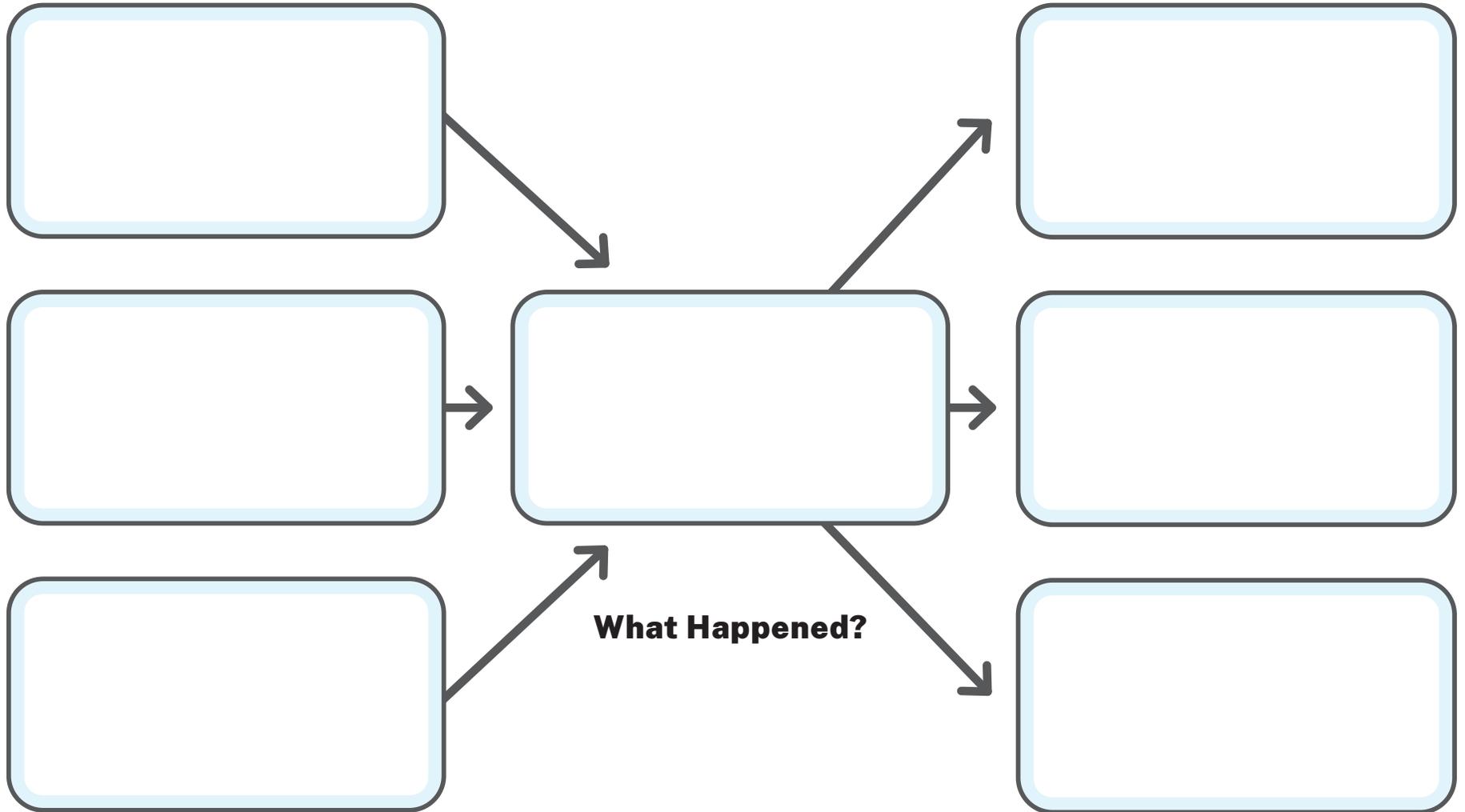
**students struggling to determine if something is a causation or a correlation**

inviting students to think about whether the event directly led to another or if these events simply happen together.

## Cause and Effect

**Why It Happened**

**Impact**



## Correlation vs. Causation



**Text**

**Correlation or Causation?**

**Explanation:**



**Text**

**Correlation or Causation?**

**Explanation:**



**Text**

**Correlation or Causation?**

**Explanation:**