

Lesson 4 Describing Cause and Effect



Understanding cause-and-effect relationships will help you understand how and why events happen.

Read A heavy storm hits, and a large tree falls. The storm is the **cause**, or the reason the tree falls. The fallen tree is the **effect**, or what happens as a result of the storm. The connection between these two events is an example of a cause-and-effect **relationship**. Understanding cause and effect can help you see how events and ideas are related.

Writers often use words such as *because*, *if/then*, *since*, *so*, *therefore*, and *as a result* to signal and explain a cause-and-effect relationship.

Read this cartoon. What cause-and-effect relationship do you see?



Henry got a balloon at the party.

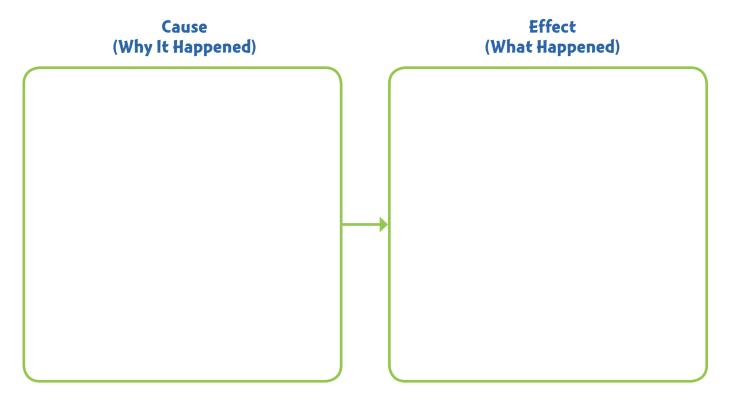


Henry blew up the balloon.



The balloon popped because Henry blew it up too much.

Think Look at the cartoon again. Fill in this cause-and-effect chart to tell what happened.



Write one or two sentences describing what happened. Use words such as *because, so,* or *as a result* to show cause and effect.

Talk Imagine there is a fourth box in the cartoon. What do you think the cat would do? Why? Describe that cause and effect. Use a signal word in your description.

Academic Talk

Use these words to talk about the text.

cause

- effect
- relationship

CIOUCY of Cats and Dogs by Nicole Sheffler

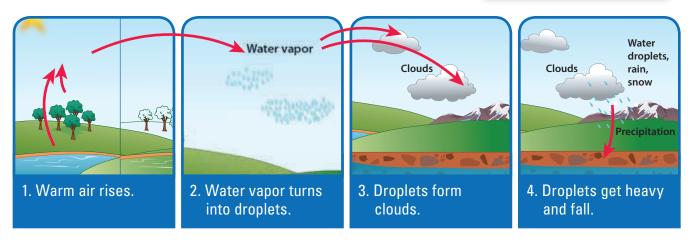
- You may have heard the saying, "It's raining cats and dogs out there!"
 But what's really going on up in the sky? Read on to find out.
- Rain comes from clouds. But where do the clouds come from? First, it's important to understand that all air contains water. This invisible water is called water vapor. When warm air rises, it cools down. Cool air can't hold as much water vapor as warm air. So the vapor grabs a ride on tiny pieces of dust in the air. The vapor forms water droplets around the bits of dust. A cloud is formed when billions of these water droplets come together.
- Inside a cloud, the water droplets move around very quickly. When they move they may bump into each other. As a result, they may stick together. If they stick together, then they start to get bigger.

When they get bigger, they get heavier. Sometimes they get too heavy for the cloud to hold them. Then they fall to the ground as rain. If it's cold outside, then they fall as snow.

4 Much of this rain and snow falls all the way back down to the ground. Then the whole process starts over again.

Close Reader Habits

Underline words and phrases that signal cause and effect. How do they help you understand how the ideas are connected?



Explore

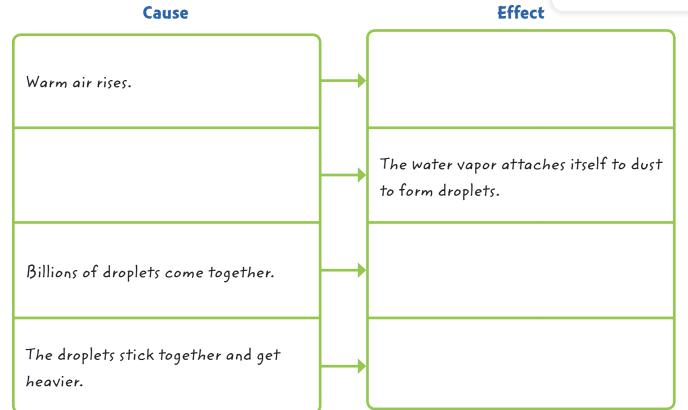
How do cause-and-effect relationships help explain how rain is formed?



Think

1 Finish this chart to show cause-and-effect relationships from the article about rain.

When you read, pay attention to how and why things happen. This will help you spot causes and effects.



Talk

Work with a partner to explain each cause-and-effect relationship from the chart. Use signal words to show how the ideas are connected.



Write

Short Response What happens inside a cloud that causes rain or snow to fall? Use signal words to explain the cause-and-effect relationship. Use the space provided on page 58 to write your answer.

HINT Begin by making a list of the key details in paragraph 3 of the article.



Frozen Deserts

by Heidi Deal, AppleSeeds

- In spite of our image of deserts, some are freezing cold and covered with ice and snow. Cold deserts exist all over the world. They are found in Asia, Africa, South America, China, and even the United States.
- The coldest place on Earth, Antarctica, is considered a desert. It gets very little snow or rain. When it snows, the snow never melts. Instead, it forms ice sheets that build up over time. This creates ice shelves and icebergs. It's too cold for plants. Only a few mosses and algae grow there. And people can't live there for long periods of time.
- Another frozen desert, the Gobi, reaches from Mongolia to China. It is still expanding. The Gobi Desert is called a rain shadow desert. A large mountain range, the Himalayas, blocks the wet weather from reaching the area. Heavy winds whip through the Gobi plains. (That may explain why there's no sand there. Instead, the landscape is mostly bare rock with little plant life.) Temperatures are extreme. It isn't covered in

ice like Antarctica is. But the Gobi can get as cold as 40° F below zero in the winter. In the summer, it can get as hot as 122° F.

Brrrr. It's the desert, but I'm freezing!

Close Reader Habits

Underline sentences that show the effects of extreme cold in Antarctica.

Think

1 This question has two parts. Answer Part A. Then answer Part B.

Part A

In Antarctica, why do ice sheets build up over time?

- **A** because Antarctica gets very little snow or rain
- **B** because when it does snow, the snow doesn't melt
- **C** because there are few plants to stop the ice from forming
- **D** because there aren't enough people to break up the ice

Part B

What are **two** other effects of the extreme cold in Antarctica?

- **A** Ice shelves and icebergs form.
- **B** The plants become tougher and stronger.
- **C** It snows all the time.
- **D** Strong winds blow away any snow.
- **E** People can't stay there long.
- **F** There is no snow.

Talk

2 Reread paragraph 3 and discuss with a partner what the Gobi Desert looks like. What is one possible reason that there is no sand in the Gobi Desert?



Write

Short Response Why is the Gobi Desert a desert? Explain at least two cause-and-effect relationships that might have caused this. Use the space provided on page 59 to write your answer.



Remember that one cause can have many effects, and one effect may have many causes.

HINT What effect do the Himalayas have on the area where the Gobi Desert formed?







Write Use the space below to write your answer to the question on page 55.

Cloudy with a Chance of Cats and Dogs

3	Short Response What happens inside a cloud that causes rain
	or snow to fall? Use signal words to explain the cause-and-effect
	relationship.

HINT Begin by making a list of the key details in paragraph 3 of the article.



Don't forget to check your writing.



Write Use the space below to write your answer to the question on page 57.

from

Frozen Deserts

3	Short Response Why is the Gobi Desert a desert? Explain at
	least two cause-and-effect relationships that might have
	caused this.

HINT What effect do the Himalayas have on the area where the Gobi Desert formed?

Check Your Writing

	Did	you	read	the	prompt	carefu	lly?
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- ☐ Did you put the prompt in your own words?
- ☐ Did you use the best evidence from the text to support your ideas?
- ☐ Are your ideas clearly organized?
- ☐ Did you write in clear and complete sentences?
- ☐ Did you check your spelling and punctuation?



WORDS TO KNOW

As you read, look inside, around, and beyond this word to figure out what it means.

conditions



A soft rain is falling on the roof. You smile. Suddenly, the sound gets louder. It sounds like golf balls are bouncing off the roof. You race to the window. Outside, round balls of ice cover the ground. It is hailing! How did rain turn into hard hail in a matter of seconds?

Inside a Storm Cloud

It actually takes longer than a few seconds for hail to form. It all starts with a storm cloud. Storm clouds are made of water droplets. Large storm clouds are both very wide and very tall. At the top, air is much colder than it is lower down. Raindrops start to form at the bottom of the cloud, where it is warmer.

Journey of a Raindrop

As wind moves the storm cloud, it also moves some of the raindrops inside of it. Some of the raindrops move toward the top of the cloud. If the raindrops meet the very cold air there, then they turn to ice. These new "ice drops" get heavier. As a result, they fall to the ground as hailstones.



Wind blows raindrops up into a colder level of the cloud.



Raindrops freeze and become hailstones.

Clear and Cloudy Hail

Some hail is very clear. Other hail looks like pieces of white chalk. When the hailstone is clear, it is because there is little air in it. That happens when the raindrops freeze slowly. Then the air bubbles in the water have time to escape. Milky looking hailstones have many small air bubbles. That happens when the air at the top of the cloud is super cold. That cold air turns the raindrops into ice right away. The air bubbles are trapped inside.

Hailstones of Every Shape and Size

Sometimes, strong winds move up through a cloud. The wind can pick up the falling hailstones and push them back up. At the top, the hailstones meet the cold air again. There they get a new coat of ice. In a strong thunderstorm, that can happen several times. When you look carefully at a hailstone, you may see some rings. Each ring is one layer of ice. If you count the rings, then you will know how many times the hailstone has made the trip to the top of the cloud. This up-and-down movement causes hailstones to have very unusual shapes. It also makes the hailstones bigger. Some hailstones can be the size of a pebble. Other hailstones can be larger than a baseball!

Next time you see hail on your lawn, pick some up and look at it closely. It may have quite a story to tell!





Think Use what you learned from reading the selection to respond to these questions.

1 This question has two parts. First, answer Part A. Then answer Part B.

Part A

How do raindrops become hailstones?

- **A** Warm clouds form hailstones.
- **B** Raindrops in the cold air become ice.
- **C** The wind makes hailstones.
- **D** The soft rain makes hailstones.

Part B

Which sentence from the text **best** explains what causes raindrops to turn into hail?

- **A** "If the raindrops meet the very cold air there, then they turn to ice."
- **B** "As wind moves the storm cloud, it also moves some of the raindrops inside of it."
- **C** "Raindrops start to form at the bottom of the cloud, where it is warmer."
- **D** "At the top, air is much colder than it is lower down."
- 2 Match each cause to an effect. Write the letter from the second column on the correct line in the first column.

Cause	Effect		
Wind moves the storm clouds.	A The raindrops turn to ice.		
Air bubbles are trapped inside the	B They fall to the ground as hailstones.		
freezing water.	C Raindrops inside the cloud begin		
Hailstones move up and down in the cloud.	to move.		
Raindrops meet cold air.	D The hailstones are milky white.		
The ice drops become heavier.	E Layers of ice are added.		

Read this sentence from the article.

Storm clouds are made of water droplets.

Notice the word with the ending *-let*. That ending means "a small type of something." According to the sentence, what are storm clouds made of?

- A smaller clouds
- **B** warm drops of water
- **C** tiny drops of water
- **D** heavy drops of water
- 4 What are **three** effects of hailstones moving up and down in the cloud?
 - **A** The hailstones break apart.
 - **B** The hailstones add layers of ice.
 - **C** The hailstones get stuck in a storm cloud and never fall.
 - **D** The hailstones warm up and turn back into raindrops.
 - **E** The hailstones grow larger.
 - **F** The hailstones may take on unusual shapes.
 - **G** The hailstones fill with air bubbles.
- 5 What causes rings to form in a hailstone?
 - **A** the hail's up-and-down movement in the clouds
 - **B** escaping air bubbles
 - C the warm air at the bottom of the cloud
 - **D** the cold air at the top of the cloud

- 6 Why are some hailstones clear?
 - Air bubbles get caught inside the hailstones.
 - There is almost no air inside the hailstones.
 - The temperature inside the cloud is very cold.
 - There are strong winds inside the cloud.



Write Hailstones can be as small as pebbles or as large as baseballs. Some also have very unusual shapes. How does that happen? Reread the text. Draw a box around the section that tells why hailstones can be different shapes and sizes.

- Plan Your Response Reread paragraph 5. Underline details that explain how hailstones get their shape and size. You can use that information in your explanation.
- 8 Write an Extended Response Explain what causes hailstones to get as big as baseballs and develop odd shapes. Use two details from the passage to help you show cause and effect.



Learning Target

You've seen that knowing about cause and effect can help you understand connections between ideas. Explain why looking for causes and effects is especially important when you are reading science texts.

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