

Lesson 23

Explaining an Author's Reasons and Evidence



Learning Target



Explaining how authors use reasons and evidence to support their points about a topic will help you better understand what you read.

- **Read** Some authors write to get you to agree with their way of thinking about a topic. To **persuade** you, authors provide **points**, or ideas, to explain their thinking.
- Authors back up their points with good **reasons** telling why their ideas might be true.
 - Authors support each reason with **evidence**, or facts and examples that explain more.

Good reasons and evidence are what make the authors' points convincing.

Look at the cartoons below that take place on a space station in 2450. Think about how each child asks for a dog.



Which child do you think is more likely to convince his or her parents that a dog is a good idea?

► **Think** What have you learned about how authors use reasons and evidence to support a point? Think about which child is most likely to get a dog and why. Complete the chart below to show the child's point, reasons, and evidence.

What does the child think? (The Point)	Why does the child think this way? (Reason)	How do details support the child's thinking? (Evidence)

- **Talk** Share your chart with a partner.
- Did you identify the same point?
 - What reasons did each of you include? Do they make sense?
 - What evidence was used to support each reason?



Academic Talk

Use these words to talk about the text.

- persuade
- reasons
- points
- evidence



Should We Explore Space? Absolutely!

by Marc Lucas

- 1 Exploring space is one of the most important things the United States can do. But why? For one reason, the work of getting people and machines into space leads to new technologies. Some of these new technologies then become available to everyone and improve their lives. Do you need examples? Then try these: Because of the space program of the 1960s and 1970s, we have digital clocks, laser surgery, and instant foods. And these new technologies have broader effects on society. They help create new businesses, which then make new jobs, a richer population, and a stronger economy.
- 2 But there is a second and more important reason for exploring space, and it has nothing to do with money. It's called the need to discover. Human beings are naturally curious. We want to know what's out there. If it's at the top of a mountain, or across a river, or at the bottom of the sea, we want to see it and touch it.
- 3 Humans are also competitive—we want to be both the first and the best at what we do. When the Soviet Union put the first human in space in 1961, Americans didn't just sit and watch. The United States surged ahead with a space program and eight years later put the first person on the Moon.

Close Reader Habits

Circle the author's main point. Then **underline** three reasons the author provides to support his point.



Explore

What is the author's point, and what reasons and evidence does he provide to support his thinking?

A *reason* answers a question that begins with *why*. *Evidence* is a fact or example that explains the reason.

Think

- 1 Complete the chart below by identifying the author's point, reasons, and evidence.

What does the author think? (The Point)	Why does the author think this way? (Reason)	How do details support the author's thinking? (Evidence)

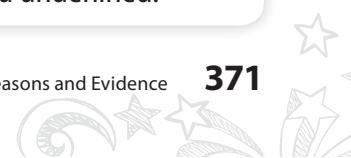
Talk

- 2 What point does the author make about space exploration? What are the reasons and evidence he gives for what he thinks? Discuss the text details given to support the author's point.

 **Write**

- 3 **Short Response** Explain the author's point about space exploration and the reasons he gives for his thinking. Include details the author provides as evidence to support his reasons. Use the space provided on page 374 to write your response.

HINT Look for evidence, or facts and examples, that supports the reasons you underlined.



Should We Settle the Moon?

by Jo Newbold

- 1 Whenever people say “Let’s shoot for the Moon!” they mean that anything is possible. So, when people think of space exploration, a colony on the Moon seems like the next step. The views from the Moon would be spectacular, and being a “Moontonian” would be exciting. But is it feasible?
- 2 Let’s start with the Moon’s surface, which is not an easy place for life to thrive. There is little atmosphere, so all air would have to be brought from Earth. The lack of atmosphere causes temperatures to vary greatly, from 232°F during the day to –315°F at night. And then there’s the radiation. Without a thick, Earth-like atmosphere to filter the sun’s rays, radiation would sicken any colonists.
- 3 And what about water? True, there is ice below the Moon’s surface. If astronauts can mine that ice, they can melt it and use it to make oxygen and rocket fuel. But if the ice is unreachable, all water would have to be carted up to the Moon—a cumbersome and unworkable task.
- 4 But the biggest obstacle to living on the Moon is the regolith. Regolith is a layer of fine stone dust. It covers almost the entire surface and sticks to everything. It can gum up a spacesuit, jam an engine, and ruin machines. Worst of all, if we couldn’t find a way to keep it out of the colony, it would destroy the lungs of everyone living there.
- 5 So, will we ever have a Moon colony? Never say never, but today our technology does not make the idea practical.

Close Reader Habits

What reasons support the author’s point? **Circle** three reasons the author gives to support her point.



A title with a question in it is a clue to the author's point. Finding answers will help you identify reasons and evidence.

Think Use what you learned from reading the essay to respond to the following questions.

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

Part A

Which statement below provides a reason the author uses in paragraph 2 to support her main point about settling the Moon?

- A** Regolith can destroy the lungs of humans living there.
- B** The Moon's surface is a dangerous environment for life.
- C** Temperatures vary because of the lack of atmosphere.
- D** Radiation from the sun's rays is likely to make colonists ill.

Part B

Underline **three** pieces of evidence in paragraph 2 of "Should We Settle the Moon?" that support your answer in Part A.

2 What evidence does the author give to support her line of reasoning about regolith? Write **two** pieces of evidence in the box below.

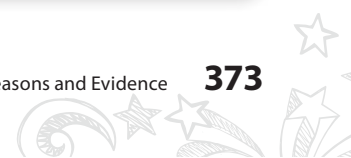
Talk

3 What point does the author make about settling the Moon? What reasons and evidence does she provide as support? Use the chart on page 375 to organize your ideas.

Write

4 Short Response Describe the reasons and evidence the author provides to support her point about a Moon settlement. Include at least **three** details from the text to support your response. Use the space provided on page 375 to write your response.

HINT Think about the reasons the author gives to prove her point.





Write Use the space below to write your answer to the question on page 371.

Should We Explore Space? **Absolutely!**

3 Short Response Explain the author’s point about space exploration and the reasons he gives for his thinking. Include details the author provides as evidence to support his reasons.

HINT Look for evidence, or facts and examples, that supports the reasons you underlined.



Don't forget to check your writing.

Check Your Writing

- Did you read the prompt carefully?
- 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?

Should We Settle the Moon?

3 Use the chart below to organize your ideas.

What does the author think? (The Point)	Why does the author think this way? (Reason)	How do details support the author's thinking? (Evidence)



Write Use the space below to write your answer to the question on page 373.

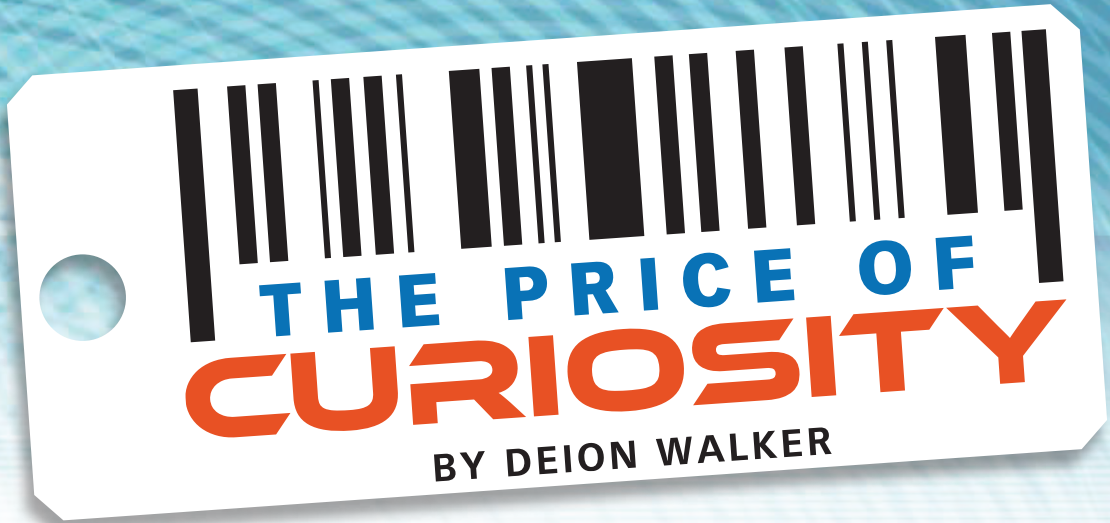
4 Short Response Describe the reasons and evidence the author provides to support her point about a Moon settlement. Include at least **three** details from the text to support your response.

HINT Think about the reasons the author gives to prove her point.

WORDS TO KNOW

As you read, look inside, around, and beyond these words to figure out what they mean.

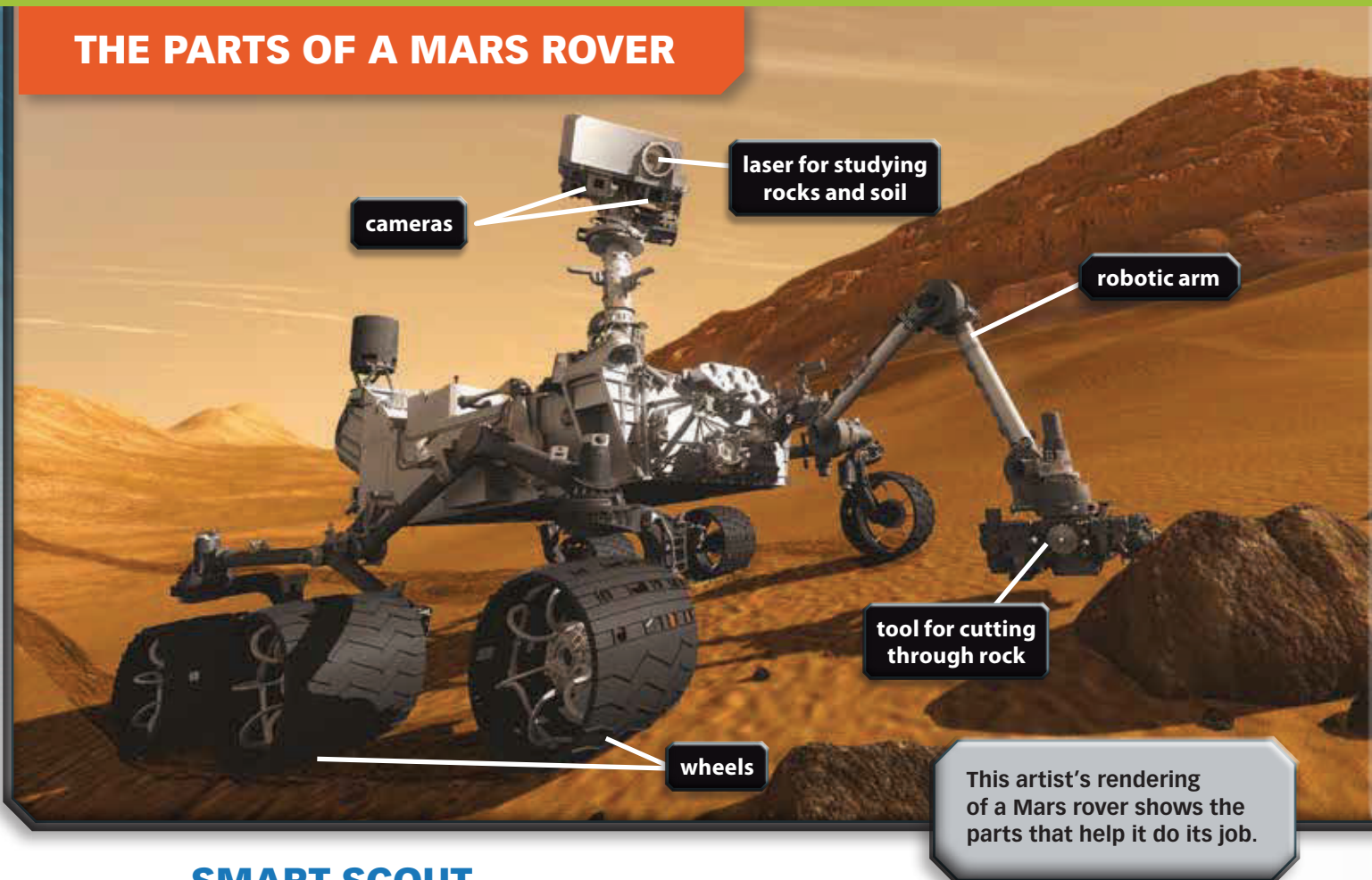
- **encounter**
- **relay**
- **resources**



- 1 Far away, on the rocky surface of the planet Mars, a small but powerful robot called a rover moves dutifully along. Back and forth and up and down the robot roams. It scans the planet. It also sends valuable information back to scientists on Earth at the National Aeronautics and Space Administration (NASA). The scientists have big goals for this rover, which they have named *Curiosity*. They hope it will tell them whether life has existed on Mars, what the planet's environment is like, and whether humans will ever be able to explore it. But the missions to Mars come at a high price—*Curiosity* alone cost 2.5 billion dollars to build and send. Some people question whether that money might be better spent here on Earth. Should the exploration of Mars continue, despite the staggering cost?

ALL IN FAVOR

- 2 Scientists and others who support space exploration believe that the rovers may one day tell us if life ever existed on Mars. This would be the first evidence of life elsewhere in our universe. Second, the rovers can study the climate and geology of Mars. They relay information about how it has changed over time. This kind of information would help us learn whether any of the planet's resources can help us here on Earth. It may also help scientists understand features of our own planet. Third, scientists want to learn about the planet's environment. They hope to prepare for human exploration.

THE PARTS OF A MARS ROVER**SMART SCOUT**

- 3 Supporters of Mars exploration also point out that, as a vehicle, *Curiosity* can do much more than a science station that's fixed in one place. *Curiosity* moves—or roves—across the surface of Mars, collecting information as it goes. Its “eyes” are 17 cameras that can see and analyze the landscape. The rover’s “feet” are its wheels. Those wheels roll over obstacles as high as 2.5 feet. The robot’s “ears” hear commands relayed from NASA. *Curiosity* also has a laser that can analyze the chemicals in soil and rocks.
- 4 With all that equipment, *Curiosity* can send NASA a steady stream of data about the surface of Mars. That makes NASA scientists very happy.

WHAT CURIOSITY CAN TEACH US

- 5 There are many good reasons to explore Mars. It's hard to put a value on discovering new knowledge, and the rovers are providing plenty of that. *Curiosity* already has made valuable discoveries. During its first 100 days on Mars, the rover detected water in the planet's soil. Why is that important? Scientists believe that water is a crucial clue to the existence of life on Mars or other planets. This life could take the form of tiny microbes. Finding evidence of life on Mars—even if it is just microbes—would be a big deal to scientists.

HIDDEN VALUE

- 6 Although they were enormously expensive, *Curiosity* and the rovers that came before it may give NASA scientists more value than the scientists expected. When *Curiosity* landed on Mars, scientists expected it to work for two years. However, it may keep roving for much longer. Scientists predicted that *Spirit* and *Opportunity*, two rovers that landed on Mars in 2004, would work for about 90 days. But *Spirit* worked for six years before it got stuck in sand. *Opportunity* is still going strong. *Curiosity* might keep going for a long time, too, as long as it doesn't get stuck or encounter other problems.
- 7 Furthermore, NASA points out that *Curiosity* and the other rovers have helped the U.S. economy by creating jobs. More than 7,000 people in 31 states have worked on the *Curiosity* mission. And *Curiosity* may help the economy in another way, too. It may turn up precious minerals and energy resources on Mars that we could mine to use on Earth.

THE FUTURE

- 8 Some scientists claim that within 40 years, humans will be living on Mars. They call it a “foregone conclusion,” or a sure thing. If that's true, then robot missions like *Curiosity* are important stepping-stones to that future. Even if that never happens, the Mars rovers may provide knowledge that is key to understanding our own universe.

This look back at a Martian dune was taken by one of *Curiosity*'s cameras. The wheel tracks are about nine feet apart.



Think and Write Use what you learned from reading the science article to respond to the following questions.

- 1** Which statement gives a reason that supports the author's point about Mars rovers?
 - A** A science station has a lot of capabilities.
 - B** Vehicles like *Curiosity* are well-suited for exploring Mars.
 - C** Mars rovers must be able to collect data and send it to Earth.
 - D** *Curiosity* has human-like traits that will help people travel to Mars.

- 2** Which reason for exploring Mars is **best** supported by evidence in paragraph 3?
 - A** Scientists can learn about our planet by studying the weather and climate on Mars.
 - B** Scientists have been able to keep the rovers exploring Mars for longer than expected.
 - C** Scientists want to prepare humans to build science stations on Mars.
 - D** Scientists may find resources on Mars to use here on Earth.

- 3** What does the suffix *-ation* mean in the word exploration as it is used in the last sentence of paragraph 1?
 - A** state of
 - B** result of
 - C** quality of
 - D** process of

- 4 Which sentence **best** supports the author’s main point?
- A “Third, scientists want to learn about the planet’s environment.” (paragraph 2)
 - B “*Curiosity* also has a laser that can analyze the chemicals in soil and rocks.” (paragraph 3)
 - C “During its first 100 days on Mars, the rover detected water in the planet’s soil.” (paragraph 5)
 - D “Mars rovers may provide knowledge that is key to understanding our own universe.” (paragraph 8)

5 **Short Response** What evidence in paragraphs 6 and 7 supports the idea that Mars rovers are worth the cost? Use **two** details from the paragraphs to support your response.

- 6 What reason do supporters of space exploration give to explain why sending rovers to Mars is important?
- A Rovers can collect data that will help people go to Mars.
 - B Rovers can discover resources that can be used to build more rovers.
 - C Rovers can stream data from Mars back to Earth regularly.
 - D Rovers can prove there is no evidence of life beyond Earth.

7 Short Response What point is the author making about exploring Mars, and what reasons and evidence does he give to support it? Use **two** or more details from the article to support your response.



Learning Target

In this lesson, you learned to identify the reasons and evidence authors use to support their points about a topic. Explain how this skill can help you better understand the ideas in texts you read.
