Lesson 18 Part 1: Introduction

Comparing and Contrasting Texts

CCLS
RI.7.9: Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.

Theme: *Facing the Challenges*

Imagine that two artists use the same paints to paint a mountain scene. One creates a dark, scary landscape, and the other paints a bright, peaceful place. Even though the artists use the same materials and paint the same subject, their results depend on the effects they want to achieve and the colors they choose to create those effects. In the same way, authors may write about the same topic, but, depending on their purpose, they may choose to focus on different details and evidence. As a result, they produce very different products.

Look at the cartoon below and think about how the characters are reacting to the poster. What if they both decided to write reports about global warming? How might each of them approach the topic?

Read the information in this chart. Which facts do you think each of the two characters would emphasize when writing about global warming?

General Facts	Causes of the Problem	Effects on Wildlife
• Earth's average temperatures are increasing. • Rising temperatures result in melting of the polar ice caps. • Polar ice melt causes sea levels to rise.	• Fossil-fuel emissions release heat-trapping gases into the atmosphere. • The additional heat raises local temperatures and, in turn, impacts Earth's climates.	• Loss of habitat due to ice melt results in decreasing animal populations. • Changes in feeding and migration patterns put animals at risk.

While both students would probably use the information in the first column, the girl probably would also use the evidence in the second column, while the boy would focus on facts from the third one. Always keep in mind that an author's purpose for writing shapes the way he or she presents key information as well as which facts and evidence are emphasized.

Read the following scientific account about global warming.

Genre: **Scientific Account**

Global Warming: Why?

by Rex Woodbury

Scientists who study climate models and climate patterns are concerned that the Earth's average temperatures seem to be increasing. They also report that a warm-up of even a few degrees will have far-reaching effects on climate, wildlife, human food production, and fresh water supplies. Why is this happening?

To understand global warming, imagine that our planet is wrapped in a blanket. The blanket is made up of carbon dioxide and other gases that collect and trap the sun's heat in the Earth's atmosphere. It's important to understand that this blanket serves as protection from the intensity of the sun and its dangerous rays. The burning of fossil fuels and other human activities, however, have changed the make-up of this protective covering. In simple terms, by adding more gases, we've added more layers, and the blanket traps more heat than it should, heat that changes our environment.

Explore how to answer this question: *"How does the author's purpose shape the focus of the account and the key information he presents?"*

In the first paragraph, the author points out the problem caused by increasing temperatures and then asks a question. In the second paragraph, he answers that question by explaining more about the process of global warming.

In the chart below, write the focus of this account. After you read the account on the next page, fill in columns 2 and 3. Then compare and contrast the ideas you wrote.

Focus of Account 1	Focus of Account 2	Ideas in Both Accounts

Close Reading

The accounts here and on page 180 both tell about global warming, but they use key information differently. **Underline** any facts in this account that are similar to those in the first one. **Star (*)** any unique details. Use this information to complete the chart on the previous page.

Hint

What is the main point that the author of this account wants you to know? How is it different from the first account?

Read another account about global warming. Use the Close Reading and the Hint to help you complete the chart and then answer the question.

Genre: **Scientific Account**

The Side Effects of Warming

by Di Garza

Global warming widely impacts both Earth's climate and the environment as a whole. The Arctic regions, in particular, are suffering due to climate change. Glacial ice is melting at an alarming rate. The amount of ice lost in recent years equals the combined area of Alaska, Texas, and Washington. This change to the Arctic landscape endangers many of the creatures living there. Polar bears, for example, depend on glacial ice. It allows them to travel far from land to open water to find their favorite prey, seals. A decrease in this ice limits the bears' ability to reach their prey, thus reducing their chance of survival. Only by changing human habits that contribute to climate change, such as the use of fossil fuels, can we stop the harmful effects of global warming on wildlife.

Circle the correct answer.

How does the focus of this account differ from the account on page 180?

A Instead of telling the cause of global warming, it explains an effect.

B Instead of describing one solution, it tells about many possibilities.

C Instead of talking about glacial ice, it describes polar bear habits.

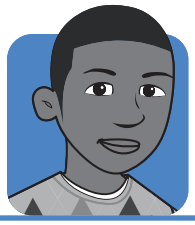
D Instead of naming climate changes, it warns of future problems.

Show Your Thinking

Compare and contrast the key information presented in the two passages. What evidence, if any, do both include? Why has it been presented differently?

With a partner, summarize how the author's purpose in each passage shapes the presentation.

Read the following passages about desalination, or the removal of salt from water. Use the Study Buddies and Close Readings to guide your reading.



As I read this passage, I'll think about the author's purpose, and I'll note the way it determines how the key information is presented.

Close Reading

Circle one piece of key information in each paragraph that helps you understand the author's most important ideas.

What kind of information does the author include about desalination? **Underline** details about this process that help you understand it.

Genre: **Report**

Some Simple Water Science

by Grace Carter-Hamm

1 If 70 percent of Earth's surface is covered in water, then why do news headlines warn us that water is scarce and that we're running out of it? The problem is that most of this water is salt water, which cannot be used by humans, most land animals, or plants. Only 2.5 percent is fresh water that can actually be drunk or used to water crops.

2 With all that salt water just floating around, it's natural to wonder if there's a way to remove the salt and make it usable. Well, there is, and the answer came from seabirds. A special membrane in the birds' throats will stop salt molecules but allow water molecules to pass through it. After years of studying this membrane, scientists have figured out how to copy this desalination technique using a process called *reverse osmosis*.

3 To understand reverse osmosis, you must first understand osmosis itself. Picture a bowl with two compartments. Separating the two is a semipermeable membrane—a barrier that allows some molecules to pass through it but not others. One compartment holds fresh water and the other sugar water. Checking the bowl hours later, you discover that the sugar solution is less sweet than it had been. Osmosis has occurred: molecules of water have traveled from the fresh water side (an area of no sugar concentration) to the sugar side (an area of high concentration), making the concentrations more equal.

4 In reverse osmosis, the process is reversed. It maximizes areas of concentration instead of equalizing them. The process forces salt molecules in seawater, for example, to separate away from the water molecules rather than allowing them to mix together. Thus, fresh water is born.

5 Today, special desalination plants work to remove salt from seawater, creating potable drinking water. Thanks to seabirds, these plants can help to solve the world's water problems.

Genre: **Persuasive Essay**

This next passage also deals with desalination. I wonder how the focus of this one will differ. I'll look for key information as I read.

Close Reading

Underline any information in this passage that is the same as or similar to facts presented in "Some Simple Water Science."

How is the discussion of desalination different in this passage? **Star (*)** any facts about desalination that were not present in the previous text.

Water for the World

by Lee Epstein

1 The essential ingredients for life are food, water, and shelter. Water, of course, is especially important. Not only do we need to drink it to survive, but we also need it to water our crops and take care of livestock, both of which are primary food sources. Without a ready supply of clean, fresh water, however, these needs cannot be met. As the number of people in our world continues to grow, meeting everyone's water requirements becomes more and more challenging. How can this be, though, if most of Earth's surface is water?

2 Although 70 percent of Earth is covered in water, only a small fraction of that total is fresh water safe for human use. This amount appears even smaller when considering that the population has tripled over the last hundred years or so and our water use has increased six-fold. Not only are there more people, but they are using more water than in the past. In some areas, the supply is dwindling while the demand continues to grow.

3 Given our limited fresh water resources and increased water needs, we must turn to other means of providing adequate water supplies to the 1.1 billion people who currently do not have access to clean, safe water. One popular solution for some areas experiencing water stress or an imbalance between water use and resources is *desalination*. The process "manufactures" fresh water from seawater.

4 Desalination, or the removal of salt from salt water through reverse osmosis, is not a new idea. The Greeks and Romans were doing it thousands of years ago, one potful of water at a time. Luckily, technology has made the task easier: As of 2009, there were more than 1,400 desalination plants around the world, producing more than 15 billion gallons of usable water per day.

5 Despite our progress in making desalination a viable solution to the water crisis, we still have a long road ahead. Countries must continue to work toward building more desalination plants to keep up with the growing need for fresh water. Only then will our water resources become as limitless as the sea.

Hints

What point was the author of each passage trying to make about desalination?

Look back at the information you underlined to see which facts are featured in both passages.

Why do you think the authors chose to include the facts they did?

Use the Hints on this page to help you answer the questions.

1 Which sentence best sums up how the focus of the first passage differs from the second passage?

A The first passage describes the growing demand for fresh water, while the second describes the current limits to water resources.

B The first passage stresses the scarcity of fresh water, while the second explains how salt can be removed from seawater.

C The first passage presents the pros and cons of desalination, while the second argues that desalination is the solution to water problems.

D The first passage describes the desalination process, while the second discusses how desalination can help solve the water crisis.

2 Which of the following explains how the two authors shape their presentations by using similar key information in a different way?

A Both authors talk about how people need water to survive, but the second explains what will happen if water needs aren't met.

B Both authors name reverse osmosis as a key part of desalination, but the first explains the science principles used in the process.

C Both authors explain that 1.1 billion people don't have clean, salt-free water, but the second uses the fact to support desalination.

D Both authors say that only a small percent of Earth's water is fresh, but the first discusses the challenges of finding water resources.

3 Compare the presentations about desalination in the two passages. Explain how they are alike and different. Describe how the authors use similar and different facts to achieve their unique purposes. Use at least two details from the texts in your response.

Read both scientific articles about endangered fish. Then answer the questions that follow.

from "Big Fish in Troubled Waters"

by Stephen Ornes, Science News for Kids

1 You may have heard the popular saying "there are always more fish in the sea." But as a number of new studies show, the truth of that statement depends on the kind of fish. Fish populations are changing, and not necessarily for the better.

2 Consider the case of big, predatory fish. These giants, like sharks and cod, devour other, smaller fish. Big fish are an important part of the marine ecosystem—which includes the ocean and all the things living in it—because they keep down the numbers of smaller fish. Without fish that eat other fish, populations of smaller swimmers could swell. More of these smaller fish would devour more plants, leaving less vegetation for other organisms—or for future fish.

3 As fierce and ferocious as predators can be, they're no match for fishing technology. Many people love to eat predatory fish like sharks, cod and tuna. According to two new, large studies, these giant predators are becoming scarce. One study shows how the populations are decreasing; the other shows how fishing hauls, or the amount of fish caught, have changed. Together, the studies suggest that overfishing threatens the creatures near the top of the marine food chain.

4 In one study, Villy Christensen and his colleagues looked at 200 past studies of marine life to learn how fish populations have changed over time. Christensen is a fisheries expert at the University of British Columbia in Vancouver. The oldest studies his team looked at dated to 1880; the most recent were published in 2007. In these 200 studies, researchers counted and described all the different types of life in small oceanic ecosystems.

5 Christensen presented the team's findings in February at the 2011 meeting of the American Association for the Advancement of Science in Washington, D.C. He reported that between 1910 and 1970, the numbers of big predators decreased slowly. In 1970, their populations really started to drop. Around that time, fishing ships began using new tools that led to catching more fish. The numbers have been falling quickly ever since.

6 Now, the number of these big fish in the ocean is very low. Christensen reported that today there is only about one-third as many of the large, fish-eating fish as there was in 1910. That means for every three you might have found in 1910, now you would only find one. Christensen said the future looks increasingly dismal for these giants.

7 "We see no indication that things are improving," Christensen told the audience. "It's a pretty bleak situation."

8 While Christensen looked at the problem from the perspective of the fish, Reg Watson approached it from the perspective of the fishermen. Watson, a biologist also at the University of British Columbia, studied the increase in fishing in recent decades. Like Christensen, Watson reported his findings at the AAAS meeting.

9 In the middle of the 20th century, Watson reported, fishing boats didn't venture far from home—and most fish were caught near the shore. That wasn't true in the 1980s. By then, he said, fishing had moved farther from shore, into the open oceans, and it was helped by the development of new tools and technologies. These advances helped a lot: In the 1990s, fisherman hauled in five times as much fish, by weight, as they had in the middle of the century. But since the 1990s, something has changed. Despite new technologies and more effort, fishing operations have not continued to boost their hauls. If there are fewer fish in the sea, fishing companies may have a hard time keeping up with the demand for fresh fish.

10 The studies by Watson and Christensen don't paint a promising picture for sea predators. These scientists studied historical data to understand the present, and this research is needed to forecast the future of fish and fishing. And the forecast doesn't look good: Large predator fish are becoming harder to find—and there may not be more in the sea for long.

Protecting the Oceans, One Choice at a Time

by Oscar Seever

1 When the US Department of Agriculture (USDA) introduced new dietary guidelines in 2010, one of its key recommendations was to eat seafood twice a week. Seafood is higher in protein and lower in fat than other animal proteins. Also, many fish and shellfish are rich in omega-3 fatty acids. Omega-3s have been shown to have many health benefits, including the support of heart health. If all Americans were to follow this recommendation, however, consumption of seafood in the United States would double.

2 While this would be great for people's health, it could pose a problem for the world's oceans. Current fishing practices are already reducing the populations of many seafood species to the point of collapse. If we want to have access to seafood well into the future, we must take steps to preserve and renew the ocean's bounty and encourage others around the world to do the same. Action from world governments will be vital to sustain seafood populations in the oceans that cover three-quarters of Earth's surface. But there is something you can do as an individual, too. You can exercise the power of your fork and avoid eating seafood with populations that have become endangered.

3 When choosing which seafood to buy and eat, there are two important factors to consider, the species of fish and where it was caught. The bluefin tuna is critically endangered and has been overfished all over the world, largely due to its popularity as a sushi fish. This huge fish, which can grow to be 10 feet long and weigh 1,400 pounds, is popular with fisherman—just one fish can be sold for up to $100,000. But if enough people avoid this fish, the demand would go down. Fishermen wouldn't have as much reason to catch them. Tuna fans can still feed their cravings by choosing more abundant bigeye or yellowfin tuna.

4 The Atlantic halibut is another large fish, which can grow to be 9 feet long and 1,000 pounds. It is particularly vulnerable to overfishing due to its long lifespan. It can live to be 50 years old, and it doesn't reach reproductive maturity until it is between 10 and 14. Halibut caught before they reach maturity never get a chance to reproduce, damaging the entire population. The United States has banned Atlantic halibut fishing in its waters. However, it cannot regulate fishing practices on the "high seas," the large areas of ocean outside of any individual country's control. Luckily, there is a good alternative to Atlantic halibut, its relative the Pacific halibut.

5 For those who like eating lobster, paying attention to where it comes from can protect some lobster populations. Spiny lobsters from the Caribbean and South American are threatened, but spiny lobster populations in Florida, California, and Mexico's Baja California are still in good shape. Your local seafood market should be able to tell you where its seafood comes from. If they cannot, consider a surer option, such as an American lobster from Maine.

6 If this all sounds a bit complicated, don't worry. There is information available on which to base your seafood-eating decisions. The Monterey Bay Aquarium, one of the top aquariums in the country, maintains a complete, easily printable "Buyer's Guide." This list tells you which seafood species from which sources are the best choices, which alternatives to consider, and which species you, the consumer, should avoid. By paying a little attention to the seafood you're eating, you can avoid contributing to the problems faced by endangered fish species. Change won't happen overnight, but every choice you make can help protect an ocean ecosystem near you.

Answer Form

1 Ⓐ Ⓑ Ⓒ Ⓓ
2 Ⓐ Ⓑ Ⓒ Ⓓ
3 Ⓐ Ⓑ Ⓒ Ⓓ

Number Correct ___/3

1 Which of the following **best** sums up how the focus of "Big Fish in Troubled Waters" differs from "Protecting the Oceans, One Choice at a Time"?

A The first article explains why people love to catch large predatory fish like cod and tuna, while the second explains the life-cycle of large fish such as the Atlantic halibut.

B The first article explains why predatory fish are important to the ocean ecosystem, while the second explains where to find information about fish that are rich in omega-3s.

C The first article explains the causes of declining fish populations, while the second explains the connections between the creatures in the ocean food chain.

D The first article explains that overfishing is threatening some fish populations, while the second explains how to save some fish species by making careful decisions about meals.

2 Which of the following pieces of key information is used in both articles?

A Spiny lobsters from the Caribbean and South America are endangered.

B Fish populations are changing or decreasing, leaving some species at risk.

C An increase in smaller fish means a decrease in the food supply for predatory fish.

D The health benefits of eating fish and shellfish is creating a high demand for them.

3 Which statement **best** describes the purposes that shaped the authors' presentations of key information in the two articles?

A Both authors are trying to convince the reader to agree with their points of view.

B Both authors give facts as evidence to support conclusions.

C The author of the first article uses facts and then draws a logical conclusion. The author of the second article uses facts to move the reader to take action.

D The author of the first article gives reasons and evidence to support his opinion. The author of the second article uses facts and reasons to predict future trends.

4 Compare and contrast the ways the authors shaped their presentations in the two articles. Describe how their use of key information helped them to achieve their purposes. Use at least **three** details from the texts in your response.

✓ Self Check *Go back and see what you can check off on the Self Check on page 169.*