

Lesson Plan

Analyzing Arguments

Book: *The Debate about Vaccines*

Series: Pros and Cons

Level: Voyager

Objective

To help students practice identifying an author's main point and perspective in a text.

Supplies

- *The Debate about Vaccines*
- Argument Excerpts sheet (attached)
- Pencils and paper

Before the Activity

Have students read *The Debate about Vaccines*. Print one Arguments Excerpts sheet for each student.

Activity

The Debate about Vaccines presents two contradicting perspectives on a single issue. Both views look at the same evidence about vaccines, but they draw different conclusions. In fact, some of the same evidence is used by both sides. For example, both sides of the vaccination debate mention the tetanus vaccine.

Read the following excerpt from the PROS section aloud to the students:

“In the early 1940s, approximately 500 to 600 people in the United States got tetanus each year. A tetanus vaccine was introduced in the late 1940s. The number of people who get tetanus has gone down steadily since then. Between 1995 and 2015, there were fewer than 50 cases of tetanus reported each year in the United States (p. 12).”

Then read the following excerpt from the CONS section aloud to the students:

“Some vaccines cannot provide permanent immunity. People must receive booster doses. These additional doses expose the body to the antigens again. People must keep getting more doses to stay immune. The tetanus vaccine, for example, lasts for approximately 10 years. After that, people must get a booster dose of the vaccine to stay immune (pp. 30–31).”

These excerpts both discuss the tetanus vaccine. However, they choose different facts to focus on. Ask the following question:

- What facts or information does the excerpt from the PROS section focus on? (Answer: That excerpt focuses on how the number of people who got tetanus was greatly reduced in the United States.)
- What facts or information does the excerpt from the CONS section focus on? (Answer: That excerpt focuses on how the immunity is not permanent.)
- How does each excerpt impact the feeling the reader gets about the tetanus vaccine? (Answer: The first excerpt makes the tetanus vaccine seem like a valuable way to help save lives, but the second excerpt makes the tetanus vaccine sound ineffective.)

Give each student an Argument Excerpts sheet. This sheet contains three excerpts from *The Debate about Vaccines*. For each excerpt, students should do three things:

1. Write a one-sentence summary of the author's main point.
2. Write if the author's perspective seems to support vaccines or oppose vaccines.
3. Try rewriting the excerpt as a paragraph that discusses the same topic but supports the opposite point of view. This paragraph should still include some of the same facts and statistics, but it should present them in a different light.

Evaluation

Using the attached answer key, give each student up to six points for each excerpt, for a total of 18 points.

Standards

This lesson may be used to address the Common Core State Standards' reading informational texts standards, grade 6 (RI 6.6).

Argument Excerpts

Excerpt 1

Flu viruses change from season to season. It is difficult for people's immune systems to recognize the new viruses. Every year, scientists must try to match the antigens in the vaccine to the flu viruses being passed around the community. The vaccine for that year must protect against hundreds of flu viruses.

Scientists must try to predict which virus will be most common. If the virus in the vaccine does not match the virus causing the infection, people will not be immune. Even when there is a good match, the vaccine only reduces the risk of flu by approximately 50 to 60 percent.

Depending on how long the flu season lasts, a different flu virus can begin to circulate and make people sick. Developing a vaccine for this new virus can take months. It is also very expensive.

Excerpt 2

Even after a vaccine is licensed, the FDA keeps a close watch on its production. FDA employees inspect facilities. They study the manufacturer's tests of the vaccine. They may even conduct their own tests on the vaccine. Public health officials also watch for side effects. If a side effect is linked to a vaccine, they weigh the benefits of the vaccine against the possible risks. They recommend whether the vaccine should be used.

It can take 10 to 15 years to develop and test a new vaccine. But preventing a disease is almost always less expensive than treating it. In 2016, a study showed that every dollar invested in vaccines saves \$16 in health care costs. If fewer people get sick, less money will be spent on hospital stays and other medical expenses. In one year, for example, hospitals in Colorado treated 538 children for diseases that vaccines could have prevented. This cost \$29.2 million, or more than \$54,000 per child. A dose of a vaccine typically costs less than \$200.

Excerpt 3

In 1990, the United States created the Vaccine Adverse Event Reporting System. Since then, approximately 30,000 cases of harmful reactions to vaccines have been reported each year. Approximately 85 to 90 percent of these reactions are mild. But 10 to 15 percent are serious. This means the vaccines have caused permanent disability, life-threatening illness, or death. A few people have died after receiving a vaccine, though this is very uncommon. In 1994, approximately 140 people died after getting a polio vaccine. But this number varies from year to year. Other years, fewer than 100 people died after getting the vaccine for polio. The flu and pneumonia vaccines have the most risk of causing death. More than 100 people in the United States die each year after receiving these vaccines.

Argument Excerpts ANSWER KEY

Excerpt 1 (from pp. 28–30)

1. This excerpt explains the process used to create the flu vaccine.
2. This author seems to oppose the flu vaccine.
3. Answers will vary, but they should be similar to the following paragraph:

Every year, scientists work hard to create a flu vaccine. They predict which flu viruses will be common that year. Then, they try to match the antigens in the vaccine to these viruses. A flu vaccine can protect people from hundreds of different viruses. If there is a good match between the antigens in the vaccine and the viruses being passed around the community, the vaccine can reduce people's risk of the flu by as much as 50 to 60 percent. And if a different virus begins to circulate, scientists can work to develop a new vaccine for that virus as well.

Excerpt 2 (from pp. 18–19)

1. The author explains the process the FDA uses to test and approve vaccines.
2. The author seems to support testing and developing new vaccines.
3. Answers will vary, but they should be similar to the following paragraph:

Testing and developing vaccines is often time-consuming and expensive. This long process can take as many as 10 to 15 years. Lots of money must be invested in testing a new vaccine. Plus, just one dose of a vaccine can cost as much as \$200. Even after a vaccine is licensed, it can still cause problems. Some vaccines can cause side effects, even after they are approved by the FDA. In these cases, public health officials must determine how severe the side effects are. They may decide that the vaccine is not safe to use.

Excerpt 3 (from pp. 42–43)

1. The author explains the side effects that can be caused by vaccines.
2. The author seems to oppose the use of vaccines.
3. Answers will vary, but they should be similar to the following paragraph:

Some people are concerned about side effects from vaccines. However, side effects are very uncommon. They are also closely monitored. Since the Vaccine Adverse Event Reporting System was created in 1990, only about 30,000 cases of harmful reactions to vaccines have been reported each year. The vast majority of these side effects—85 to 90 percent—are mild. Deaths caused by vaccines are extremely rare. Even the vaccines for pneumonia and the flu, which carry the most risk, are fatal for only about 100 people in the United States each year. This is an incredibly small number compared to the millions of people who are helped by vaccines each year.