

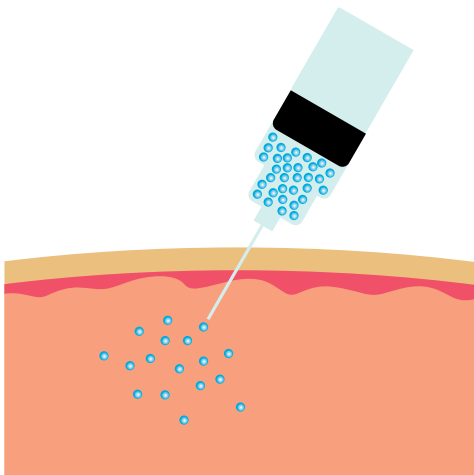
How a Vaccine Works

Follow the instructions to complete the activity.

NAME

DATE

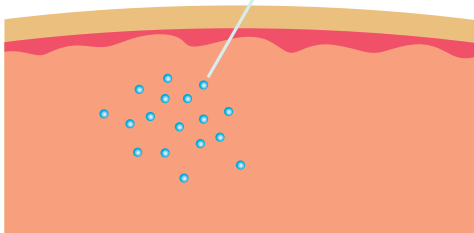
Fill in the missing labels on the diagram. Then, in your own words, describe how each step of the vaccination process works in the spaces below.

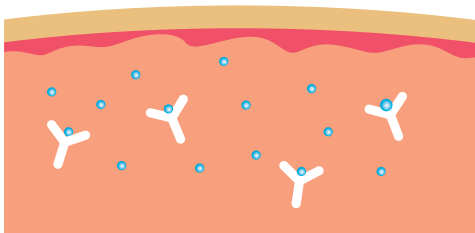


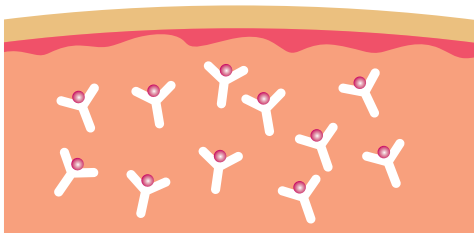
●

●

Y









Match the year to the correct description. Check your answers with page 7 of the book.

1	1796
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☐

After a series of global vaccinations, the last known case of smallpox occurs in Somalia.

2	2017
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☐

English surgeon Edward Jenner uses cowpox, a mild disease, to vaccinate a boy against smallpox. The modern field of vaccination begins.

3	1994
---	------

☐

The rabies vaccine is developed by French scientists Louis Pasteur and Émile Roux.

4	429 BC
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☐

There is a severe outbreak of measles, a vaccine-preventable disease, in Venezuela. It lasts for more than a year, and the Americas risk losing their official measles-free status.

5	1885
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☐

Thucydides, a Greek historian, notices that people who survive the deadly Plague of Athens do not become infected again.

6	1977
---	------

☐

Polio is reported to be completely eliminated in North and South America.



Facing the Issues

Follow the instructions to complete the activity.

NAME

DATE

People have many different opinions about vaccines. Using information found in the book and online, briefly identify and explain the arguments used in favor of and against vaccines.

State which opinion you agree with and why.



True or False

Follow the instructions to complete the activity.

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Using the information in *Vaccines*, verify whether the following information is true or false. Check your answers in the book. List the page number where you found your information beside your answer.

Statement 1	Organ transplant patients should avoid contact with people who have recently received the smallpox vaccine.	☐ True ☐ False	Page Number
Statement 2	It can take 10 to 15 years to develop and test a new vaccine.	☐ True ☐ False	Page Number
Statement 3	Approximately one-half of people feel temporary pain in their joints after the MMR vaccine.	☐ True ☐ False	Page Number
Statement 4	Vaccines against measles, mumps, tetanus, and polio save more than three million lives each year.	☐ True ☐ False	Page Number
Statement 5	Scientists must develop new flu vaccines every year.	☐ True ☐ False	Page Number



Using the information in *Vaccines*, select an answer from the right and write the letter in the box beside the statement.

1. The FDA is very selective. Only this many new drugs were approved in 2017.

A. 11

2. In 2015, this many people across the world died from measles every hour.

B. 30

3. Now there are fewer than this many cases of mumps most years.

C. 15

4. In France, this many vaccines are mandatory.

D. 46

5. The tetanus vaccine lasts for approximately this many years.

E. 3

6. Approximately this percentage of children in the United States are not vaccinated.

F. 10

7. In the first stage of testing a vaccine on humans, it is given to a small group of approximately this many people.

G. 3,000

Quiz

Test your knowledge by answering these questions.

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1 Which three kinds of white blood cells does the body use to fight germs?

2 How many people died because of smallpox in the 20th century?

3 What are some diseases that have been mostly eradicated in the United States because of vaccines?

4 Which U.S. federal agency is responsible for monitoring vaccines?

5 Can vaccines protect unvaccinated people from a disease? Why or why not?

6 In order to stay immune from tetanus, how often do people need a booster dose of the vaccine?

7 Which substance is the most common cause of allergic reactions to vaccines?

8 Which U.S. program collects reports of harmful reactions to vaccines?



Key Words Match-Up

Write the words from the list below in the box above the correct definition for each word.

NAME

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KEY WORDS

adverse
antibodies
antigens
complications
immune system
membranes

mutate
nervous system
paralyzed
pneumonia
seizures
World Health Organization



1.
proteins that disease-causing organisms use to attach themselves to cells in the infected body

2.
extreme twitching of muscles because of unusual brain activity

3.
the body system that uses specialized cells to fight infections

4.
proteins that fight infections by attaching themselves to antigens and destroying them

5.
the body system that picks up and sends nerve impulses to other parts of the body

6.
thin layers of tissue that cover some parts inside the body

7.
the infection of one or both lungs

8.
medical problems that arise in addition to the main disease being treated

9.
an international organization that works to improve public health worldwide

10.
creating harmful results

11.
to develop a new trait as a result of changes to genes

12.
unable to move a part of the body



Debating the Issues

Vaccines

Reference: All Pages

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