AMI Packet

#8

8th Grade

Don't forget to do journals, vocabulary, and read for AR Points!

COMMONLIT

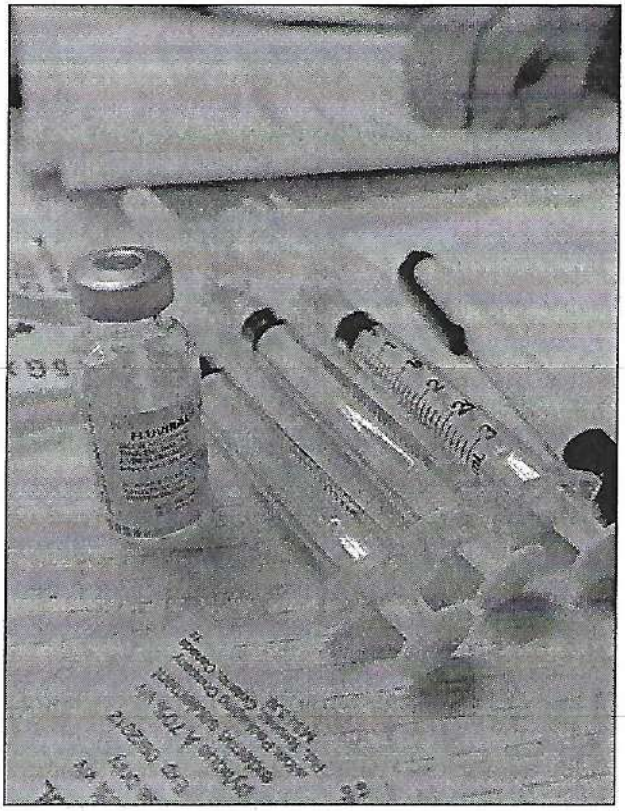
Name: _____ Class: _____

What is a vaccine?

By Lindsey Konkel
2017

In this informational text, Lindesy Konkel describes what a vaccine is and how it affects your body. As you read, take notes on how the human body responds to a vaccine.

[1] The immune system is the body's natural defense against germs. When a germ invades, the immune system sends special cells to fight it off. Sometimes, though, the immune system is not naturally strong enough to prevent a disease from seriously harming someone or even killing them. But there's a way to give the immune system a boost. It's known as a vaccine.



"Flu Vaccination Grippe" by Daniel Paquet is licensed under CC BY 2.0

Vaccines are substances that prepare the immune system to fight a disease-causing germ or other pathogen by imitating an infection. They trick the immune system into making a "memory" of that germ without ever having to fight the real germ in the first place. Now, when the immune system encounters the real pathogen — whether it's a virus, bacterium, or other microbe — it is ready to attack it. As a result, the vaccinated person doesn't get sick.

Before vaccines, many children suffered from debilitating[1] — and killer — illnesses such as measles, polio, smallpox, and diphtheria. A simple scratch could be deadly if it became infected with the bacteria responsible for tetanus (or "lockjaw"). Vaccines, though, have changed this. Smallpox is completely gone from the world, and polio nearly so. Outbreaks of measles and diphtheria are rare, especially in the United States. Tetanus infections continue to decline worldwide.

Vaccinations also can help protect people who can't be vaccinated. These might be babies who are too young to receive a vaccine. Or there might be people who are too ill or too old to be vaccinated. When enough people in a community are vaccinated against a particular contagious[2] disease, there's little opportunity for that disease to spread from person to person. Doctors call this type of community protection "herd immunity."

1. **Debilitating** *(adjective):* making someone very weak
2. **Contagious** *(adjective):* spread from one person or organism to another

How vaccines work

[5] The body is designed to fight off foreign invaders, such as germs. To do this, it needs to be able to distinguish[3] elements of itself from outside agents (nonself). This is the immune system's job — to recognize self from nonself. To achieve this, the immune system is always on the lookout for evidence of foreign stuff, or what scientists refer to as antigens.

Pathogens are covered with tiny particles. Since they look unfamiliar to the human body, the immune system calls out its antigen attack squads. Those antigens are specific to a particular germ. A flu virus and a measles virus, for instance, have different antigens. Even two different types of flu viruses may contain somewhat different antigens.

So when a pathogen enters the body, the immune system dispatches[4] special molecules — antibodies. These Y-shaped proteins patrol for particular antigens. When they find the ones they are trained to deal with, the antibodies go to work. They have two jobs. One is to disarm the threat by locking onto the antigens. This stops the germs from doing further harm. The antibodies also signal other immune cells to come to the site of the infection. Those other immune cells destroy the germs and remove them from the body. This entire process can take several days from the first time the body encounters a new type of germ.

Once an infection goes away, however, it won't be forgotten. The immune system has stored a "memory" of the pathogen's antigens in what are called B cells. These memory cells make antibodies designed to recognize and lock up the antigens for that specific germ. So if the same germ enters the body again, these new antibodies can now recognize it right away. They can direct the immune system to destroy and remove the germ from the body before it multiplies and forms an infection.

This protection against previous illnesses is called immunity. And it's why a child who had chickenpox as a child won't ever come down with that illness again.

[10] One way to build immunity is through infection. A person who survives Ebola, for instance, will never suffer through that disease again. But since infection can damage or kill someone, the second way to build immunity — with a vaccine — is the safer option when it is available. (Scientists haven't yet developed vaccines against every disease. Ebola is one disease for which no vaccine yet exists.)

Some vaccines are made from a weakened form of a disease-causing germ. Others are made from dead or deactivated forms of the germ. Most vaccines are given by injection. Some can be given by mouth or as a nasal spray.

The vaccine won't cause disease, because the weakened germ can no longer copy itself to release new germs inside the body. The immune system, though, doesn't know that the germ's mimic (or vaccine) is weakened or dead. All it sees are the antigens signaling a now-familiar invader. It sends antibodies and other immune cells to stop and destroy the invader. The antibodies "remember" the germ. This creates immunity against future infections with the same type of germ.

3. **Distinguish** *(verb):* to perceive or point out the difference
4. to send off for a purpose

Some antibodies protect for a lifetime. Other times, the immune system's memory of a germ can fade over time. When this happens, immunity can falter and leave a person vulnerable to infection. In these cases, the immune system needs a reminder. These reminders are called boosters. Tetanus is an example. Doctors recommend a tetanus booster every 10 years to maintain good immunity against the disease.

Some germs also change substantially[5] over time — evolve — creating new antigens. Influenza viruses are well known for doing this. Now the old antibodies may no longer recognize the new form of the germ (and antigens) and therefore fail to protect against it. That's why flu vaccines must be given every year. Each new vaccine deals with the latest versions of these ever-changing viruses.

5. **Substantial** *(adjective):* large in amount or degree

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which statement best expresses the central idea of the text?
   A. Vaccines can be a dangerous way to protect the body from diseases, as you have to initially expose the body to disease.
   B. Vaccines are not necessary to protect against diseases, as the body will automatically remember certain diseases and protect against them.
   C. The immune system struggles to remember viruses that it has experienced and needs the help of vaccines to make memories of them.
   D. A vaccine is developed by familiarizing your body with a pathogen so that it can recognize it and keep it from spreading within you and to others.

2. PART B: Which detail from the text best supports the answer to Part A?
   A. "Before vaccines, many children suffered from debilitating — and killer — illnesses such as measles, polio, smallpox and diphtheria." (Paragraph 3)
   B. "The body is designed to fight off foreign invaders, such as germs. To do this, it needs to be able to distinguish elements of itself from outside agents (nonself)." (Paragraph 5)
   C. "The antibodies 'remember' the germ. This creates immunity against future infections with the same type of germ." (Paragraph 12)
   D. "Now the old antibodies may no longer recognize the new form of the germ (and antigens) and therefore fail to protect against it." (Paragraph 14)

3. How does paragraph 3 contribute to the development of ideas in the text?
   A. It emphasizes the positive impact that vaccines have had on people's overall health.
   B. It shows how potentially dangerous some diseases can be to people.
   C. It reveals that not everyone takes vaccines to protect against these diseases.
   D. It stresses how some diseases continue to persist despite vaccines.

4. What is the author's purpose in the article?
   A. to encourage people to get as many vaccines as they can
   B. to explain how vaccines help the immune system
   C. to warn people about the dangers of not taking vaccines
   D. to emphasize the incredible abilities of the immune system

5. What is the relationship between exposure to a virus and developing an immunity to it? Cite evidence from the text to support your response.

Discussion Questions

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. Have you ever received a flu vaccine? If so, what did it feel like? Did the vaccine successfully protect you from the flu?

2. In the text, the author describes the benefits of receiving vaccines. Are there disadvantages? Why do you think some people might choose not to get vaccinated?

3. Vaccines work by tricking the body into remembering an illness you never had. Do you know any other ways where science has allowed humans to take control over nature?

NAME _____ CLASS _____ DATE _____

for CHAPTER 25: SPELLING pages 656–66

Review C: Spelling Rules

EXERCISE A For items 1–5, spell the word correctly, adding the given prefix. For items 6–10, write the plural form of the word given.

Examples **1.** il + legible = *illegible*

2. 1900 *(plural)* = *1900's*

1. un + real = _____

2. re + tell = _____

3. in + secure = _____

4. mis + spell = _____

5. over + run = _____

6. hoof *(plural)* = _____

7. deer *(plural)* = _____

8. woman *(plural)* = _____

9. fox *(plural)* = _____

10. C *(plural)* = _____

EXERCISE B In each of the following sentences, underline the correct spelling of the word in parentheses.

Example **1.** I'm *(writeing, writing)* ~~to tell you some good news.~~

11. My older sister Holly has known her boyfriend since they were *(childs, children)*.

12. Holly and Dirk talked about their *(engagement, engagment)* last night.

13. They'll announce it *(formaly, formally)* in the newspaper.

14. We hope the wedding turns out to be a *(joyous, joious)* event.

15. The whole family is sharing their *(happiness, happyness)*.

16. Tomorrow, Mom will help Holly shop for a dress and *(veil, viel)*.

17. You will *(recieve, receive)* your wedding invitation in a few weeks.

18. I'm sure that Holly and Dirk will *(succede, succeed)* in planning a special ceremony.

19. My little cousin Mary will *(preseed, precede)* Holly down the aisle as flower girl.

20. Close *(friends, freinds)* will be bridesmaids and groomsmen.

MECHANICS

NAME _____ CLASS _____ DATE _____

for CHAPTER 25: SPELLING pages 666–77

Review B: Words Often Confused

EXERCISE A For each of the following sentences, underline the word or words in parentheses that correctly complete the sentence.

Example 1. I believe *(its, it's)* your turn to rake the leaves.

1. The legislature meets on the second floor of the *(capital, capitol)*.
2. Willard took his sister's *(advice, advise)* and went to the party.
3. The coach said we're not *(quiet, quite)* ready to compete.
4. Are you *(already, all ready)* for your trip?
5. I hope you counted every *(peace, piece)* of luggage.
6. When I had the flu, I felt very *(weak, week)*.
7. The small *(plane, plain)* flew over the Grand Canyon.
8. Can you *(hear, here)* me?
9. I hope to take a cooking *(coarse, course)* this summer.
10. That decision might *(affect, effect)* your job.

EXERCISE B In the following paragraphs, underline the word or words in parentheses that correctly complete each sentence.

Example [1] Would you like to *(hear, here)* about the play *Macbeth* by William Shakespeare?

The [11] *(principal, principle)* character, Macbeth, is [12] *(altogether, all together)* too ambitious for his own good. When he hears a prediction that he will be the new king, he [13] *(accepts, excepts)* it as the truth. His wife, Lady Macbeth, greatly [14] *(affects, effects)* Macbeth's [15] *(coarse, course)* of action.

When the king visits Macbeth's castle, Macbeth and his wife are ready to proceed with [16] *(their, there, they're)* plan. While the king sleeps, Macbeth slips [17] *(past, passed)* the guards and does a terrible deed.

Macbeth mistakenly believes that nothing now can [18] *(altar, alter)* his plan to be king. He gains the throne but [19] *(looses, loses)* his [20] *(peace, piece)* of mind. Lady Macbeth loses her sanity.

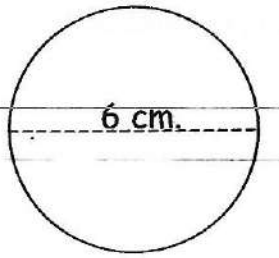
Show your work! Show your work! Show your work!

Day 8

Name _____

1) Find the circumference and area of each circle:

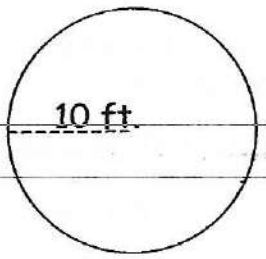
a)



C = _____ or _____

A = _____ or _____

b)



C = _____ or _____

A = _____ or _____

2) Solve for x if y = 7:

a) $y = x + 24$ b) $y = -2x - 26$ c) $y = -3x - 11$ d) $y = 6x - 1$

3) Solve for y if x = -1:

a) $y = x + 12$ b) $y = 6x - 31$ c) $y = 2x - 14$ d) $y = 4x - 15$

4) Try to reduce before you compute the answers! (This will help when you are trying to reduce.)

a) $\frac{12}{30} \cdot \frac{9}{12} =$ b) $\frac{25}{24} \cdot \frac{8}{10} =$ c) $\frac{72}{72} \cdot \frac{72}{72} =$ d) $\frac{20}{12} \cdot \frac{16}{30} =$

Show your work! Show your work! Show your work!

COMMONLIT

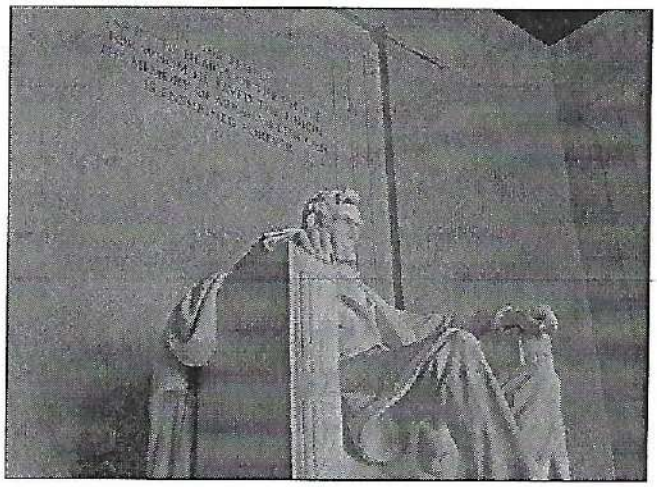
Name: _____ Class: _____

Honest Abe

By Barbara Radner
2005

Abraham Lincoln (1809-1865) was the 16th President of the United States. He served from March 1861 until he was famously assassinated in 1865. He is best remembered for his characteristic honesty and his steady leadership of his country throughout the Civil War. During his time as president, he strengthened the United States government and abolished slavery. As you read, take notes on the ways the author supports the idea that Lincoln was an honest person.

[1] This history tells about what happened while Abe Lincoln had a job working in a store in a small town. Every day people came and bought things they needed there. It was a frontier community.[1] People did not have any extra money to spare. This story tells you about his character. As you read, think about the traits he shows by what he does.



"Abraham Lincoln Memorial, Washington DC" by Samir Luther is licensed under CC BY-SA 2.0

Abe Lincoln could not endure the thought of cheating anyone, even though it had been done unintentionally.[2] He took great care of the money at the store. But some days there were mistakes. He always made sure to correct them.

One day a woman bought goods in Offutt's store[3] amounting to something over two dollars. She paid Abe the money and went away satisfied. That night, while going over the sales of the day, Abe found that he had charged the woman six and one-fourth cents too much. After closing the store, though it was late, he could not go home to supper or to bed till he had restored[4] that sixpence to its proper owner. She lived more than two miles away, but that did not matter to Abe Lincoln. He walked all the way there—and back.

Another evening, as he was closing the store, a woman came in for a half-pound of tea. He weighed it out for her and took the pay. But early next morning, when he came to "open up," he found the four-ounce weight instead of the eight-ounce on the scales, and inferred[5] that he had given that woman only half as much tea as he had taken the money for. Of course, the woman would never know the difference, and it meant walking several miles and back, but the honest clerk weighed out another quarter pound of tea, locked the store and took that long walk before breakfast.

[5] J. G. Holland wrote, in his book Life of Abraham Lincoln, of the young man's progress during his first year in New Salem:

1. "Frontier community" refers to an area on the outskirts of developed society, in which not many people live.
2. **Unintentionally** *(adverb):* unplanned or accidentally
3. Denton Offutt owned and operated a general store in New Salem, Illinois during the 19th century.
4. **Restore** *(verb):* to return to a former condition, place, or position
5. **Infer** *(verb):* to form (an opinion) from evidence

"The year that Lincoln was in Denton Offutt's store was one of great advance. He had made new and valuable acquaintances,[6] read many books, won multitudes[7] of friends, and become ready for a step further in advance. Those who could appreciate brains respected him, and those whose ideas of a man related to his muscles were devoted[8] to him. It was while he was performing the work of the store that he acquired the nickname, 'Honest Abe'—a characterization that he never dishonored, that he never outgrew... He was everybody's friend, the best-natured, the most sensible,[9] the best-informed, the most modest and unassuming,[10] the kindest, gentlest, roughest, strongest, best fellow in all New Salem and the region round about."

6. **Acquaintance** *(noun):* someone who is known but is not a close friend
7. **Multitude** *(noun):* a large number
8. **Devote** *(verb):* to apply or dedicate (something) to some pursuit or cause
9. **Sensible** *(adjective):* likely to be of benefit; practical
10. **Unassuming** *(adjective):* modest

Directions: Read "Honest Abe" and answer the following prompt.

Prompt: Many believe that Lincoln's storied honesty made him a good president. In a 5 paragraph essay answer the following question:

What sorts of qualities do you think it is important for a leader to have? Why?

Day 8

Name _____ Date_____ Class_____

William celebrated his birthday at his house. Around noon he tied 3 balloons to his mailbox to help his friends find his house. The balloons were fully inflated. The next morning William noticed that the balloons had deflated to about half the size they were the day before. As the day went on William noticed that his balloons seemed to be getting bigger and were close to their original size. William's sisters, Emma and Josie tried to help him solve the mystery.

Josie's hypothesis

During the night the wind was not blowing. The air inside the balloons was putting an unequal pressure on the balloons and therefore the air was able to escape through tiny holes in the balloons. The next day the wind started blowing again and filled the balloons back up with air being blown through tiny holes in the balloons.

Emma's hypothesis

Warm air takes up more space than cooler air. The balloons were inflated during the day when it was warmer outside. The temperature dropped throughout the night. As the air in the balloons cooled the air took up less space causing the balloons to deflate. As the sun came up and the temperature began to climb the air inside the balloons began to expand re-inflating the balloons.

1. According to the passage, which sister would agree that the balloon would not have deflated if the wind would have been blowing throughout the night? _____

2. According to the passage, Emma hypothesized that _____ was the cause of the change in the balloons deflating and inflating.

3. William placed a balloon in the freezer for several hours, according to Emma what should happen to the balloon? Use evidence from the passage to support your answer.

4. The following day Will noticed that the wind was not blowing and the balloons were still inflated. Is this information consistent with Josie's hypothesis? Use evidence from the passage to support your answer.

5. Will's mother once told him that hot air balloons use warm air to fly. The air heats up and expands causing the air in the balloon to be less dense than the surrounding air. The less dense air rises causing the hot air balloon to rise as well. According to the passage would Emma agree or disagree with her mother? Use evidence from the passage to support your answer.