

8th Grade, Lewis County Middle School NTI Day 19

Contents:

- Language Arts
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- Social Studies

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English Word Origins Continued - Day 19

Continue Reading the essay about etymology. Use the Close Reading and the Hint to help you answer the question.

The author does not directly state the central idea in the text on the previous page. In the right column, jot your ideas about the implied central idea of this part of the text.

<p>Next, consider the varied origins of some English words related to money. The word money itself comes from Moneta, another name for the Roman goddess Juno, near whose temple in ancient Rome coins were made. The name of our paper money, dollar, originates from a place name. A widely-circulated German coin in the 1500s was called a Joachimstaler (yo-AHK-imz-tall-er). It was named after the town of Joachimstal, near the silver mine from which came the metal to make the coin. The coin's name shortened to "taler," which later became dollar, and the meaning broadened to refer to money in general.</p>	<p>What is the topic (2-3 words) of this paragraph?</p> <p>What is the central idea (1 sentence) of this paragraph?</p>
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Circle or highlight the correct answer. (Hint: Which choice restates the central idea and important details and does not include opinion or judgements?)

1. Which of the following is the best summary of the text on this page?
 - a. The English word dollar originates from ancient rome, and the English word money originates from a German coin.
 - b. Remarkably, ancient Rome was one of several sources of English money words. Another source was sixteenth-century Germany.
 - c. The origins of English money words are varied. Some words, like money, are from Rome, while others, like dollar, have German roots.
 - d. The origins of money-related words are interesting. For example, money comes from the name of the Roman goddess Juno.

Show Your Thinking

Why is the answer you chose the best summary of this part of the text?

1. The first step in the process of the scientific method is to ask a question. This question should be based on a problem or a hypothesis that you want to test.

2. The second step is to do background research. This involves looking up information about the topic you are studying to see what is already known.

3. The third step is to form a hypothesis. A hypothesis is a statement that you can test. It should be based on the background research you have done.

4. The fourth step is to design an experiment. This involves deciding what you will do to test your hypothesis. You should make sure that your experiment is fair and that you can control the variables.

5. The fifth step is to collect data. This involves doing the experiment and recording the results. You should make sure that you are accurate and that you have enough data to draw a conclusion.

6. The sixth step is to analyze the data. This involves looking at the results of your experiment and seeing if they support your hypothesis. You should use statistics to help you with this.

7. The seventh step is to draw a conclusion. This involves stating whether your hypothesis was supported or not. You should also discuss any limitations of your experiment.

8. The eighth step is to communicate your results. This involves writing a report or giving a presentation about what you have found.

9. The ninth step is to repeat the experiment. This is to make sure that your results are reliable and that you can reproduce them.

10. The tenth step is to share your results with the scientific community. This is to let other scientists know what you have found and to see if they agree with you.

11. The eleventh step is to use your results to answer the question you asked at the beginning. This is the final step in the scientific method.

12. The twelfth step is to use your results to make a prediction. This is to see if you can use what you have learned to predict what will happen in the future.

13. The thirteenth step is to use your results to make a model. This is to create a representation of what you have learned that can be used to explain what is happening.

14. The fourteenth step is to use your results to make a theory. This is to create a statement that explains what you have learned and that can be used to predict what will happen in the future.

15. The fifteenth step is to use your results to make a law. This is to create a statement that describes what you have learned and that can be used to predict what will happen in the future.

16. The sixteenth step is to use your results to make a paradigm. This is to create a set of ideas that explain what you have learned and that can be used to predict what will happen in the future.

17. The seventeenth step is to use your results to make a revolution. This is to create a new set of ideas that explain what you have learned and that can be used to predict what will happen in the future.

18. The eighteenth step is to use your results to make a new paradigm. This is to create a new set of ideas that explain what you have learned and that can be used to predict what will happen in the future.

19. The nineteenth step is to use your results to make a new law. This is to create a new statement that describes what you have learned and that can be used to predict what will happen in the future.

20. The twentieth step is to use your results to make a new theory. This is to create a new statement that explains what you have learned and that can be used to predict what will happen in the future.

21. The twenty-first step is to use your results to make a new model. This is to create a new representation of what you have learned that can be used to explain what is happening.

22. The twenty-second step is to use your results to make a new prediction. This is to see if you can use what you have learned to predict what will happen in the future.

23. The twenty-third step is to use your results to make a new hypothesis. This is to create a new statement that you can test. It should be based on the background research you have done.

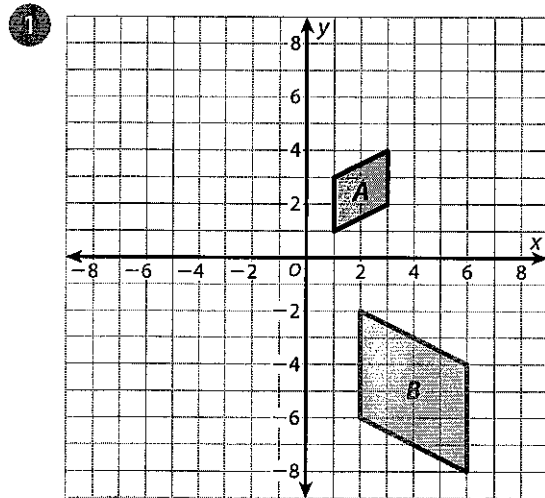
24. The twenty-fourth step is to use your results to make a new question. This is to create a new problem or a hypothesis that you want to test.

Transformations that can be used: translation, reflection, rotation, dilation

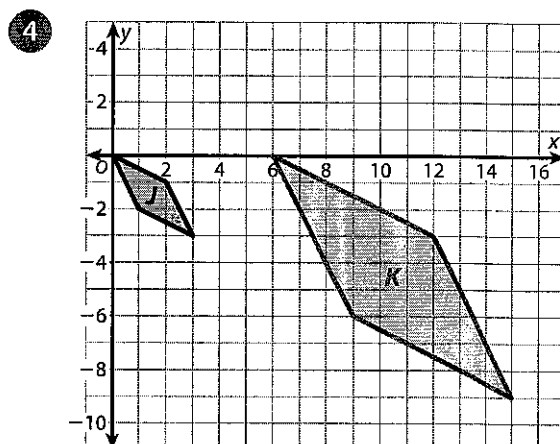
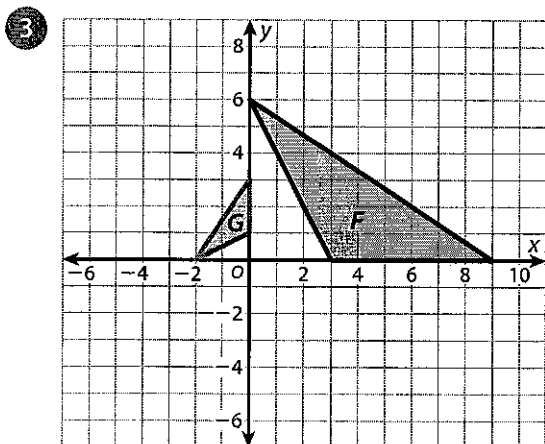
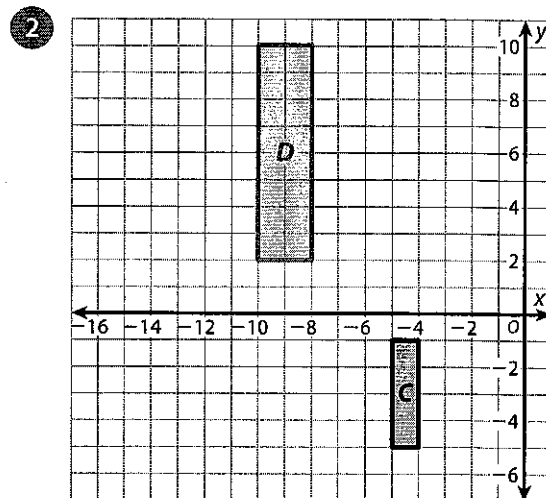
#1 is done for you as example

Describing Sequences of Transformations Involving Dilations

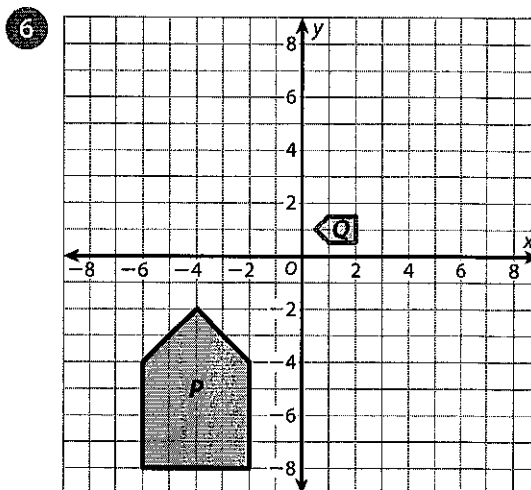
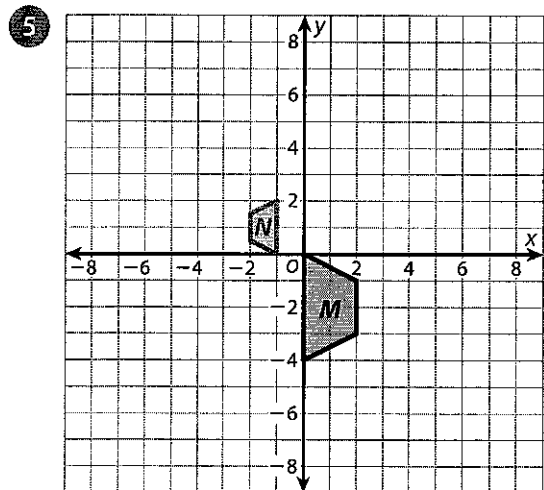
- For each pair of figures, describe a sequence of three or fewer transformations that can be used to map one figure onto the other.



rotation, translation,
and dilation



Describing Sequences of Transformations Involving Dilations *continued*



- 7 Give an example of a sequence of transformations that can be performed in any order and will result in the same image.
- 8 Give an example of a sequence of transformations for which changing the order results in a different final image.

11.2 Predicting Heredity

genes 8th grade

When Mendel published his work in the 1800s, he did not use the word "gene" to describe his units of heredity. He also wasn't sure where his units might be found or how to identify them. His work went unnoticed for almost thirty years. In 1902, American scientist Walter Sutton (1877 to 1916) examined the nuclei of grasshopper cells under a microscope. He observed that chromosomes occurred in homologous pairs that separated during meiosis. A year later, Sutton found that chromosomes contained *genes*. He had discovered Mendel's units of heredity! In this section you will learn how Mendel's work is used to predict the heredity of offspring.

How traits are passed on to offspring

Genes and alleles Mendel developed the basic laws of how traits are passed on to offspring (Figure 11.8). He did not know about genes, chromosomes, DNA, or meiosis. The laws stated below combine the work of Mendel and Sutton.

1. Individual units called genes determine an organism's traits.
2. A gene is a segment of DNA, located on the chromosomes, that carries hereditary instructions from parent to offspring.
3. For each gene, an organism typically receives one allele from each parent.
4. If an organism inherits different alleles for a trait, one allele may be dominant over the other.
5. The alleles of a gene separate from each other when sex cells are formed during meiosis.

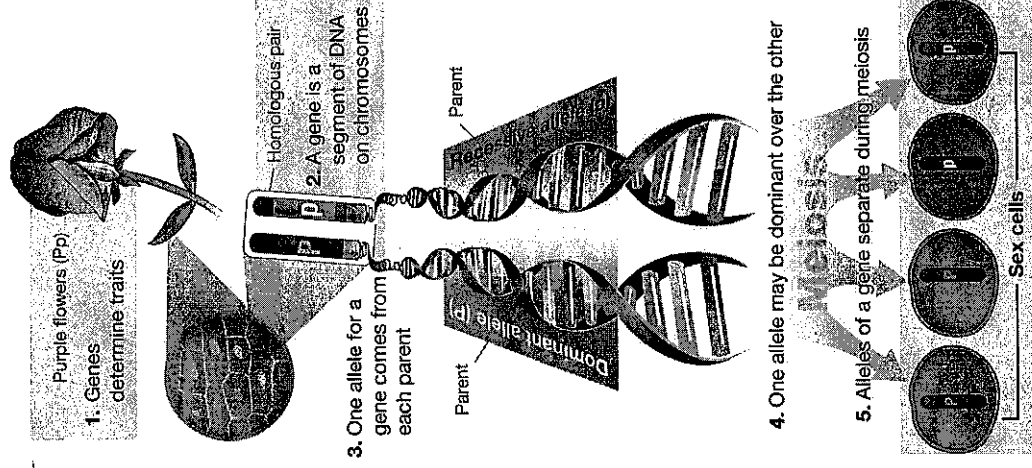


Figure 11.8: The principles of how traits are passed on to offspring.

Alleles and meiosis

Alleles of a gene separate during meiosis In the last chapter, you read that homologous pairs of chromosomes separate during meiosis. Since alleles of a gene are found in corresponding locations on homologous pairs of chromosomes, they also separate during meiosis.

How do alleles separate? To illustrate how alleles separate, let's follow the alleles for the flower color trait in a pea plant with the genotype Pp . The plant in our example has a dominant allele (P) and a recessive allele (p). What is the phenotype of the plant? You are correct if you said purple! Figure 11.9 shows what happens to the alleles during meiosis. To keep it simple, only one pair of chromosomes is shown. A real pea plant has 14 chromosomes (7 pairs).

Fertilization When fertilization occurs, offspring inherit one homologous chromosome in a pair from each parent. As a result, one allele for a gene also comes from each parent. When Mendel crossed pure-breeding, purple-flowered plants with pure-breeding, white-flowered plants, the first generation offspring were purple with the genotype Pp . The diagram below traces the alleles from parent to offspring.

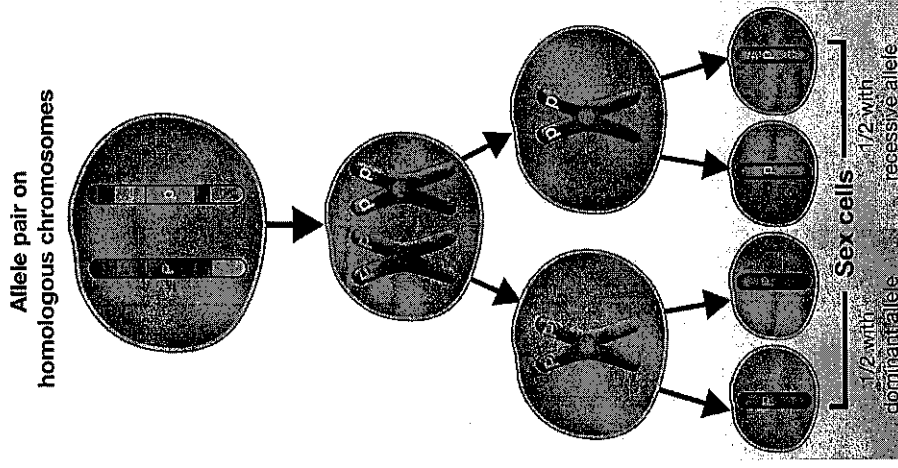
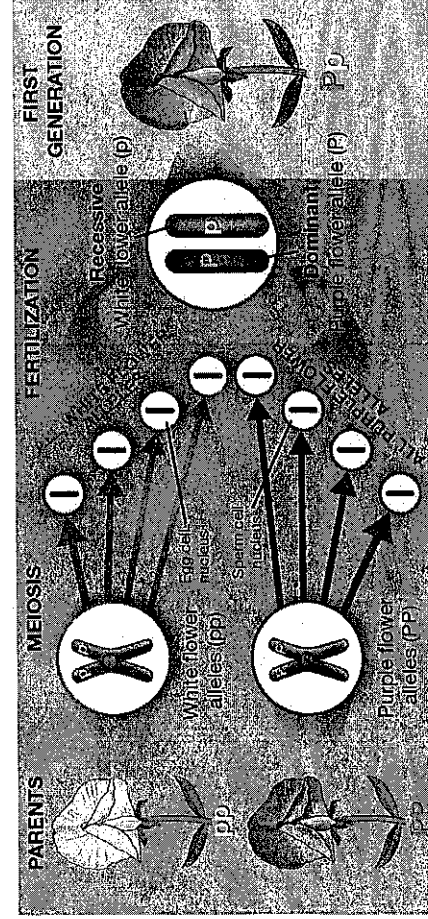


Figure 11.9: Alleles of a gene are found in corresponding locations on homologous pairs of chromosomes.

Predicting genotype and phenotype

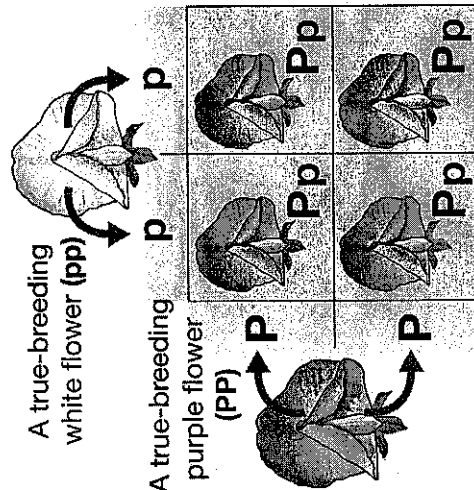
Punnett squares

You can predict the genotypes and phenotypes of offspring if you know the genotypes of the parents. A **punnett square** shows all of the possible combinations of alleles from the parents. Figure 11.10 shows how a punnett square is made.

You can predict the possible genotypes and phenotypes of offspring if you know the genotypes of the parents.

A punnett square of Mendel's first cross

You can use a punnett square to show Mendel's first cross. He crossed a true-breeding, purple-flowered plant with a true-breeding, white-flowered plant. Since the purple-flowered plant is true-breeding, it has two dominant alleles. The genotype of the purple-flowered plant is **PP**. Since white flowers are recessive, the only possible genotype for a white-flowered plant is **pp**.



Analyzing the punnett square

As you can see, all of the offspring in Mendel's first cross had a genotype of **Pp**. That's why all of the plants in the first generation had purple flowers. Using a punnett square, you can predict the possible genotypes and phenotypes of the offspring. In the example above, the only possible genotype is **Pp** and the only possible phenotype is purple flowers.

VOCABULARY

punnett square - shows all of the possible combinations of alleles from the parents.

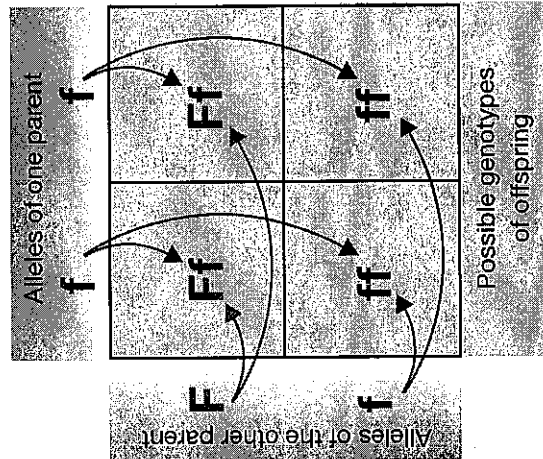


Figure 11.10: The parts of a punnett square.

SOLVE IT!

In the punnett square shown in Figure 11.10, F = free earlobes and f = attached earlobes. What is the genotype and phenotype of each parent? What are the possible genotypes and phenotypes of their children?

Punnett squares and probability

A punnett square of Mendel's second cross When Mendel let the **Pp** plants self-pollinate, white flowers showed up in the second generation. Figure 11.11 shows a punnett square of the cross. Recall that when Mendel counted the plants, he found a 3:1 ratio of purple to white flowers. There are three possible genotypes from the cross. Of the three, **PP**, and **Pp** are purple because they have the dominant allele. Only one of the three (**pp**) is white. From looking at Figure 11.11, can you see why there is a 3:1 ratio of purple-flowered to white-flowered plants?

Probability When you flip a coin, there is a 50 percent chance you'll get heads and a 50 percent chance you'll get tails. The way the coin lands is completely random. Like flipping a coin, the chance of inheriting a certain genotype and phenotype is random. **Probability** is the mathematical chance that an event will occur.

Punnett squares and probability Probability can be expressed as a fraction or a percentage. A punnett square represents all of the *possible* genotypes of offspring. In Figure 11.11, 1 out of the 4 squares is **pp**. The probability of offspring having **pp** is therefore 1/4. To convert this to a percentage, take the numerator of the fraction divided by the denominator and multiply by 100:

$$\frac{1}{4} \times 100 = 25\%$$

There is a 25 percent chance of offspring having the **pp** genotype. What is the probability of offspring having purple flowers? **PP**, and **Pp** have purple flowers. That's 3 out of the 4 squares. The probability is:

$$\frac{3}{4} \times 100 = 75\%$$

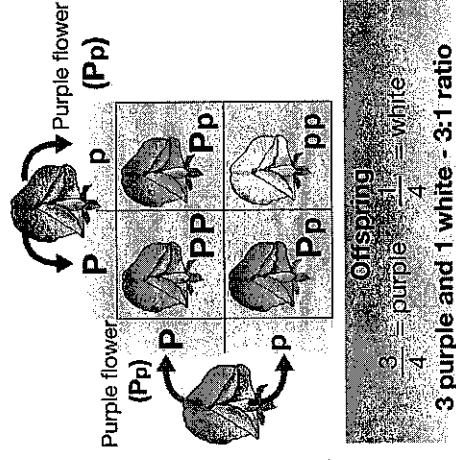


Figure 11.11: A cross between pea plants of the first generation. The plants have a dominant and recessive allele. Can you see why white flowers showed up in the second generation?

VOCABULARY

probability - the mathematical chance that an event will occur.

Jones 8th grade Science

NTI Day 19-Heredity-Predicting Heredity.

Materials

- CPO life science Ebook that is uploaded into google classroom
- 5 question quiz

Task

- Students read pages 221-224 in chapter 11.
- Students complete a 5 question quiz.

Quiz-Section 11.2

1. The mathematical chance that an event will occur is called_____.

- a) Probability
- b) Trait
- c) Dominate allele
- d) Codominance
- e) Heredity

2. Individual units called genes determine and organism's traits.

- a) True
- b) False

3. If the genotype of the parents are known, a(n) _____ can be used to show the possible genotypes and phenotypes of the offspring.

- a) Probability
- b) Trait
- c) Punnett square
- d) Codominance
- e) Heredity

4. A gene is a segment of _____ that carries heredity instructions from parent to offspring.

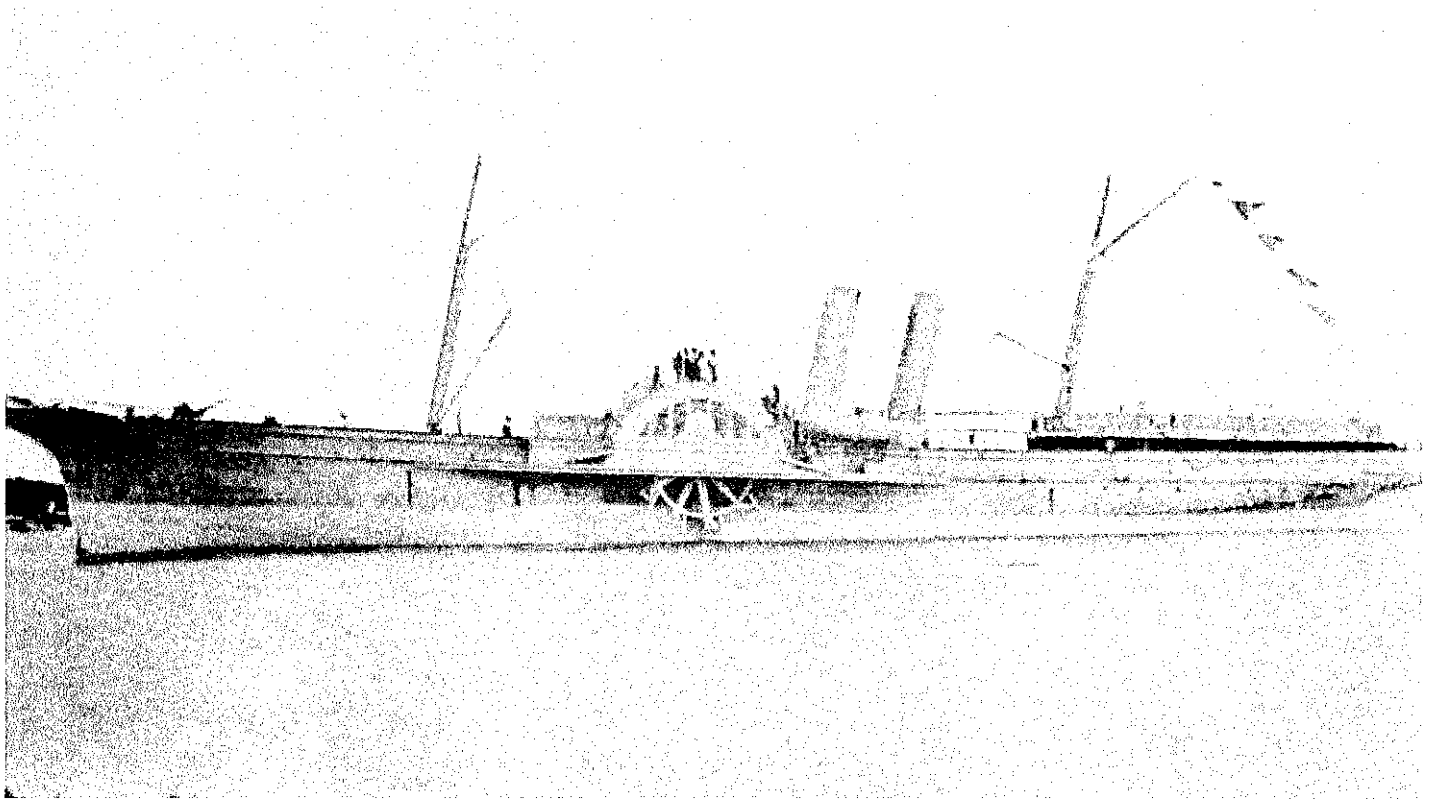
- a) Alleles
- b) Chromosomes
- c) Dominate allele
- d) DNA
- e) zygote

North diplomacy: preventing Europe from recognizing the Confederacy

By Office of the Historian, Foreign Service Institute, United States Department of State, adapted by Newsela staff on 02.12.20

Word Count 792

Level 1080L



The SS A.D. Vance after its capture as a Confederate blockade runner by the USS Santiago de Cuba during the U.S. Civil War. Blockade runners were ships used to get through the Union blockade of Confederate ports. Photographer unknown. Photo from: Wikimedia Commons

One of the most important victories won by the United States during the Civil War was not fought on a battlefield. Rather, it was a series of diplomatic victories – victories in managing the relationship between the U.S. government and foreign governments. These victories ensured that no foreign state would grant official recognition to the Confederacy as a separate country.

Several factors played a role in this victory. For one, the Northern diplomats were skillful at their job of managing official relationships between governments. Additionally, the people of Europe were strongly against slavery. However, the most important factor came from the Civil War battlefields. The Confederate states were unable to win enough battles in a row to convince European governments that they could keep independence going.

One of the diplomatic battles that took place at the start of the conflict was that of the Northern naval blockade of Southern ports. This was the first major test of whether foreign governments

would officially recognize the Confederate States of America. If they would not, then the question was whether they would rule the Northern blockade to be against international law.

The Impact Of Northern Blockade

The Confederacy began the war effort confident that European countries – especially Great Britain – would become their natural allies. The South's main product was cotton and it sold millions of half-ton bales of it. Much of the cotton that was farmed by enslaved people in the South was shipped to Great Britain and Europe. These countries had textile factories that needed cotton in order to produce cloth and fabrics.

The Confederacy was certain that, once they declared secession and broke away from the United States, their ports would be blockaded by the North. This would mean that the U.S. Navy would keep Southern ships from leaving port, preventing the South from maintaining its economy. They would no longer be able to make money selling products to foreign countries.

An Internal Rebellion

The South believed that if the North's blockade was successful in cutting off cotton exports, the British economy would be affected, too. A lack of cotton providers would throw millions of British textile workers out of work. Britain would have to send its superior navy to break the Northern blockade. This would provoke a war between the United Kingdom and the Union states that would allow the Confederacy to solidify independence and gain international recognition. The North wanted foreign countries to see the South's actions as rebellion from inside the U.S., not as a struggle between two countries. The last thing the U.S. wanted was for the Confederacy to gain international standing as a country.

If, however, European powers did not grant recognition to the Confederacy, would they agree that the conflict on American soil was an internal rebellion? In that case, the blockade would be against international law. A naval blockade could only be used between independent countries – not against a nation's own people who are rebelling. So, the legal and political implications of the blockade took on greater significance; if the U.S. President Abraham Lincoln went forward with the blockade, he undermined his own insistence that the war was an internal rebellion.

Britain's Declaration Of Neutrality

In April 1861, when the Union did declare a blockade upon the rebel states, the European response was not what the South or the North might have hoped for. In May, Britain responded to the blockade with a declaration of neutrality and other European countries later did the same. This meant that Britain saw the conflict between the Confederacy and the Union as one between belligerent powers. It did not see the conflict as one country with a rebellion. This acceptance of the South as a belligerent could be seen as a step toward their recognition as an independent country. As a belligerent, the Confederacy could now get loans and purchase supplies in neutral nations and its warships would be treated with the same respect as Union warships in neutral ports. The Union was furious.

The U.S. Secretary of State William H. Seward did not want any further international recognition of the rebels. He, therefore, sent a message warning the British not to become friendly "with our domestic enemy," or they would risk an Anglo-American war. The Union, however, realized that Europe's declarations of neutrality also meant that the blockade had official acceptance.

Diplomatic Victory For The North

The Northern blockade did, in fact, cause high unemployment in the British and French textile regions. The countries, however, developed other supplies of cotton. The blockade's pressure on textile manufacturing centers of Europe did not, however, push them to recognize the South or to declare the blockade illegal. These were important diplomatic victories for the North.

Quiz

Social Studies
Day 19

1 Read the following claim.

The goal of the Union's diplomacy was to prevent the South from being considered independent from the North by other countries.

Which sentence from the article provides the BEST support for the statement above?

- (A) These victories ensured that no foreign state would grant official recognition to the Confederacy as a separate country.
- (B) This was the first major test of whether foreign governments would officially recognize the Confederate States of America.
- (C) The Confederacy was certain that, once they declared secession and broke away from the United States, their ports would be blockaded by the North.
- (D) This would provoke a war between the United Kingdom and the Union states that would allow the Confederacy to solidify independence and gain international recognition.

2 Which section of the article BEST explains why the British and French didn't oppose the Northern blockade?

- (A) "The Impact Of Northern Blockade"
- (B) "An Internal Rebellion"
- (C) "Britain's Declaration Of Neutrality"
- (D) "Diplomatic Victory For The North"

3 According to the article, why did the South think it would receive support from Europe?

- (A) because it thought Europe would share its feelings toward the Union
- (B) because it thought Europe would agree with the secession
- (C) because it thought Europe needed the South's cotton
- (D) because it thought Europe needed the South's military support

4 How did the Northern blockade affect the Southern economy?

- (A) It hurt the economy because Southern ships couldn't leave the port to trade.
- (B) It hurt the economy because the Southern states couldn't keep slaves.
- (C) It helped the South's economy because Europe wanted more cotton.
- (D) It helped the South's economy because Great Britain declared neutrality.

