

# Gregor Mendel Mini Quiz Pack

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## How to Use This Book

Welcome to the Gregor Mendel Mini Quiz Pack! This book is divided into seven quizzes and one research project to help your student better understand the life, times, and work of Gregor Mendel. An answer key is included for each of the quizzes.

There are many ways to use this pack in your studies:

- It is perfect for review after students have studied Mendel and genetics in science.
- Parents and teachers can use the pack to help create a list of ideas or areas you wish to explore as you plan your study.
- Students can use the book as a starting point for independent study. Have students take the quizzes to the library or use them at the computer to search for the answers to the questions. Allow plenty of time for rabbit trails so students can investigate facts and stories they discover as they complete their pack.
- It can also be used as a tool to help students practice and sharpen research and notetaking skills. Have students record where they find the answers to each question as they would if they were doing research for a paper or presentation. You can also use this record of sources to help them dig deeper into the topics that interest them.

However you use the pack in your curriculum, I hope you find many fascinating details to discuss with your students!

## True or False

Write T for true or F for False on the line before each of the statements below. If the statement is false, see if you can correct it.

- \_\_\_\_1. Mendel experimented with garden peas by cross-pollinating them to learn what traits would be "inherited" by the next generation of pea plants.
- \_\_\_\_2. He found that when two plants with a different trait were bred together, one of the different traits never showed up in later generations.
- \_\_\_\_3. Even though his theories were published in 1866, no one paid much attention to them until 1920.
- \_\_\_\_4. The two main conclusions that Mendel came to are known as his *Law of Segregation* and his *Law of Dependent Assortment*.
- \_\_\_\_5. To explain why some traits showed in plants more often than others, Mendel used the terms "dominant" and "suppressed."
- \_\_\_\_6. Mendel credited the action of what he called "factors" in determining the traits of the plants. We now call these factors "genes."
- \_\_\_\_7. Although Mendel's family was very poor, he was very talented and able to get more education than many in his time.
- \_\_\_\_8. It was not until fifty years after his death that the scientific community realized the importance of his research.
- \_\_\_\_9. Between 1854 and 1863, Mendel studied almost 28,000 plants to test his theories.
- \_\_\_\_10. At the time Mendel was doing his research, a common theory was that inherited traits were blended in the later generations, not suppressed to show up later.
- \_\_\_\_11. Mendel came to the conclusion that traits are passed on to each generation through a pair of what we now call genes, one coming from the mother and the other from the father.
- \_\_\_\_12. Mendel was the first to put a mathematical foundation to the science of genetics, in what was then known as heredicism.

## Gregor Mendel's World

Match the event with the year(s) it happened during the lifetime of Gregor Mendel.

- |          |   |    |           |
|----------|---|----|-----------|
| _____1.  | Elizabeth Blackwell is the first American woman to receive a medical degree             | a. | 1881      |
| _____2.  | David Livingstone is the first European to travel across Africa (coast to coast)        | b. | 1869      |
| _____3.  | Clara Barton founds the American branch of the Red Cross                                | c. | 1843      |
| _____4.  | Winston Churchill is born   | d. | 1829      |
| _____5.  | Charles Dickens writes <i>A Christmas Carol</i>   | e. | 1849      |
| _____6.  | India comes under the control of the British government                                 | f. | 1865      |
| _____7.  | The Suez Canal opens  | g. | 1874      |
| _____8.  | The American Civil War ends   | h. | 1836      |
| _____9.  | Germany becomes united under Kaiser Wilhelm I   | i. | 1853-1856 |
| _____10. | Charles Wilkes leads a United States Navy mission that proves Antarctica is a continent | j. | 1866      |
| _____11. | Charles Sturt discovers the Darling River in Australia                                  | k. | 1858      |
| _____12. | American artist Mary Cassatt is born  | l. | 1871      |
| _____13. | The Seven Weeks' War between Austria and Prussia occurs                                 | m. | 1848      |
| _____14. | Texas wins independence from Mexico   | n. | 1844      |
| _____15. | The United States wins the Mexican War  | o. | 1838-1842 |

## Mendel's Contemporaries

During the time that Gregor Mendel lived, there were many scientists and inventors making new discoveries and expanding scientific knowledge in ways we take for granted today. See if you can choose the correct scientist/inventor for each of the statements below by underlining his name.

1. A Scottish scientist best known for his work in the field of electricity and magnetism, he showed that electromagnetic waves travel at the speed of light.

William Henry Fox Talbot

James Clerk Maxwell

Elisha Graves Otis

2. An important American scientist, he researched the chemical composition of a meteorite that fell to the earth in 1807. He was a professor at Yale and had a mineral named after him.

Benjamin Silliman

William Henry Fox Talbot

Matthew Fontaine Maury

3. An American inventor who built the first elevator that had an automatic safety device which prevented the elevator from falling if the rope that held it broke.

Matthias Jakob Schleiden

Elisha Graves Otis

Elmer Ambrose Sperry

4. A Scottish scientist who invented the kaleidoscope and studied the polarization of light.

James Clerk Maxwell

William Bayliss

Sir David Brewster

5. An African American scientist who did agricultural research, especially work with peanuts, pecans, and sweet potatoes.

Samuel Morse

George Washington Carver

Elisha Graves Otis

6. A Danish doctor and scientist, he experimented with the concentrations of light rays and their healing effects. He was the founder of phototherapy.

Niels Ryberg Finsen

Nikola Tesla

Theodor Schwann

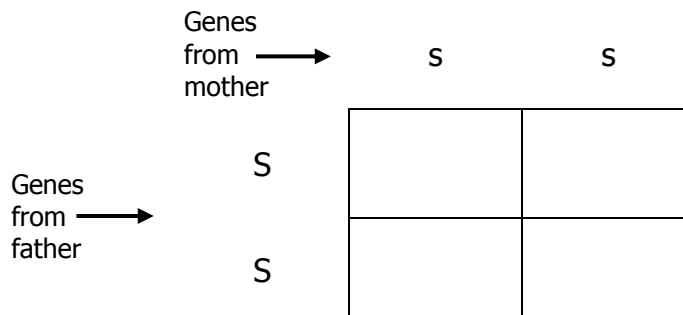
7. A British scientist, he invented the negative-positive system in photography. He published the first book that was illustrated with photographs.

Sir David Brewster

Matthew Fontaine Maury

William Henry Fox Talbot

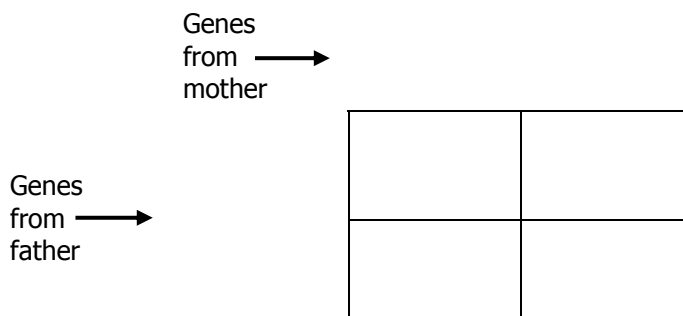
Now, it is your turn. The pea plants that Gregor Mendel used had either round seeds or wrinkled seeds. Round seeds were dominant. We can show this with "S." Wrinkled seeds were recessive. We can show this with a "s." Do the chart below that shows the outcome of the next generation after cross-pollinating a pea plant with two genes for round seeds with a pea plant that has two genes for wrinkled seeds.



How many of the plants in the next generation will have round (S) seeds? \_\_\_\_\_

How many of the plants in the next generation will have wrinkled (s) seeds? \_\_\_\_\_

What happens if two of these plants are cross-pollinated? What are the chances of plants having round seeds, and what are the chances of the plants having wrinkled seeds?



The chances are \_\_\_\_\_ out of four that the plant will have round (S) seeds.

The chances are \_\_\_\_\_ out of four that the plant will have wrinkled (s) seeds.