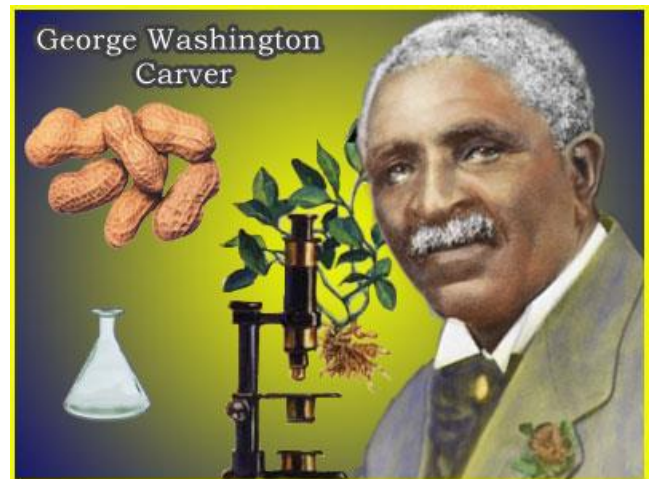
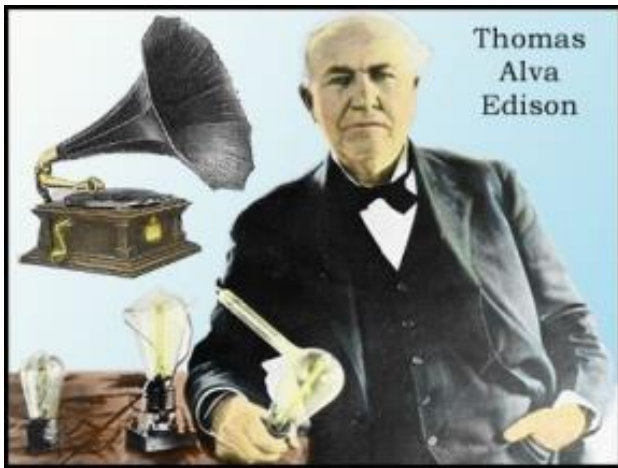


The Intermediate Informative/Explanatory  
Performance Task  
Grade 5

**When The Going Got Tough, the Tough Kept Going:**  
*Inventors Who Never Quit-Thomas Alva Edison and  
George Washington Carver*



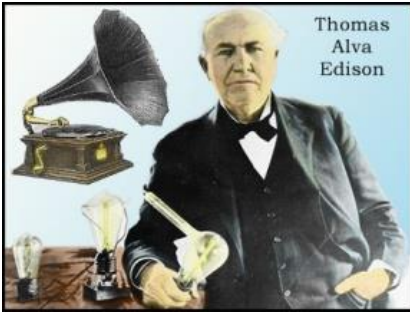
**Student Edition**

1. *Young Thomas Edison* by Michael Dooling (Anthology-Houghton Mifflin Harcourt pp 327-349)
2. *George Washington Carver: Ingenious Inventor* by Nathan Olson (Capstone Publishers) Chapters 3-4

**“Our greatest weakness lies in giving up.” TAE**

**“99% of the failures come from people who have the habit of making excuses.” GWC**

**Name:** \_\_\_\_\_ **School:** \_\_\_\_\_



## YOUNG THOMAS EDISON

Thomas Alva Edison was born in a little house in Milan, Ohio, on February 11, 1847, to Samuel and Nancy Edison. He was the youngest of seven children.

Thomas, who was called Young Al by his family, lived in an **era** very different from ours. There was no **electric** light, no telephone, no radio, or CD player, not even a movie theater.

Thomas loved to experiment. In 1856, at the age of nine, he turned his family' **cellar** into a **laboratory** complete with test tubes, beakers, and whatever chemicals he could buy. It was a mess – bottles were everywhere. Young Al would mix one chemical after another; sometimes following the experiments in his chemistry book – sometimes not. "A little of this and a little of that," he used to mumble.

His mother always encouraged him to ask questions, and he did. What is this? Why does that happen? How does it happen?

A **bout** of scarlet fever left Al hard of hearing, which made school difficult. While Al asked many questions at home, he did not ask any at school. Instead, he spent his time there daydreaming about his next **experiment**.

Al's mother, a former teacher, took him out of school after only three months. From then on, she taught him at home. Mrs. Edison made sure he received an excellent education. He read Shakespeare, the Bible, history, and much more. Over the next few years, he also studied the great inventors, such as Galileo.

At age twelve, Young Al decided to look for a job. He needed money to continue his experiments. So he went into business as a paperboy on the train that went from Port Huron, where the Edisons now lived to Detroit, Michigan. Every morning from 7 a.m. to 10 a.m. Al sold newspapers.

Then he spent all day at the Detroit library, reading and dreaming about his next experiment. He planned to read every book in the library, starting with the last book on the shelf and working back to the first. At night he took the train home and sold papers again.

Eventually, with the permission of the conductor, Al set up a laboratory in the baggage car of the train. Soon the young scientist was experimenting with everything: chemicals, gadgets, test tubes, beakers, **doohickeys**, and **thingamajigs**.

Things were going well until one day when the train made a sudden **lurch**. Bottles, books, newspapers, candies, and fruits went flying – along with Al. A bottle of **phosphorous** burst into flames. Al scrambled to put out the flames, but they spread too fast. Soon a very upset conductor rushed in. At the next stop the conductor threw all of Al's things off the train – even him!

Al had never been so disappointed in his life. He went home and set up his laboratory again with the encouragement of his mother. He continued to experiment and **tinker** with every **gadget** he could get his hands on. Usually his experiments did not work – but he always kept trying.

Before long Al had another job. He was a “night wire” – a railroad telegraph operator – in Stratford Junction, Canada. There was a lot to learn. For weeks, he **soaked up all the information** he could about telegraphy.

Al learned **Morse code** and much more. He worked the 7 p.m. to 7 a.m. shift, often sleeping right in the station. He also set up his laboratory in the back room of the station so that he could experiment in his off-hours. Apart from the occasional explosion life was grand.

One of Al's duties as the operator was to send the **signal 6** every hour on the hour to show the dispatcher at the next station that he was awake. **But the long hours sometimes caught up with him** and he would fall asleep, so the scientist in him had an idea. Soon Al had invented a device that hooked the telegraphy key to a clock. When the hour struck, the minute hand of the clock sent the message 6 for him. It was a moment of pure genius, which quickly got him fired when his boss discovered he was sleeping on the job.

For the next five years, young Edison traveled all over the South and Midwest from one telegraph job to another. He continued to try to find ways to improve the telegraph. At age twenty-one he made his way to Boston, Massachusetts, and started using his first name, Thomas. He decided that he was going to be an inventor, and he set up his latest laboratory. He wanted to learn all he could about electrical forces. His first **patented invention** was the *Electrical Vote Recorder*. Unfortunately, **Congress** did not like his invention and he could not sell it.

Over the years, Thomas's hearing had grown worse. By now, he was nearly deaf. This did not **hamper** his creative abilities though. In fact, he thought it even helped him concentrate because he was not distracted by noises. It created **solitude where he could tune out the whole world** and think.

In 1869 Thomas moved to New York City and then later established his laboratory in Newark, New Jersey. And then bad news came from home. His mother had died. Thomas, at twenty-four, was deeply saddened. For a long time he could not even speak of her. He would miss her letters – her advice and encouragement. **He owed everything to his mother.**

In 1876 Thomas moved his laboratory to Menlo Park, New Jersey. He invented the *carbon transmitter*, which amplified the human voice – making the telephone and microphone possible. He also invented a machine that talked – **phonograph**. Shortly thereafter, Thomas invented an *electric lightbulb*. He also discovered the **principle of sound waves**, which made the radio possible. In 1887 he moved his laboratory to West Orange, New

Jersey, developing the **motion picture** and much more. At one point he had 250 people working for him and 45 inventions going.

Such strange, incredible inventions were coming out of his laboratory that people started to call Thomas "**The Wizard.**" He would live to be eighty-four years old and patent 1,093 inventions. Thomas would always remember his mother's encouraging words to ask questions. What is this? Why does that happen? How does it happen?

Name: \_\_\_\_\_ School: \_\_\_\_\_ Date: \_\_/\_\_/\_\_

## Young Thomas Edison

**Directions:** Conduct a second close read of the article and review your notes about Young Thomas Edison and answer the following selected and constructed response questions using evidence from the text.

1. Thomas, who was called Young Al by his family, lived in an **era** very different from ours. There was no electric light, no telephone, no radio, or CD player, not even a movie theater.

The word **era**, in this context means \_\_\_\_\_.

- a) city
  - b) house
  - c) situation
  - d) time
2. Thomas loved to \_\_\_\_\_. In 1856, at the age of nine, he turned his family's cellar into a laboratory complete with test tubes, beakers, and whatever chemicals he could buy. It was a mess-bottles were everywhere. Young Al would mix one chemical after another; ... "A little of this and a little of that" he used to mumble.
- a) envision
  - b) excel
  - c) exercise
  - d) experiment
3. A bout of scarlet fever left Al hard of hearing, which made school difficult. While Al asked many questions at home, he did not ask any at school. \_\_\_\_\_, he spent his time there daydreaming...
- a) Although
  - b) Because
  - c) However
  - d) Instead

4. Things were going well until one day when the train made a sudden **lurch**. Bottles, books, newspapers, candies, and fruits when flying along with Al.

The word **lurch** in this context means \_\_\_\_\_.

- a) announcement
- b) jerk
- c) noise
- d) stroll

5. Over the years, Thomas' hearing had grown worse. By now, he was nearly deaf. This did not **hamper** his creative abilities though. In fact, he thought it even helped him concentrate because he was not distracted by noises. ***It created solitude where he could tune out the whole world and think.***

The word **hamper**, in this context means \_\_\_\_\_.

- a) halt
- b) heighten
- c) hinder
- d) hoist

**6. Infer** what the author means when he writes, ***"It created solitude where he could tune out the whole world and think."***

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7. In 1876 Thomas moved his laboratory to Menlo Park, New Jersey. He invented the carbon transmitter, which amplified the human voice-making the telephone and \_\_\_\_\_ possible.

- a) microphone
- b) microscope
- c) monitor
- d) telescope

8. Thomas Alva Edison had tenacity-he did not give up on his dream to be a scientist and inventor who experimented and invented things.

**Choose** three details that best supports this idea.

In 1856, at age nine, he turned his family' cellar into a laboratory complete with test tubes, beakers, and whatever chemicals he could buy.

Usually his experiments did not work-but he always kept trying,

He went home and set up his laboratory again with the encouragement of his mother.

Thomas would always remember his mother's encouraging words to ask questions.

Instead, he spent his time there daydreaming about his next experiment.

For weeks, he soaked up all the information he could about telegraphy.







## George Washington Carver: Ingenious Inventor

### Chapter 3

#### Teacher and Scientist

In 1895, George was finishing his last year at Iowa State. That same year, Booker T. Washington spoke at a large fair called the Atlanta Cotton Exposition. Washington was an educator and leader who believed African Americans needed to learn job skills to be successful.

(Booker T. Washington said,) "Our greatest danger is that in the great leap from slavery to freedom we may overlook the fact that all of us are to live by the productions of our hands."

Washington had established the Tuskegee Institute of Alabama in 1881. He believed vocational training was the way southern African Americans would become successful.

In 1896, Washington talked to Tuskegee's board of trustees.

"But who is qualified to run an agricultural school?" (a female at the table asked.)

"It must be a black person," (a gentleman said.)

(Booker T. Washington said,) "George Washington Carver knows more about growing plants than any other man in this country."

In late 1896, George moved to Alabama to begin working at the Tuskegee Institute.

(Booker T. Washington said,) "We have an important job here, George. We must teach black youth the value of education and hard work."

"Mr. Washington, I will help make Tuskegee a place of hope and promise," George replied.

George was surprised and sad that many people at the Tuskegee school were unkind to him.

"He's not one of us. He probably thinks he's better than us because he's lived in the North. And he's studied with white folks. But he's not white. He's black just like us," two professors stated.

George chose to focus on his work and not on the way others treated him. George managed Tuskegee's two farms, taught classes, and served on many committees. His favorite work involved plant and soil research.

Through George's experiments, he invented many new uses for peanuts and sweet potatoes.

(George thought,) "The soil is tired. Year after year the cotton crops use up all the nitrogen. But peanuts planted in the same place would put nitrogen back into the soil." (And he said,) "Peanuts have as much fiber as broccoli. Peanut oil is the perfect ingredient for soap, shampoo, and shaving cream. Sweet potatoes can be made into flour, syrup, dye, and paint."

George wanted to share what he knew about plants. He packed up his plants and tools in a wagon and headed out to the countryside.

(George suggested,) "You need to alternate the crops you plant. One year plant cotton, the next year plant peanuts."

(The farmer responded,) "Peanuts don't bring in as much money as cotton." (George responded,) "Try this hand lotion. I made it with peanut oil."

(A farmer and his wife asked,) "Paint? Glue? Ink? Shoe polish? You made all that with peanuts?"

(George exclaimed,) "Yes, sir!"

(A female farmer said,) "Peanuts are pig food."

(George said,) "Peanuts are good for people, too."

(George offered,) "Try this bread. It has peanut paste on it." (The girl said,) "Mmmm. Tastes good!"

## Chapter 4

### Plant Genius

In 1921, George was asked to speak to a committee of the U.S. Congress about a proposed peanut tariff. This tax would make peanuts brought into the United States from other countries more expensive. U.S. grown peanuts would not be taxed and would cost less, so people would buy more of them.

(George said,) "Peanuts are easy to plant, easy to grow and easy to harvest. One pound of peanuts contains more protein than one pound of sirloin steak."

George spent nearly an hour talking about the many benefits of peanuts. He won a tariff for the peanut industry and national fame for himself.

(One man sneered,) "His 10 minutes are up."

(Another man differed,) "Don't stop him. I want to hear more."

(George said,) "...And peanuts are more than just food. They have hundreds of uses. Medicines, fuel, glues, and cleaning products to name a few."

Thomas Edison read about Carver's speech. Edison invented the electric light bulb and helped with the invention of the typewriter. He asked his secretary to send a letter to George.

(Edison said,) "Tell Mr. Carver he'll have his own laboratories and a yearly salary of \$100,000 if he moves to work with me."

As George's fame spread, many Tuskegee faculty members were jealous. They continued to resent him. Still George was a popular teacher with the students.

(One of George's students said,) "I heard Mr. Edison offered you a job. Will you leave Tuskegee?"

(George responded,) "I belong here. My job is to teach students like you."

(The student replied,) "They say he offered you a lot of money."

(George stressed,) "Few people have the virtue to withstand the highest bidder."

Organizations asked George to speak to youth groups. They saw his ability to get along with white students as well as African Americans.

(A young white male said,) "I enjoyed your speech, sir. My name is Jimmie Hardwick. My family once owned slaves. I want to make up for that wrong."

(George asked,) "Are you truly interested in correcting the mistakes of the past? If you are, I'd like to think of ways you can be of help."

George remained a friend and mentor to many young people, including Jimmie Hardwick. They wrote letters back and forth for many years.

(George thought and wrote,) "Mr. Hardwick: Today, I made some collections of fungi, but wasps soon ran me away. I proceeded a little ways and spied another pile of brush. I found one of the richest fungi finds that I had yet made. God closed the first door that I might see one open with greater opportunities."

In the 1930s, the United States suffered an economic depression. Many people lost their jobs and had no way to earn money. George was called on to show people how to make do with the little they had.

(George encouraged,) "Rotating crops will make the soil richer without need for fertilizer. Use every part of the plant. Peanut shells are good food for livestock."

In 1935, George was asked to work for the U.S. Department of Agriculture. The government needed George's help in making farm crops healthier.

(The gentleman at the Department of Agriculture said,) "We would like you to work with the Bureau of Plant Industry. You know more about plant diseases and how to treat them than any other scientist."

(George replied,) "I am happy to help in whatever way I can."

By the late 1930s, peanuts had become a \$200 million industry and the chief crop of Alabama.

(George acknowledged,) "When I was young, I said to God, tell me the mystery of the universe. But God answered, that knowledge is for me

alone. So, I said, God, tell me the mystery of the peanut. Then God said, well, George, that's more nearly your size."

By the end of his life, George Washington Carver had found hundreds of valuable uses for peanuts.

Name: \_\_\_\_\_ School: \_\_\_\_\_ Date: \_\_/\_\_/\_\_

## George Washington Carver: Ingenious Inventor

**Directions: Conduct** a second close read of the chapters and review your notes about George Washington Carver: Ingenious Inventor and answer the following selected and constructed response questions using evidence from the text.

11. George Washington Carver invented many new uses for peanuts and sweet potatoes. Choose **three** details from the passage that **best** supports this idea.

- Peanuts have as much fiber as broccoli.
- Peanut oil is the perfect ingredient for soap.
- One year plant cotton, the next year plant peanuts.
- Peanuts don't bring in as much money as cotton.
- Sweet potatoes can be made into flour, syrup, dye, and paint.
- Try this hand lotion. I made it with peanut oil.

12. George was surprised and sad that many people at the Tuskegee school were unkind to him. Two professors said, "He's not one of us. He probably thinks he's better than us because he's lived in the North. And he's studied with white folks. But he's not white. He's black just like us."

George chose to **focus** on his work and not on the way others treated him. George managed Tuskegee's two farms, taught classes, and served on many committees. His favorite work involved plant and soil research.

**Infer** what the word **focus** tells the reader about George Washington Carver? Choose **two** answers.

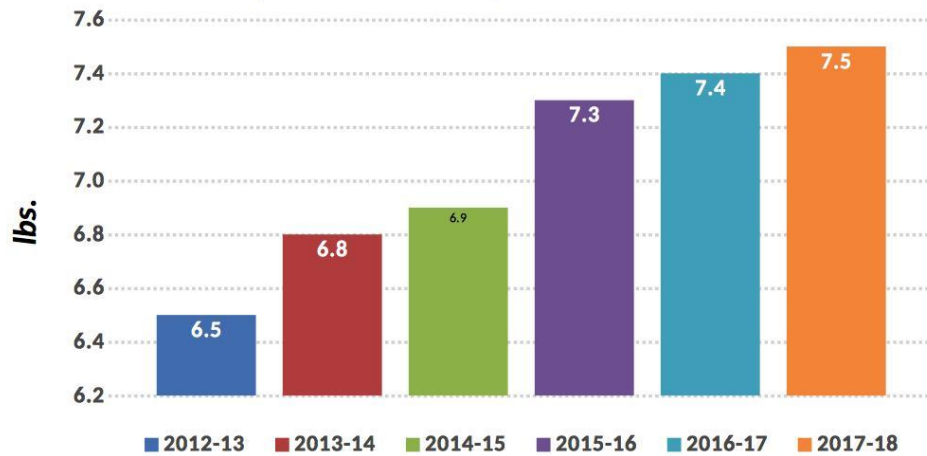
- George was happy at Tuskegee.
- George was a dedicated scientist.
- George concentrated on his job.
- George listened to the other teachers.







## Peanut Per Capita Consumption



Source: USDA Peanut Stocks & Processing Report. Excludes Peanut Oil



18. **Identify** the year in which peanut consumption increased the most.
- a) 2013-14
  - b) 2014-15
  - c) 2015-16
  - d) 2017-18
19. Use the graph above and **determine** the quantity of peanuts eaten by Bloomfield residents in 2017-18 if the population was 20,848. **Show** your work. **Explain** how you arrived at your answer. (You can use a calculator and get help from a family member.)

## Elementary Informative/Explanatory Performance Task

### When the Going Got Tough, the Tough Kept Going

When people have to solve problems sometimes they have a difficult time. While some people may try and try and try others quit. Thomas Edison stated, "Our greatest weakness lies in giving up." You have read about two very important people in our history that were faced with problems that "could not" be solved by other people. Edison and Carver looked at those obstacles as opportunities to make a difference in our world.

**Review** the text, **Young Thomas Edison**, and the chapters from the book, "**George Washington Carver: Ingenious Inventor**" and **write a two page informative/explanatory essay** explaining how Thomas Edison and George Washington Carver never gave up on trying to create ways to help us improve our lives. Include information about some of the problems that they solved. Be sure to **re-read** and **check** for the following task on the SURE rubric:

<b>S</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Stated</b> the topic or the name of the text and article in my response. (i.e., I named my topic.)</li><li><input type="checkbox"/> <b>Stated</b> several facts about the topic (i.e., I wrote at least three facts.).</li></ul>
<b>U</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Used</b> photographs and key details from the text and charts in my writing.</li><li><input type="checkbox"/> <b>Used</b> linking words (i.e., also, but, and, more)</li><li><input type="checkbox"/> <b>Used words</b> from word bank (i.e., I used words from the word bank in my writing.</li><li><input type="checkbox"/> <b>Used capitalization and punctuation.</b> (i.e., I started my sentences with a capital letter and I ended my sentences with a period.)</li></ul>
<b>R</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Reviewed</b> my writing for spaces between words (i.e., I checked my writing for spaces between each word.)</li></ul>
<b>E</b>	<ul style="list-style-type: none"><li><input type="checkbox"/> <b>Every</b> word is correctly spelled.</li><li><input type="checkbox"/> <b>Ended</b> my writing with a conclusion sentence. (i.e., I wrote a final sentence.)</li></ul>

#### Word Bank

*era, cellar, laboratory, experiment, patent, hamper, patent, Morse-code, carbon transmitter, telegraph operator, nitrogen, scientific farming, education, tariff, mentor, economic depression*





