

eMPower™ **ME**

STUDENT
SAMPLE ITEM BOOKLET

Reading

Grade 5





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Sample Items

Directions

You will now read two related passages and answer the questions that follow. Some of these questions will ask you to compare the two passages.

Passage 1

Eureka!

- 1 Chester Greenwood had a terrible problem. He lived in Maine, where winters are frosty. His ears were often cold.
- 2 Other kids wrapped wool scarves around their heads. This was out of the question for Greenwood. Wool made him itch.
- 3 One bitter day in 1873, Greenwood went ice-skating on a pond near his home. His ears started burning from the cold. Suddenly, he had a great idea.
- 4 He ran home and twisted some wire into two loops. He asked his grandmother to sew fur on them. He ran back to the pond and put the earmuffs over his ears.
- 5 They worked! Greenwood's ears stayed warm. Later, he added a spring that fit over his head and held the earmuffs in place.
- 6 It was a simple invention, but one that had everyone talking. Soon everyone wanted a pair of Greenwood's "Champion Ear Protectors."

Trying Something New

- 7 Greenwood was only 15 years old when he made his first invention. Like many inventors, he had a problem to solve, and he solved it. To invent something is to create something new. It can be a thing, a way of doing something, or even an idea.
- 8 Throughout history, people have made inventions that changed the world. Some inventors got lucky and stumbled into a great discovery. Others tried and failed again until they got their inventions right. Others improved something that already existed, creating something better.
- 9 Behind every invention, there is a story. Each invention has an inventor and a reason for why it was created. Let's take a look at a few of these stories.

Simple and Complex

- 10 Some inventions are very simple. Take the fishhook. It's just a piece of curved wire with a sharpened end. Yet for thousands of years, people have used it to catch dinner. It's been around for so long, no one really remembers who invented it.
- 11 The earliest hooks were made of shell. Over time, fishermen made many different kinds of hooks. Some were carved from horns. Others were made from wood, thorns, and even bones. No matter what fishhooks are made from, the basic design is the same.
- 12 Other inventions are more complex. Take the traffic light, for example. Garrett Morgan invented it in 1923. Morgan was an inventor and a businessman. His most important invention to date had been a type of gas mask. Firefighters used it to protect their lungs.
- 13 Everyone used Morgan's next invention. Traffic in the 1920s could be a nightmare. City roads were crowded and chaotic. People on foot shared roads with horse-drawn carts. Cars and bicycles clogged the roads, too.

14 Morgan's traffic light didn't work like the ones used today. It had arms that raised and lowered to show "Stop" and "Go" signs. His invention controlled traffic by giving everyone a turn. It let people on foot cross safely, too. Morgan's invention saved lives.

See a Need, Fill a Need

15 The driving force behind many inventions is to fill a need. These inventions are meant to make life easier or better. Margaret Knight's invention did just that. She invented a machine that made bags with square bottoms.

16 Knight worked in a factory in the late 1860s. The factory made flat bags. They looked like envelopes. Knight thought that a bag with a square bottom might be more useful for carrying groceries. At the time, such a bag could be made, but only by hand.

17 She took notes on what she saw. She also sketched her own ideas. Her goal was to make one machine that could cut, fold, and paste a paper bag from start to finish. Knight spent two years working on her invention. At last, she had a model that worked.

18 Knight's machine changed the way people shopped. Shoppers didn't have to use heavy, wooden crates to haul their groceries any more. Nor did they have to squeeze all their food into narrow bags. Suddenly, grocery shopping got a whole lot easier.

19 Knight was awarded a patent for her invention. A patent is an official paper. It gives inventors the right to be the only one to make, use, or sell their inventions.

Close, But Not Quite

20 Knight's paper bag machine filled a need. Yet filling a need doesn't always mean an invention will be used.

21 In 1903, Andrew Jackson, Jr., saw a need, too. He invented eyeglasses for chickens. The glasses weren't made to improve the chicken's eyesight. They were safety goggles.

22 Chickens tend to peck at anything that annoys them or gets in the way of their feeding. Jackson thought his glasses would protect chickens from being poked in the eyes by other chickens.

23 Nobody asked the chickens, though. They had no interest in wearing glasses. Farmers had a hard time keeping them on chickens.

24 As an inventor, Jackson isn't alone. There are a lot of strange inventions that never quite took off. There's the parakeet diaper and the vacuum haircutting helmet. There's even an alarm clock that squirts the sleeper in the face.

Try, Try Again

25 Being an inventor takes a lot of patience. Few inventors get things right the first time. No one understood this better than Thomas Alva Edison. For nearly three years, Edison and his team worked on creating the light bulb.

26 It was frustrating work. The team made many prototypes, or early versions, of the bulb. They always failed. The bulb got too hot. The bulb burned out too quickly. The bulb didn't shine brightly enough.

27 Some team members got discouraged. Not Edison. After each test, he was more determined. "That's one more way it won't work, so we're closer to a solution," he would say to his team. At last, Edison found the right combination of materials. The bulb was cool enough, long lasting, and bright enough.

Passage 2
Thinking Like Edison
by Harry T. Roman

1 I build robots.

2 I have invented robots that crawl through pipes to inspect them for damage. Some of my robots clean large oil tanks and keep them from leaking oil into the environment. Two of my inventions allow cars to be used as power plants on wheels. The engine of each car is a fuel cell that provides power whenever needed.

3 My love of building things began when I was a kid. It wasn't until I learned about Thomas Edison, though, that I really became excited about inventing.

4 When I was in fourth grade, our teacher gave us a project. We had to write to a company and learn about the products it made. Each student would then give a report in front of the class. I chose the Thomas A. Edison Company.

5 Soon after I wrote to the company, our mailman delivered a package to me. It contained a book about the life of Thomas Edison.

6 How I enjoyed reading and rereading about his inventions! The ones that impressed me most were motion pictures, recorded sound, and the electric light. Edison became my hero.

7 My dad noticed my interest in inventing and encouraged me. He showed me how to turn my ideas into plans and, eventually, into new things.

8 Soon, I had a box of spare electrical and mechanical parts and my own workbench in my dad's big workshop. I was becoming an inventor.

9 Together, my dad and I repaired radios and televisions. We increased the electric wiring in our house. We fixed the family car.

10 Once, I surprised my dad with a tool I made to adjust the brakes of our car. Later, we found a similar tool in a store. That's when I learned that different inventors often invent similar things. It is not unusual for this to happen.

11 I learned, too, that not all great ideas work. Failure is a common part of the inventing process.

12 As my father and I worked together, I began to realize that my dad was quite an inventor himself. He made a remote switch for his camera, attachments for his ladder to hold house-painting equipment, a starter switch for the car, and an air-storage tank for filling flat tires. He was always looking for a better way to do a simple job.

13 My father's example made a lasting impression on me. His guiding hands, combined with my interest in inventing, led me to become an engineer and an inventor. But I credit Thomas Edison, too, for first lighting that bulb inside me.

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1. Read the sentence from paragraph 10 of Passage 1.

Some inventions are very simple.

How does the author support this idea?

- A by describing the basic motions of certain inventions
 - B by comparing a useful invention to a useless invention
 - C by providing examples of inventions that have basic designs
 - D by listing inventions that do not fulfill a useful need in society
2. According to Passage 1, what was one way brown paper bags made grocery shopping easier?
- A They were useful for crowded grocery stores.
 - B They were lighter than previous containers.
 - C They cost less than previous containers.
 - D They helped to protect the groceries.
3. Based on Passage 1, why do people invent things?
- A to find ways of how not to invent something
 - B to solve a problem or to improve something
 - C to get everyone talking about the invention
 - D to be awarded a patent or an official paper

4. Read this sentence from paragraph 12 of Passage 2.

As my father and I worked together, I began to realize that my dad was quite an inventor himself.

How does the author support this idea?

- A The author explains that his father had a big workshop.
- B The author declares that his father made a lasting impression.
- C The author expresses that his father encouraged him to invent things.
- D The author states that his father made a remote switch and a starter switch.

This question has two parts. Be sure to answer both parts of the question.

5. Read this sentence from Passage 2.

But I credit Thomas Edison, too, for first lighting that bulb inside me.

What exactly does the author mean by this statement?

- A He praises Thomas Edison for being an inspiration.
- B He hopes that Thomas Edison has interested others.
- C He believes that Thomas Edison was an exciting inventor.
- D He thanks Thomas Edison for his invention of the light bulb.

Which detail from the passage **best** supports the answer above?

- A "My love of building things began when I was a kid."
- B "It contained a book about the life of Thomas Edison."
- C "The ones that impressed me most were motion pictures, recorded sound, and the electric light."
- D "Edison became my hero."

6. Explain how failure is a common part of the invention process. Use details from both passages to support your answer.