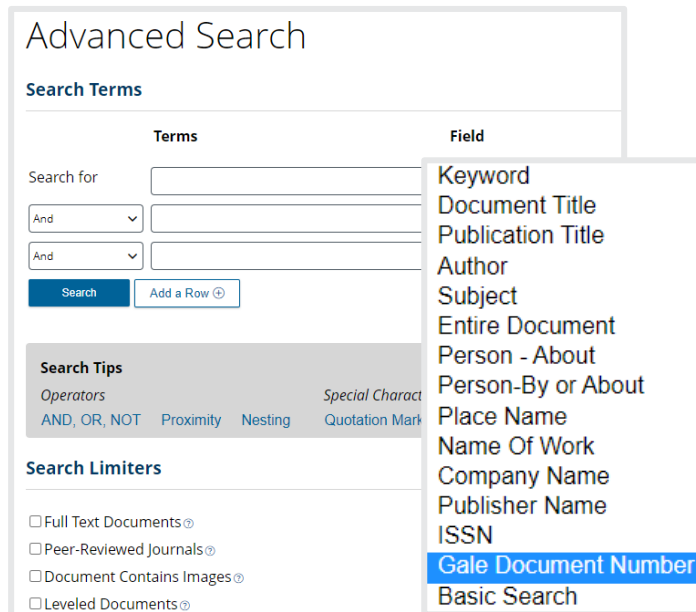


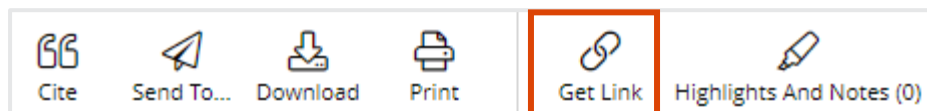
One way to have students access task articles is to have them visit ***Gale In Context: Middle School*** and perform an **Advanced Search**.

Provide students with the **Gale Document Number**.

They will then select **Gale Document Number** from the Field drop-down menu and enter the document numbers below to access the content for each task.

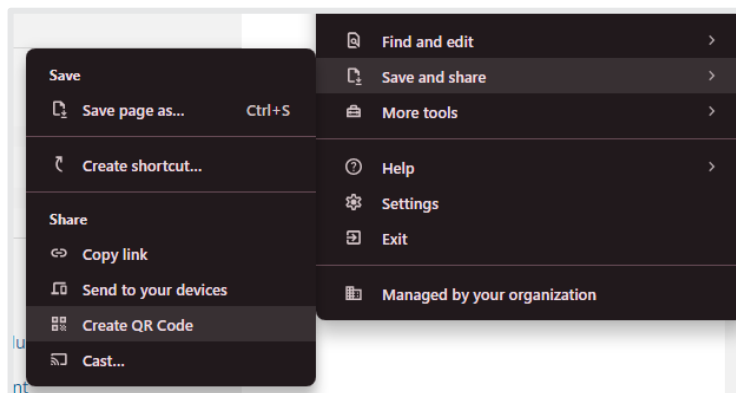


Task 1: Super Soaker	A112168971
Task 2: Windshield Wiper	A499931207
Task 3: TV Remote	K1631010387
Task 4: Velcro	A174323186
Task 5: Video Games	A393563454
Task 6: Personal Computer	00JUVX399157823



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If using Google Chrome, access your settings and then select **Save and Share** -> **Create QR Code**

Access content in *Gale In Context: Middle School* using the document numbers below. Use the information to complete the corresponding questions.

To access the materials for each inventor, go to ***Gale In Context: Middle School*** and perform an **Advanced Search**.

Select **Gale Document Number** from the Field drop-down menu and enter the document numbers below to access the content for each task.

Advanced Search

Search Terms

Terms	Field
Search for: <input type="text"/>	Keyword
And <input type="text"/>	Document Title
And <input type="text"/>	Publication Title
<input type="button" value="Search"/>	Author
<input type="button" value="Add a Row"/>	Subject
	Entire Document
	Person - About
	Person-By or About
	Place Name
	Name Of Work
	Company Name
	Publisher Name
	ISSN
	Gale Document Number
	Basic Search

Search Tips

Operators: AND, OR, NOT Proximity Nesting *Special Character*: Quotation Mark

Search Limiters

- Full Text Documents
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- Leveled Documents

1

Lonnie Johnson
Super Soaker

A112168971

2

Mary Anderson
Windshield Wiper

A499931207

3

Robert Adler
TV Remote

K1631010387

4

George de Mestral
Velcro

A174323186

5

Ralph Baer
Video Games

A393563454

6

Steve Wozniak
Personal Computer

00JUVX399157823

1 What inspired Lonnie Johnson to create the Super Soaker?

How does the Super Soaker utilize force and pressure to create a powerful water blast?

What role does the nozzle size play in the effectiveness of the Super Soaker?

Why did Lonnie Johnson conduct multiple trials of the nozzle experiment?

According to Lonnie Johnson, what is the secret to a good science?

Source Citation:

2 Who was Mary Anderson and what observation led her to invent the windshield wiper?

Describe Mary Anderson's patent application for the windshield wiper.

Why did manufacturing firms initially reject Mary Anderson's invention?

What possible reasons are given for why Mary Anderson's invention did not gain immediate success?

What recognition did Mary Anderson receive for her invention in 2011?

Source Citation:

3 What were some of the key television-related technologies that Robert Adler worked on during his career at Zenith?

How did Robert Adler's invention of the television remote control impact the television industry and viewers' experience?

What were the advantages and disadvantages of the different versions of the television remote control that Adler and his team developed?

Besides the television remote control, what other significant contributions did Robert Adler make to television technology?

How did Robert Adler's work on surface acoustic waves and touch screen technology influence various industries beyond television?

Source Citation:

4 What inspired George de Mestral to investigate the mechanism behind burrs sticking to his trousers?

What did George de Mestral discover under his microscope when examining the burrs?

How did George de Mestral's observation of the hooks and loops on burrs lead to the invention of Velcro?

What challenges did George de Mestral face in perfecting the sticky fabric for Velcro?

How has Velcro been used in various industries and everyday items, as mentioned in the text?

Source Citation:

5 What motivated Ralph Baer to create interactive games for TVs?

What was the name of the device that Ralph Baer developed to attach to TVs and create interactive games?

Which company patented and licensed Ralph Baer's technology for TV games?

How did Ralph Baer's invention contribute to the growing video game industry?

What advice did Ralph Baer give to young people regarding their ideas?

Source Citation:

6 Where was Stephen Wozniak born and raised?

How did Wozniak meet Steve Jobs, and what shared interest brought them together?

What was the name of the computer prototype that Wozniak built, and how did it compare to the Altair 8800?

When did Wozniak and Jobs establish their own computer company, and what was it called?

What were some of Wozniak's activities and accomplishments after leaving Apple, including his involvement in teaching and other ventures?

Source Citation:

1

Lonnie Johnson was inspired to create the Super Soaker when he accidentally discovered its potential while experimenting with a new refrigerator cooling system in his bathroom. The water blast from the cooling hose gave him the idea for a powerful water gun.

The Super Soaker utilizes force and pressure to create a powerful water blast. Each squeeze of the trigger applies pressure on the water inside the gun, shooting it out the nozzle. The more the gun is pumped, the more air is compressed, and when the trigger is pulled, the compressed air is released, propelling the water with force.

The nozzle size plays a crucial role in the effectiveness of the Super Soaker. A smaller nozzle diameter creates more pressure, allowing the water to spray a greater distance. However, if the nozzle is too small, the water stream may break into droplets before reaching the target.

Lonnie Johnson conducted multiple trials of the nozzle experiment to determine the optimal size that would provide the right balance of pressure, distance, and stream consistency. By testing different nozzle sizes, he could fine-tune the Super Soaker's performance.

According to Lonnie Johnson, the secret to good science is observation. By carefully observing and analyzing the results of experiments, scientists can gain valuable insights and make meaningful discoveries.

Source Citation: Tucker, Libby. "Ready, set, squirt! How one inventor used charts and graphs to make a splash." *Science World*, vol. 60, no. 2, 22 Sept. 2003, pp. 18+. *Gale In Context: Middle School*, [link.gale.com/apps/doc/A112168971/MSIC?u=\[LOCID\]&sid=bookmark-MSIC&xid=6531b94c](https://link.gale.com/apps/doc/A112168971/MSIC?u=[LOCID]&sid=bookmark-MSIC&xid=6531b94c). Accessed 26 Mar. 2024.

2

Mary Anderson was a woman who invented the windshield wiper. She observed the inconvenience faced by a streetcar driver in New York City who had to constantly clean off the windshield during snowy weather. This led her to come up with the idea of a blade that could automatically clean the windshield.

Mary Anderson's patent application for the windshield wiper described it as a device that could be operated by a handle inside the motor car's vestibule. The wiper was easily removable, leaving no marks on the car during fair weather. She filed the application on June 18, 1903, and was awarded patent number 743801 by the United States Patent Office on November 10 of the same year.

Manufacturing firms initially rejected Mary Anderson's invention. In a letter from the firm of Dinning and Eckenstein, they stated that they did not consider her invention to have enough commercial value to warrant their involvement in its sale.

There are several possible reasons given for why Mary Anderson's invention did not gain immediate success. One reason suggested is that Anderson was an independent woman in a time when the world was predominantly run by men. Another possible reason is that manufacturing firms may have underestimated the demand for windshield wipers at that time.

In 2011, Mary Anderson received recognition for her invention when she was inducted into the Inventors Hall of Fame.

Source Citation: "Alabama Woman Stuck In NYC Traffic In 1902 Invented The Windshield Wiper." *Morning Edition*, 25 July 2017. *Gale In Context: Middle School*, [link.gale.com/apps/doc/A499931207/MSIC?u=\[LOCID\]&sid=bookmark-MSIC&xid=7a2b4dda](https://link.gale.com/apps/doc/A499931207/MSIC?u=[LOCID]&sid=bookmark-MSIC&xid=7a2b4dda). Accessed 26 Mar. 2024.

3 Some of the technologies include advancements in television sound, such as the development of the gate-beam tube, which reduced the cost of sound channels and improved sound reception by screening out certain types of interference.

It revolutionized how viewers operated their televisions by allowing them to change channels and control various functions without having to physically interact with the TV. It provided convenience and ease of use, enhancing the overall viewing experience.

Advantages included the ability to control the TV from a distance, convenience in changing channels and adjusting settings, and improved user experience. However, some early versions had limitations, such as reacting to unintended light sources and requiring batteries for operation.

He worked on advancements in television sound, including the gate-beam tube and improvements in sound reception. He also conducted research on surface acoustic waves and touch screen technology, which had applications beyond television, such as in cell phone handsets and other interactive devices.

Robert Adler's work on surface acoustic waves and touch screen technology had a broader influence beyond television. Surface acoustic waves, which he researched and applied in color television sets, became a key component in cell phone handsets. The touch screen technology he worked on had applications in various industries, including automated teller machines, interactive museum exhibits, and televisions.

Source Citation: "Robert Adler." *Encyclopedia of World Biography Online*, Gale, 2022. *Gale In Context: Middle School*, [link.gale.com/apps/doc/K1631010387/MSIC?u=\[LOCID\]&sid=bookmark-MSIC&xid=0e0ad5e2](https://link.gale.com/apps/doc/K1631010387/MSIC?u=[LOCID]&sid=bookmark-MSIC&xid=0e0ad5e2). Accessed 26 Mar. 2024.

4 George de Mestral was inspired to investigate the mechanism behind burrs sticking to his trousers after a hiking trip where he noticed the burrs clinging to his clothing.

Under his microscope, George de Mestral discovered that burrs had tiny hooks that looked like spiked teeth, which allowed them to grab onto anything with a loop-like structure, such as clothing fibers or animal fur.

George de Mestral's observation of the hooks and loops on burrs led to the invention of Velcro because he realized that he could create two different fabrics—one with tiny hooks and the other with tiny loops. When these two fabrics were pressed together, they would stick and create a strong bond, mimicking the mechanism of burrs clinging to surfaces.

George de Mestral faced challenges in perfecting the sticky fabric for Velcro, such as finding the right size and arrangement of hooks and loops. He had to experiment with different materials and designs to ensure that the hooks and loops could effectively stick and unstick repeatedly without losing their adhesive properties.

Velcro has been used in various industries and everyday items. It can be found on sneakers, watchbands, backpacks, jackets, wallets, lunch bags, and even medical applications like holding together the cast for a sprained ankle. Velcro has also been used in unexpected places like holding tools in army tanks, securing flashlights in nuclear power plants, and providing a rough surface inside space helmets for astronauts to scratch itchy areas.

Source Citation: Katulka, Lynn. "Sticky business." *Hopscotch*, vol. 19, no. 5, Feb.-Mar. 2008, pp. 36+. *Gale In Context: Middle School*, [link.gale.com/apps/doc/A174323186/MSIC?u=\[LOCID\]&sid=bookmark-MSIC&xid=5306ceb2](https://link.gale.com/apps/doc/A174323186/MSIC?u=[LOCID]&sid=bookmark-MSIC&xid=5306ceb2). Accessed 26 Mar. 2024.

5

Baer believed that if he could create a device that could be connected to a TV, it would have significant business potential.

The device that Ralph Baer developed to attach to TVs and create interactive games was called the "Brown Box." It served as a prototype for the later released Magnavox Odyssey, the first home video game console.

Ralph Baer's technology for TV games was patented and licensed by Sanders Associates, the company he worked for at the time. They later licensed it to TV maker Magnavox, which released it as the Magnavox Odyssey.

Ralph Baer's invention of the Brown Box and the subsequent release of the Magnavox Odyssey marked the beginning of the video game industry. It was the first commercially available home video game console, paving the way for future advancements and the growth of the industry.

Ralph Baer advised young people to write down their ideas. He believed that documenting ideas and inventions was crucial for success. By keeping a record of their thoughts and innovations, young people could better develop and pursue their ideas, increasing the chances of bringing them to fruition.

Source Citation: "Inventor Ralph Baer Was An American Success Story." All Things Considered, 8 Dec. 2014. Gale In Context: Middle School, [link.gale.com/apps/doc/A393563454/MSIC?u=\[LOCID\]&sid=bookmark-MSIC&xid=fbdeffb4](https://link.gale.com/apps/doc/A393563454/MSIC?u=[LOCID]&sid=bookmark-MSIC&xid=fbdeffb4). Accessed 26 Mar. 2024.

6

Stephen Wozniak was born and raised in California, specifically in the Santa Clara Valley, which later became known as Silicon Valley.

Wozniak met Steve Jobs while attending the University of California. They bonded over their shared interest in computers and electronics.

The computer prototype that Wozniak built was called the Apple I. It outperformed the Altair 8800 and was further developed by Wozniak.

Wozniak and Jobs established their own computer company, Apple Computer Inc., on April 1, 1976.

After leaving Apple, Wozniak spent a decade teaching computer technology classes and supporting schools in Los Gatos, California. He also worked on various ventures, including the creation of the first universal remote through his company CL 9 and working with wireless GPS technology with Wheels of Zeus. He joined Danger Inc., which developed PDAs, and later became a chief scientist at Fusion-io and Primary Data. Wozniak also taught remotely at the University of Technology in Sydney, Australia.

Source Citation: "Steve Wozniak." Gale Middle School Online Collection, Gale, 2017. Gale In Context: Middle School, [link.gale.com/apps/doc/00JUVX399157823/MSIC?u=\[LOCID\]&sid=bookmark-MSIC&xid=ceebc88e](https://link.gale.com/apps/doc/00JUVX399157823/MSIC?u=[LOCID]&sid=bookmark-MSIC&xid=ceebc88e). Accessed 26 Mar. 2024.