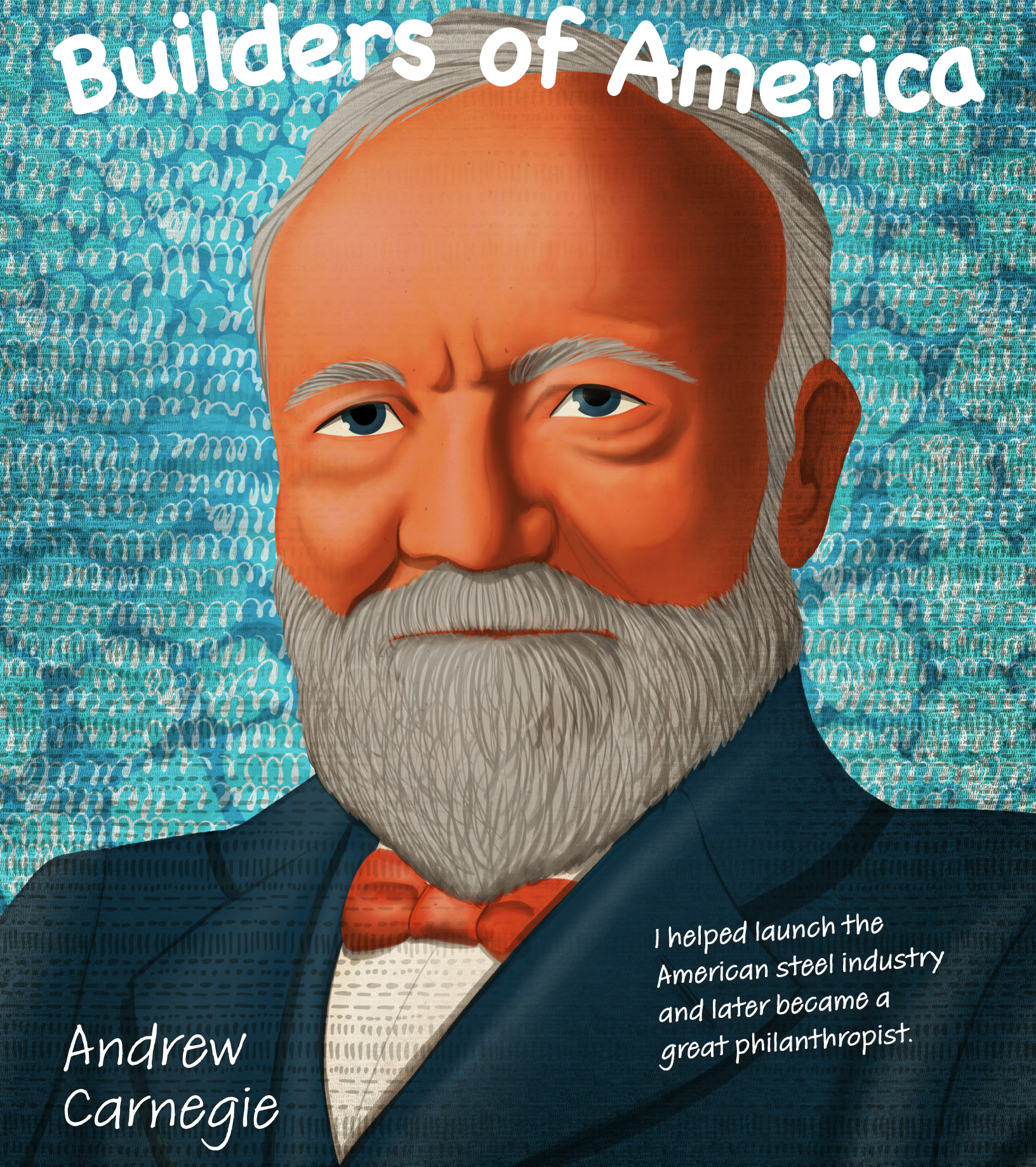


# Builders of America



Andrew  
Carnegie

I helped launch the  
American steel industry  
and later became a  
great philanthropist.



# Meet Andrew Carnegie

A Scotland native, Andrew Carnegie emigrated to America with his parents and younger brother in 1848. They settled just outside of Pittsburgh and struggled to make ends meet when his father's weaving business collapsed.

To help support the family, Andrew worked as a bobbin boy in a cotton factory. At 14, he became a messenger for a **telegraph** office where he taught himself how to use the equipment. With this new skill, he was soon promoted to telegraph operator.

Pennsylvania Railroad **superintendent**, Thomas Scott, took notice of Andrew and offered him a position and an opportunity to learn the railroad industry. Andrew later succeeded his boss as superintendent of the Pennsylvania Railroad's western division when he was just 24.

At Scott's recommendation, Andrew made his first-ever **investment**, which his mom facilitated by mortgaging the family home. Following this initial success, he expanded his business interests to include railway sleeping cars, oil wells, iron works, and railroads.

On a trip overseas, Andrew was introduced to steel, the latest construction innovation. He shifted his focus to steel manufacturing, eventually establishing the Carnegie Steel Company. In 1901, he sold the company for \$480 million, making him the wealthiest man in America.

In later life, Andrew endeavored to give away his entire fortune, which he considered a moral imperative.

## At-a-Glance

- ★ Born November 25, 1835 in Dunfermline, Scotland
- ★ Led the expansion of the American steel industry
- ★ Known for his ambition, keen eye for opportunity, and willingness to take calculated risks
- ★ One of the most important **philanthropists** of his time
- ★ Often referred to as the "Patron Saint of Libraries" for founding 2,509 libraries in English-speaking countries
- ★ Died on August 11, 1919 in Lenox, Massachusetts



# Humble Origins

The oldest of three children, Andrew Carnegie was born in the attic of a small one-story house in Dunfermline, Scotland. His sister died in childhood and the family later welcomed another boy, Tom.

William's father worked as a highly skilled **damask** weaver. When an industrial textile factory opened in town, business shrank and the family fell into poverty. Andrew's mother Margaret opened a small shop to supplement their income.

Andrew took pride in becoming useful to his parents at age ten when he ran shop errands after school. He also handled the accounts of the shop's patrons, introducing him to business affairs at this early age.

At school, Andrew developed a passion for books and reading. He memorized works of poetry and enjoyed reading about Scottish and American history. He and his family were strong admirers of the American Republic and one of his earliest memories was seeing a small map of America.

After William sold the last of his hand weaving looms for a fraction of its value, the family decided to emigrate to America. A friend loaned them the money needed to pay for their passage. Later in life, Andrew recalled his tearful goodbye from his beloved childhood town, despite his optimism about the future.

*"Young people should know that a sunny disposition can be cultivated; that the mind like the body can be moved from shade into sunshine."*

Andrew Carnegie



Andrew Carnegie and his younger brother, Tom



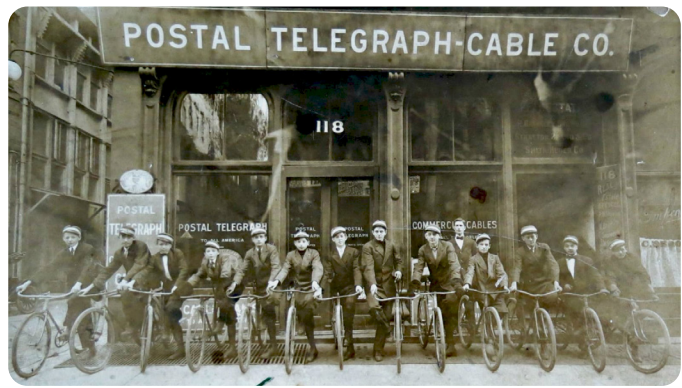
# Immigrants in a New Land

The Carnegies moved to Allegheny and William resumed weaving tablecloths that he sold door-to-door for a meager profit. He eventually gave up weaving and obtained work in a cotton factory where he found Andrew a job that earned \$1.20 per week.

Andrew later reflected on his role as a bobbin boy: "The hours hung heavily upon me and in the work itself I took no pleasure; but the cloud had a silver lining, as it gave me the feeling that I was doing something for our world—our family. I have made millions since, but none of those millions gave me so much happiness as my first week's earnings."

Margaret worked binding shoes, a skill she had learned in childhood. She was Andrew's heroine: a dignified lady who worked tirelessly to provide a proper upbringing for him and Tom.

Andrew admired his parents and appreciated the sense of honor, independence, and self-respect that pervaded their household. Because they communicated openly about their financial situation, 14-year-old Andrew determined that his family needed to earn \$25 per month to support themselves.



## From Messenger to Messages

Andrew credited his real start in life to his job as a **messenger** boy for the Ohio Telegraph Company, where he earned \$2.50 per week. He reported to work in his nicest clothes and expressed a willingness to memorize all of the city's streets so that he could deliver telegrams quickly.

In a few months, Andrew received a pay raise. He shared all of his earnings with his parents, and they were soon able to repay the money they had borrowed for their journey to America.

Andrew was soon entrusted with greater responsibilities. He was often asked to watch the office during his manager's short absences and began to receive messages and assign them to the other messengers.

Andrew regularly came to work early to sweep the office before the telegraph operators arrived. In the quiet morning hours, he practiced on the equipment and taught himself the art of telegraphy. As a result of his new skill, he was sometimes asked to stand in for an absent operator. Andrew soon learned to take messages by ear, an accomplishment so rare that people often came to the office just to watch him work.





# Industrious Investor

Andrew's unusual new skill did not go unnoticed. Thomas A. Scott, superintendent of the Pittsburgh division of the Pennsylvania Railroad, became a frequent visitor to the telegraph office and was impressed with Andrew's ability, efficiency, and cheerful demeanor. When he offered him a job, Andrew jumped at the chance to work for Scott, who taught him the railroad business.

Meanwhile, Andrew's new income of \$35 per month made it possible for his family to buy the lot and two small houses where they had been living. When his father died in 1855, Andrew took on management of all household affairs. Although deeply distressed, he was satisfied that his father had lived to see the family become more financially secure.

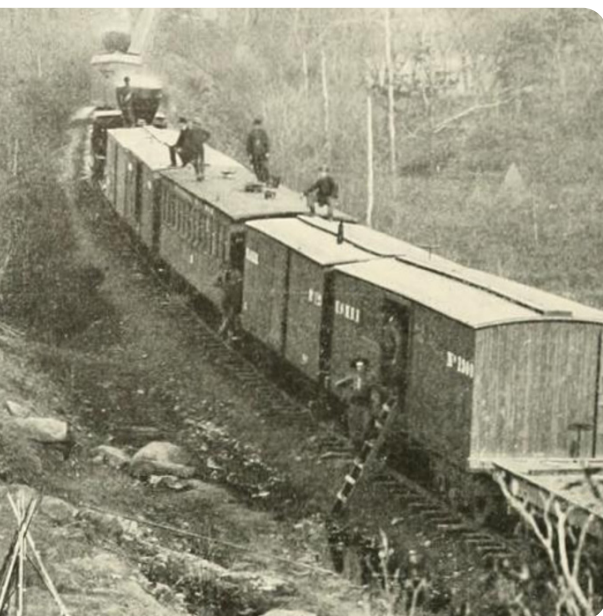
Andrew began receiving monthly **dividends** of \$10 from his first investment, sparking his interest in investing.

Soon after, inventor T. T. Woodruff approached Andrew on a train to show him a model of his new sleeping car. Impressed with Woodruff's design, Andrew quickly arranged a meeting with Scott, who promptly ordered the construction of two sleeping cars. In gratitude, Woodruff offered Andrew an eighth interest in his venture.

When Scott became VP of the Pennsylvania Line in 1859, Andrew was promoted to superintendent of the Pittsburgh division, for a salary of \$1,500 per year. Finally, the Carnegies could afford to move to an upper-class neighborhood, and they settled into in Homewood, just outside of Pittsburgh.

## FUN FACT

When Andrew was in charge of the telegraph office during the Civil War, he frequently came into contact with President Lincoln, who often came to the office awaiting replies to telegrams.



## CIVIL WAR

When the Civil War erupted in 1861, Andrew was summoned to Washington by Scott, who was now Assistant Secretary of War in charge of the Transportation Department. Andrew became Scott's assistant in charge of the military railroads and the government's telegraph office.

Andrew's team contributed to the war effort by successfully transporting Union troops and wounded volunteers to safety. He organized groups of railway workers who repaired broken branches in the rail line, enabling heavy trains to pass. Andrew also worked day and night to open telegraph communication to the South.



## Iron Bridges and Oil Wells

During the war, Andrew observed that wooden railway bridges were not sufficient as they were apt to burn in fires, causing major delays in transportation. Andrew had once seen a small iron bridge and decided that iron should be the future of bridge-building. In 1863, with four colleagues, he established the Keystone Bridge Company, the first iron railway bridge construction company.

Andrew attributed the company's success to their commitment to quality. They used only the best materials, critically inspected their own work, and declined any project that they could not build safely, earning them a reputation in dependability. In his autobiography, Andrew remarked, "The surest foundation of a manufacturing concern is quality. After that, and a long way after, comes cost."

Around this time, the great Pennsylvania oil wells attracted Andrew's attention, and he began investing earnestly in oil. As his personal investments grew and required greater attention, he decided to leave his position at Pennsylvania Railroad to focus exclusively on his personal business affairs.



### "Steel Is King"

Notwithstanding iron's significance, Andrew happened upon a superior building material during a visit to Britain. There he met Henry Bessemer, an engineer who had discovered that blowing hot air through molten iron burned away impurities, resulting in a material known as steel. Andrew returned to America and informed his partners, "Steel is king," reflecting his realization that steel would soon outpace iron. He then organized a group of investors to establish a steel-rail company in 1873.

Andrew carefully studied his competitors to learn their strengths and weaknesses. He discovered that they were discarding thin steel shavings called "scale" that fell on the floor during steel manufacturing. He then offered to cart away their scale and used the shavings to make steel rails for his own company.

When Andrew entered the steel business, England dominated world markets and the price of steel was \$56 per ton. By 1900, Andrew was manufacturing steel for \$11.50 per ton, surpassing the entire production of England. Andrew's success was due to his ability to improve his company's products. A classic market **entrepreneur**, Andrew took huge risks, overcame competitors, and ultimately launched the American steel industry onto the world stage.



## Vertical Integration

Andrew believed that the path to success in any business was to master that business, rather than to invest in faraway operations. Therefore, he invested heavily in his own company to obtain greater efficiency and a superior product. From 1888 to 1897, Andrew and his partners doubled investments in their mills to over \$45 million and more than tripled their production of iron and steel, to 18,000 tons per day.

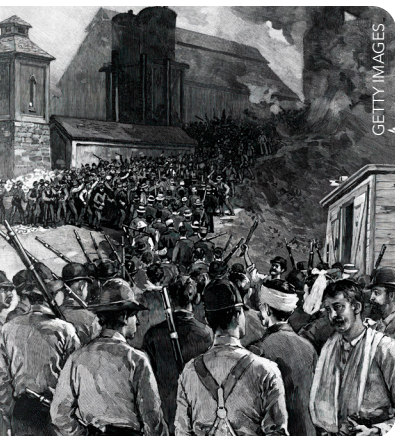
In an effort to control all stages of production, Andrew organized the business accordingly, from acquiring raw materials to building the final product, a practice known as "vertical integration." He purchased coke fields and iron-ore deposits that furnished the raw materials for steel production. He also bought ships and railroads to transport these supplies to his steel mills. By controlling all levels of production, the company's earnings were significantly increased.

## Innovation = Success

To maintain advantage, Andrew and his partners erected three blast furnaces so that they could produce their own ferro manganese, an alloy of iron and manganese used in steel manufacturing. As a result of their experimentation, they were able to supply the entire American demand for ferro manganese, causing prices to fall from \$80 to \$50 per ton, single-handedly revolutionizing steel manufacturing.

On the human side of the business, Andrew recruited only the most capable employees, supported paying higher wages and offered incentives to high-performing employees as an investment that encouraged loyalty and success.

Andrew's accounting team developed extremely detailed cost and production accounting procedures, giving the company the ability to analyze their standing and ultimately, a leading edge in manufacturing.



## CONTROVERSY STRIKES

Many of Andrew's employees were part of a union called the Amalgamated Association of Iron and Steel Workers. Andrew's company, Carnegie Steel, had a contract with the union, but it was due to expire in July 1892. Andrew was visiting Scotland so he charged business partner Henry Clay Frick with ending the contract early and breaking the union so his employees couldn't join it. Frick cut the workers' wages, angering them into striking. This event became known as the Homestead Strike. Frick fired all 3,800 workers and hired a private security company to guard the mill.

Many of the workers revolted. Thousands stormed the plant. For the next 12 hours, the security team and workers exchanged heavy gunfire. Although the guards surrendered, many were severely beaten. When the workers took control of the factory, Frick summoned the National Guard to restore order. At least three guards and seven workers were killed in the riot.

Following the strike, many of the workers and union leaders faced criminal charges. Some workers returned to the mill, agreeing to work longer hours for reduced wages. Although Andrew was abroad during the ordeal, some people criticized him for not returning to **quell** the dispute.





## Fascinating Facts

- In Scotland, Andrew kept pigeons and rabbits as pets. His first business venture involved organizing his friends to gather food for them. In return, he promised to name new rabbits after them.
- Andrew developed an appreciation for libraries when Colonel Anderson made his 400-volume collection available to “working boys.” Andrew credits the Colonel with opening the light of knowledge to him when he was just a messenger boy.
- In 1883, Andrew purchased a rival steel mill called Homestead Works. The mill provided beams for the first skyscraper in America, the ten-story Home Insurance Building in Chicago.
- In 1887, Andrew married Louisa Whitfield in New York. In 1897, the couple welcomed their first and only child, Margaret, named after Andrew’s mother.
- The Carnegies resided for part of the year in Skibo Castle in northern Scotland.

## Andrew’s Legacy

In 1889, Andrew published a pair of articles that came to be known as “The Gospel of Wealth.” He wrote that a man who accumulates great wealth has a responsibility to use it to improve mankind through philanthropic causes.

When Andrew sold his steel company to J.P. Morgan for \$480 million in 1901, he began to distribute his massive fortune. His wealth helped establish numerous colleges, schools, and nonprofit organizations and associations across the U.S. and abroad. He also funded over 2,500 libraries and paid for thousands of church organs in the United States and around the world.

Andrew’s legacy includes the establishment of Carnegie Corporation of New York, which has supported everything from the discovery of insulin and the dismantling of nuclear weapons, to the creation of *Sesame Street*.

## True or False?

1. Andrew Carnegie was born in Dunfermline, Scotland on November 25, 1835.
2. Andrew credited his real start in life to his position as a bobbin boy in a cotton mill.
3. After his first successful investment, Andrew expanded his business interests to include railway sleeping cars, oil wells, iron works, and railroads.
4. During a visit to Britain, Andrew learned how to manufacture steel, a building material stronger than iron.
5. In Vertical Integration, a company attempts to control a single stage of production or a single industry completely, making it less competitive
6. Upon his retirement, Andrew bequeathed his fortune to his family.



## Try Your Hand as a Telegraph Operator

As telegraph operator, Andrew interpreted electrical pulses of various lengths and converted them to letters, creating meaningful communications called telegrams. Telegraph operators were versed in a language called Morse Code — a system for representing letters, numbers, and punctuation marks by an arrangement of dots, dashes, and spaces. Telegrams were typically used to communicate urgent messages because they were faster than the mail.

The Pennsylvania Railroad created its own telegraph office in order to manage railway traffic. Telegraphic orders were necessary to safely guide trains on and off their tracks, avoiding collision. Operators also communicated vital information about breakdowns and accidents.

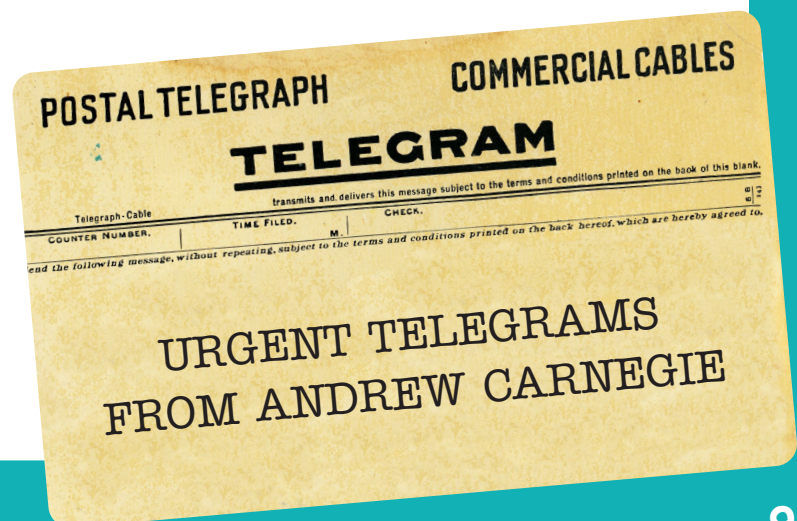
A	..-/	G	---./	M	--/	S	.../	Y	---..-/	:	---.....
B	---.../	H	....-/	N	..-/	T	-/	Z	---.../	+	.....
C	---...-/	I	../	O	---.../	U	...-/	?	.....	-	.....
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Using the Morse Code Key, decode these valuable messages from Andrew Carnegie:

- [illegible]



Answer key on page 10







# Glossary

- **Damask:** A patterned fabric of cotton, linen, silk, or wool.
- **Dividends:** A sum of money paid to shareholders of a corporation out of earnings.
- **Entrepreneur:** A person who starts and operates a business, usually with substantial initiative and risk.
- **Investment:** The outlay of money or capital in order to earn a profit.
- **Messenger:** A person who is hired to carry telegrams, letters, or parcels.
- **Philanthropist:** One who helps others and society overall through charitable aid or donations.
- **Quell:** To suppress, put an end to, or pacify.
- **Superintendent:** A person who supervises or directs an enterprise, organization, or district.
- **Telegraph:** A communications system that transmits and receives coded signals by wire.



Mr. and Mrs. Andrew Carnegie, 1908

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TRUE OR FALSE? 1-T. 2-F. 3-T. 4-T. 5-F. 6-F. TELEGRAPH OPERATOR: 1-A sunny disposition is worth more than fortune. 2-The great aim of every child should be to do something beyond the sphere of his duties, something which attracts the attention of those over him.