

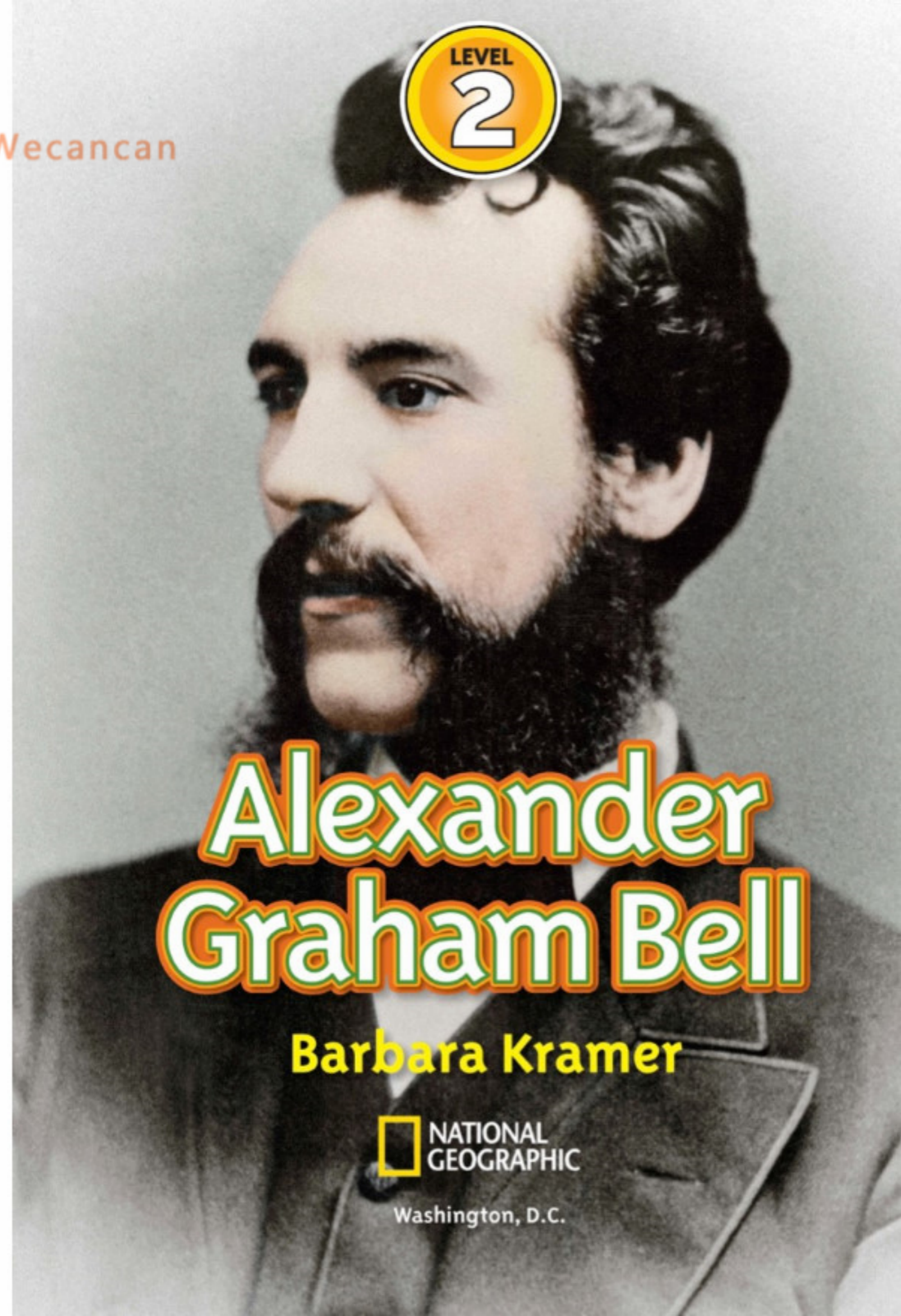
公众号：Wecanacan

## National Geographic Readers: Alexander Graham Bell

By: Barbara Kramer

Say hello to Alexander Graham Bell, inventor of the telephone and one of the founders of the National Geographic Society.

<b>6-8</b>	<b>15-30 mins</b>	<b>640L</b>	<b>3.9</b>
Age Range	Length	Lexile <sup>®</sup> Measure	AR Level



# Alexander Graham Bell

Barbara Kramer

 NATIONAL  
GEOGRAPHIC

Washington, D.C.

# An Inventor and Teacher

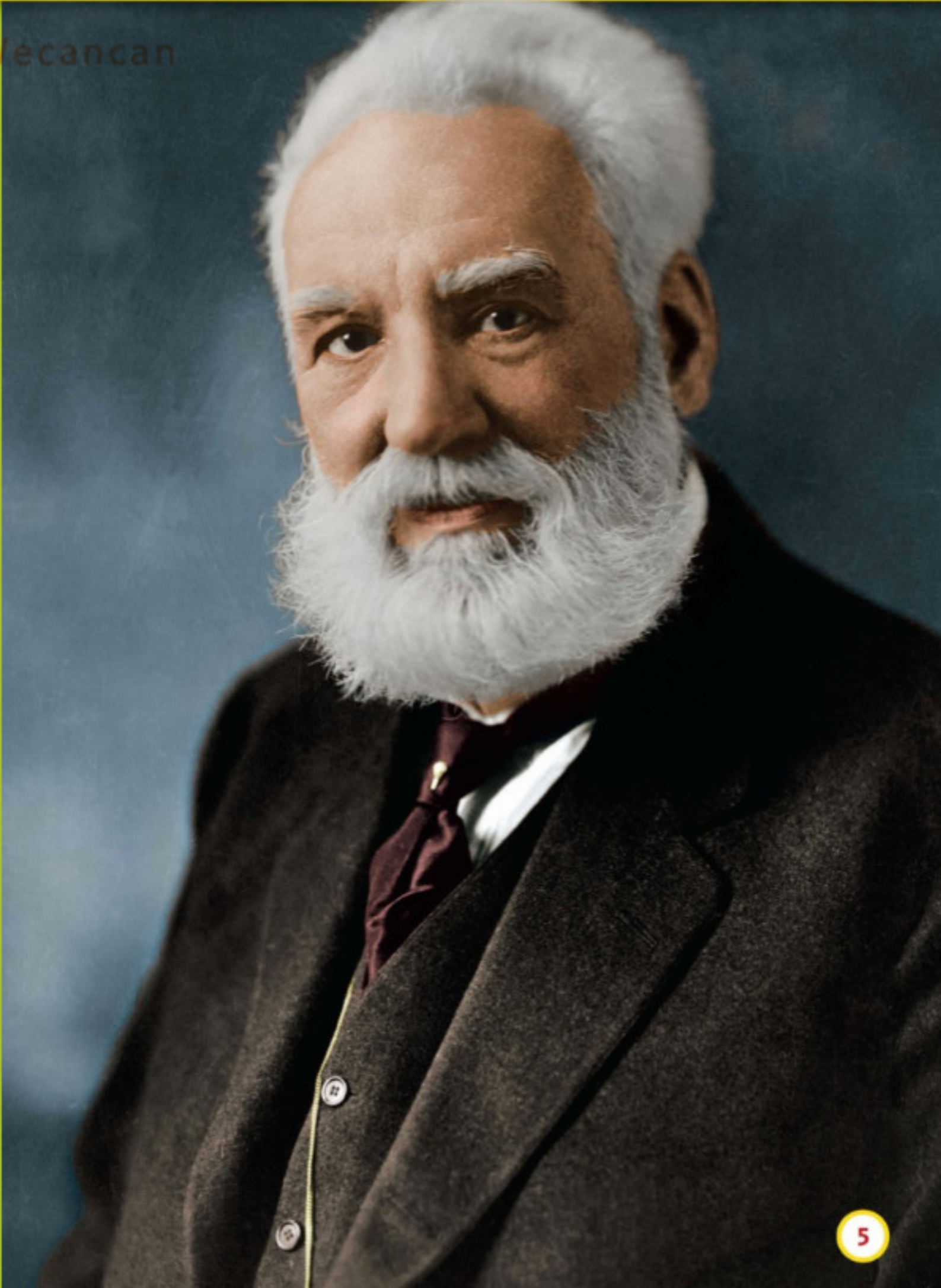
公众号: Wecancan

Can you imagine a world with no telephones? You would not be able to call your friends or text them with exciting news. If you needed a ride home, you could not call anyone to let them know. Thanks to Alexander Graham Bell, we now have telephones to make our lives easier.



## In His Own Words

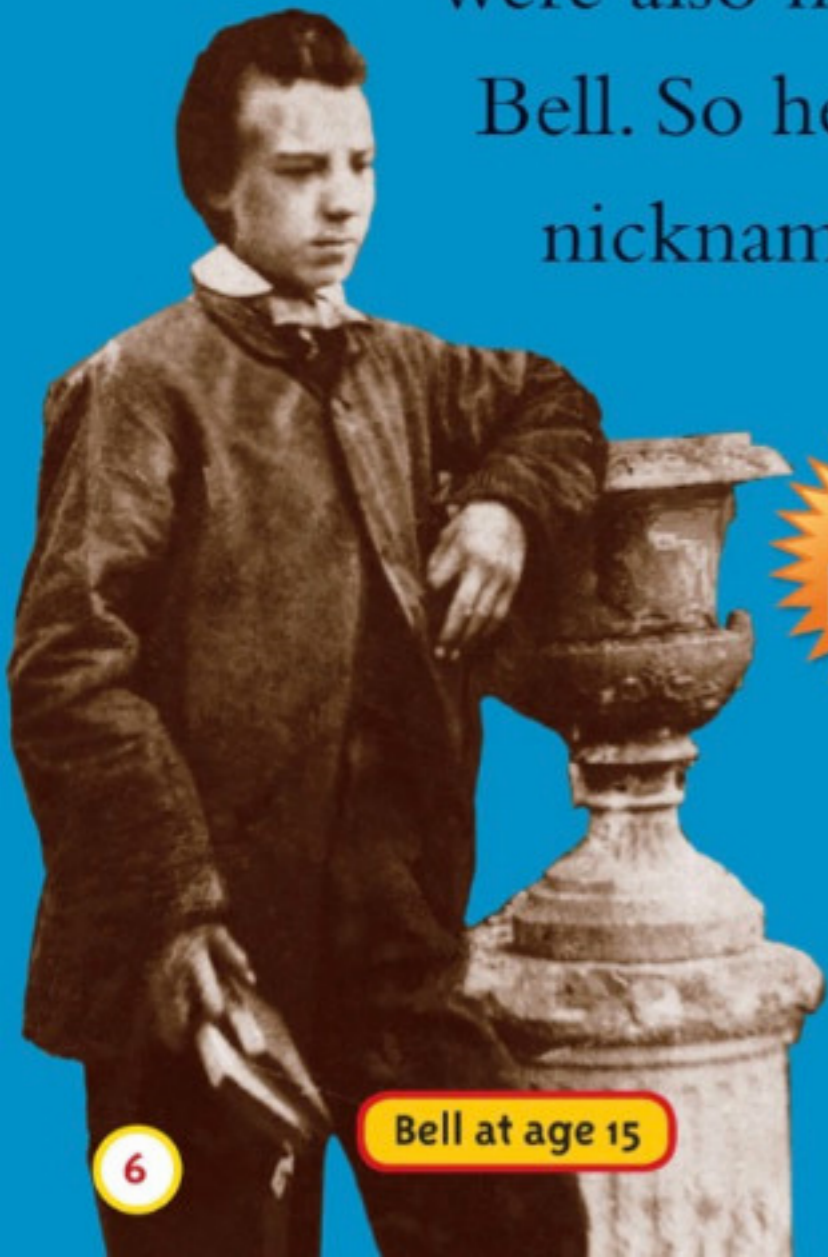
“The inventor looks upon the world and is not contented with things as they are. He wants to improve whatever he sees.”



# A Boy in Scotland

公众号：Wecancan

Bell was born on March 3, 1847, in Edinburgh (EH-den-ber-ruh), Scotland. He was the second of three sons. His grandfather and father were also named Alexander Bell. So he went by the nickname Aleck.



Bell at age 15

6

## That's a Fact!

Bell did not have a middle name. He added the name Graham when he was 11 years old. His parents were not upset. They liked his new name.

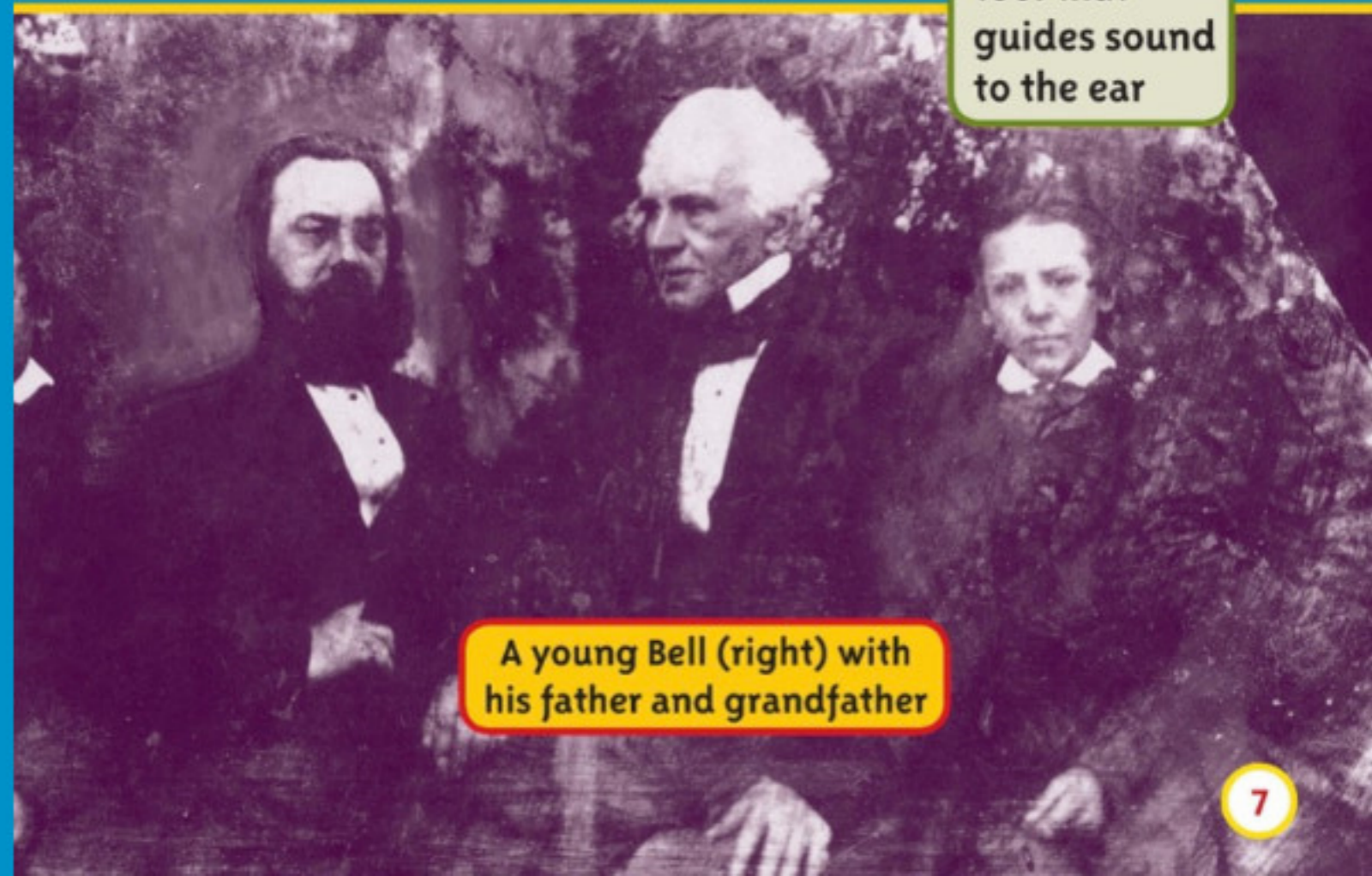
Bell's grandfather and father were both speech teachers. They helped people learn to speak more clearly.

Bell's mother, Eliza, was almost totally deaf. She used an ear tube to help her hear.



## Words to Know

**EAR TUBE:** A horn-shaped tool that guides sound to the ear



A young Bell (right) with his father and grandfather

7

# Exploring

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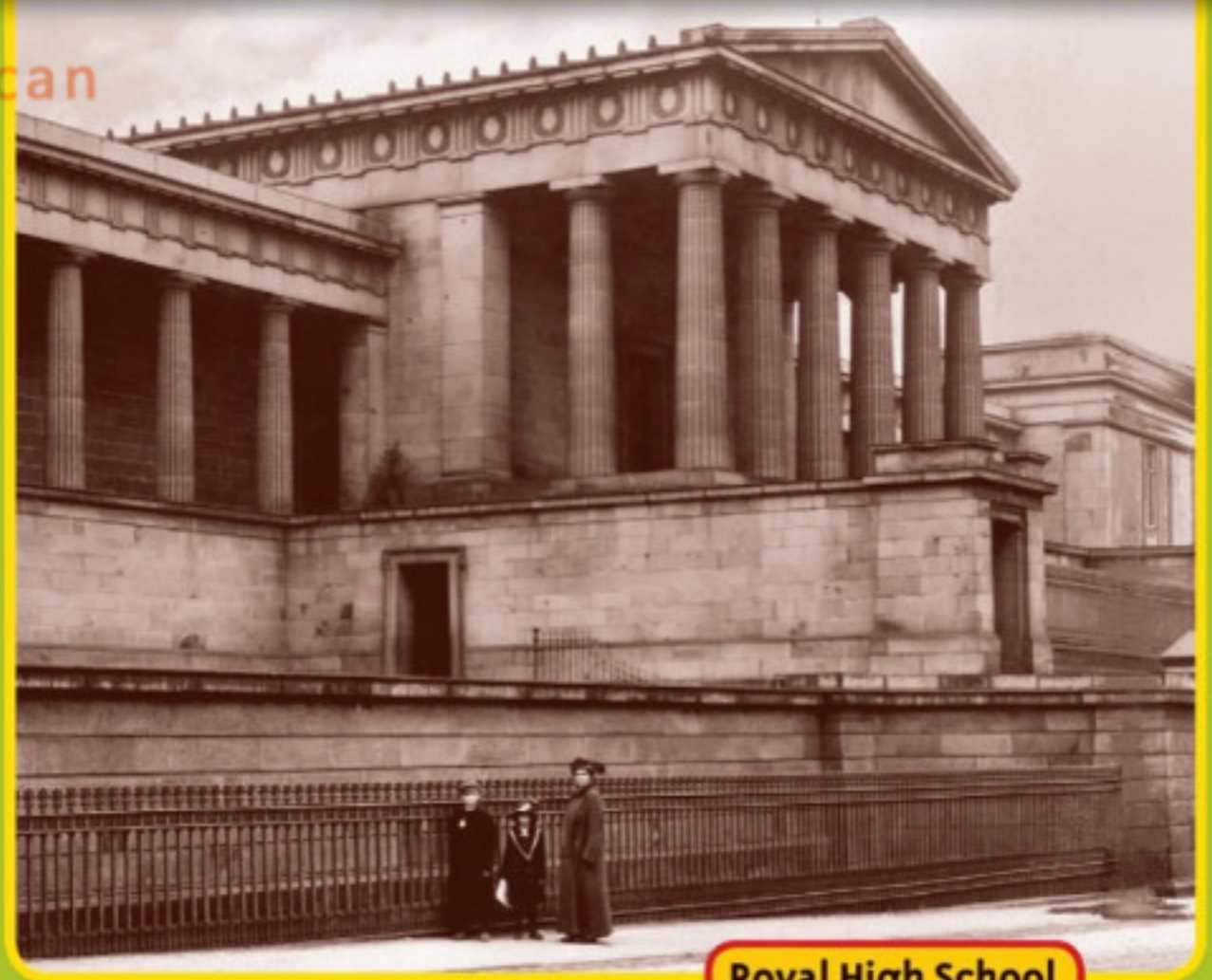
As a boy, Bell enjoyed music. He could listen to a song, then sit down and play it on the piano. He could remember the notes he heard. Then he played them back.

He liked science, too.

He collected shells, birds' eggs, butterflies, and bugs. Later he added skeletons of small animals, such as frogs and mice.



Bell continued to play music all his life.



Royal High School

His mother homeschooled him until he was 10. When he was 11, he went to Royal High School. He graduated when he was 14 years old.

**That's a Fact!**

Bell created his first invention when he was 11 years old. It was a machine to remove the husk, or outer covering, from grains of wheat.

# In His Time

公众号: Wecancan

When Bell was a boy in Scotland in the 1850s, many things were different from how they are now.

## Toys

Boys played marbles, and girls jumped rope. Both boys and girls played with large iron hoops they rolled along the streets.



## Transportation

People traveled on foot or horseback, or by cart or coach. Wealthy people could afford to travel by steamship and trains.



## School

Many poor children in Edinburgh could not go to school at all. They worked in mines and factories to earn money to help their families.



## MORSE'S TELEGRAPHIC CODE

ALPHABET			
a	· —	m	— —
b	— · · ·	n	— ·
c	· · · ·	o	· · ·
d	— · ·	p	· · · · ·
e	·	q	· · · —
f	· · ·	r	· · · ·
g	— · ·	s	· · · ·
h	· · · · ·	t	—
i	· ·	u	· — —
j	· — · ·	v	· · · —
k	— · —	w	— — —
l	—	x	· — · ·
		y	· · · · ·
		z	· · · · ·
		&	· · · · ·
		NUMERALS	
		1	· — — —
		2	· · — —
		3	· · · —
		4	· · · ·
		5	— — —
		6	· · · · ·
		7	— — —
		8	· · · · ·
		9	· · · · ·
		0	— — —

## Communication

The fastest way to send messages was by telegraph. The telegraph machine used electricity to send messages over a wire from one place to another. The messages were in code.

## History

Edinburgh was divided into two sections. The Old Town stretched along the foot of a rocky cliff. The famous Edinburgh Castle sat at the top of the cliff overlooking the city. Bell lived in the section called the New Town.



# Young Teacher

In 1863, Bell began teaching speech and music. He was 16 years old. Some of his students were older than he was!

He also studied his father's Visible Speech system. The system used symbols (SIM-bulls) to show how the mouth, tongue, and lips make sounds.

Bell helped his father demonstrate (DEM-un-strate) how it worked to groups of people.



**Words to Know**

**VISIBLE:** Able to be seen

**SYMBOL:** A letter or picture used instead of words

**DEMONSTRATE:** To show how something works

ഭവ്യം വ്യക്തം ഇ ദൃശ്യം നമിതം.  
 [ENGLISH ALPHABET OF VISIBLE SPEECH,  
 Expressed in the Names of Numbers and Objects.]

(Pronounce the Sign.)	തരണം (Names.)	(Name the Objects.)	തരണം	(Name the Objects.)	തരണം
1.	൧		൧		൧
2.	൨		൨		൨
3.	൩		൩		൩
4.	൪		൪		൪
5.	൫		൫		൫
6.	൬		൬		൬
7.	൭		൭		൭
8.	൮		൮		

ICANNANAKA. [EXERCISE.]

൧൧ ൧൧ ൧൧ One by one.	൨, ൨ Two, a couple.	൧൧ ൧൧ ൧൧ Twelve, a dozen.	൧൧ ൧൧ ൧൧ Twenty, a score.	൧൧ ൧൧ ൧൧ A hunting whip.
൨ ൨ ൨ Two or three.	൧൧ ൧൧ ൧൧ A book-case.	൧൧ ൧൧ ൧൧ New book-shelves.	൧൧ ൧൧ ൧൧ A silver watch.	൧൧ ൧൧ ൧൧ A table lamp.
൪ ൪ ൪ Four at once.	൧൧ ൧൧ ൧൧ A few books.	൧൧ ൧൧ ൧൧ A gold watch.	൧൧ ൧൧ ൧൧ The watch-key.	൧൧ ൧൧ ൧൧ A bunch of onions.
൫ ൫ ൫ Five o'clock.	൧൧ ൧൧ ൧൧ New book-shelves.	൧൧ ൧൧ ൧൧ A good saw.	൧൧ ൧൧ ൧൧ Cup and leather.	൧൧ ൧൧ ൧൧ Corns and husks.
൬ ൬ ൬ Half-past six.	൧൧ ൧൧ ൧൧ A silver watch.	൧൧ ൧൧ ൧൧ A good saw.	൧൧ ൧൧ ൧൧ Tongs and shovel.	൧൧ ൧൧ ൧൧ A ship's boat.
൭ ൭ ൭ Seven-thirty.	൧൧ ൧൧ ൧൧ The watch-key.	൧൧ ൧൧ ൧൧ Cup and leather.	൧൧ ൧൧ ൧൧ Sugar-tongs.	൧൧ ൧൧ ൧൧ A sailing boat.
൮ ൮ ൮ Eight to nine.	൧൧ ൧൧ ൧൧ A gold watch.	൧൧ ൧൧ ൧൧ Tongs and shovel.		൧൧ ൧൧ ൧൧ Curt and horns.
൯ ൯ ൯ Ten or twelve.	൧൧ ൧൧ ൧൧ The watch-key.			൧൧ ൧൧ ൧൧ A round lent.
൧൦ ൧൦ ൧൦ Twice two, four.				൧൧ ൧൧ ൧൧ Rows of houses.
൧൧ ൧൧ ൧൧ Twice three, six.				൧൧ ൧൧ ൧൧ A dog kennel.
൧൨ ൧൨ ൧൨ Four and four, eight.				൧൧ ൧൧ ൧൧ A little monkey.
൧൩ ൧൩ ൧൩ Five and four, nine.				൧൧ ൧൧ ൧൧ A golly egg.
൧൪ ൧൪ ൧൪ Twice or thrice.				൧൧ ൧൧ ൧൧ A green canary.

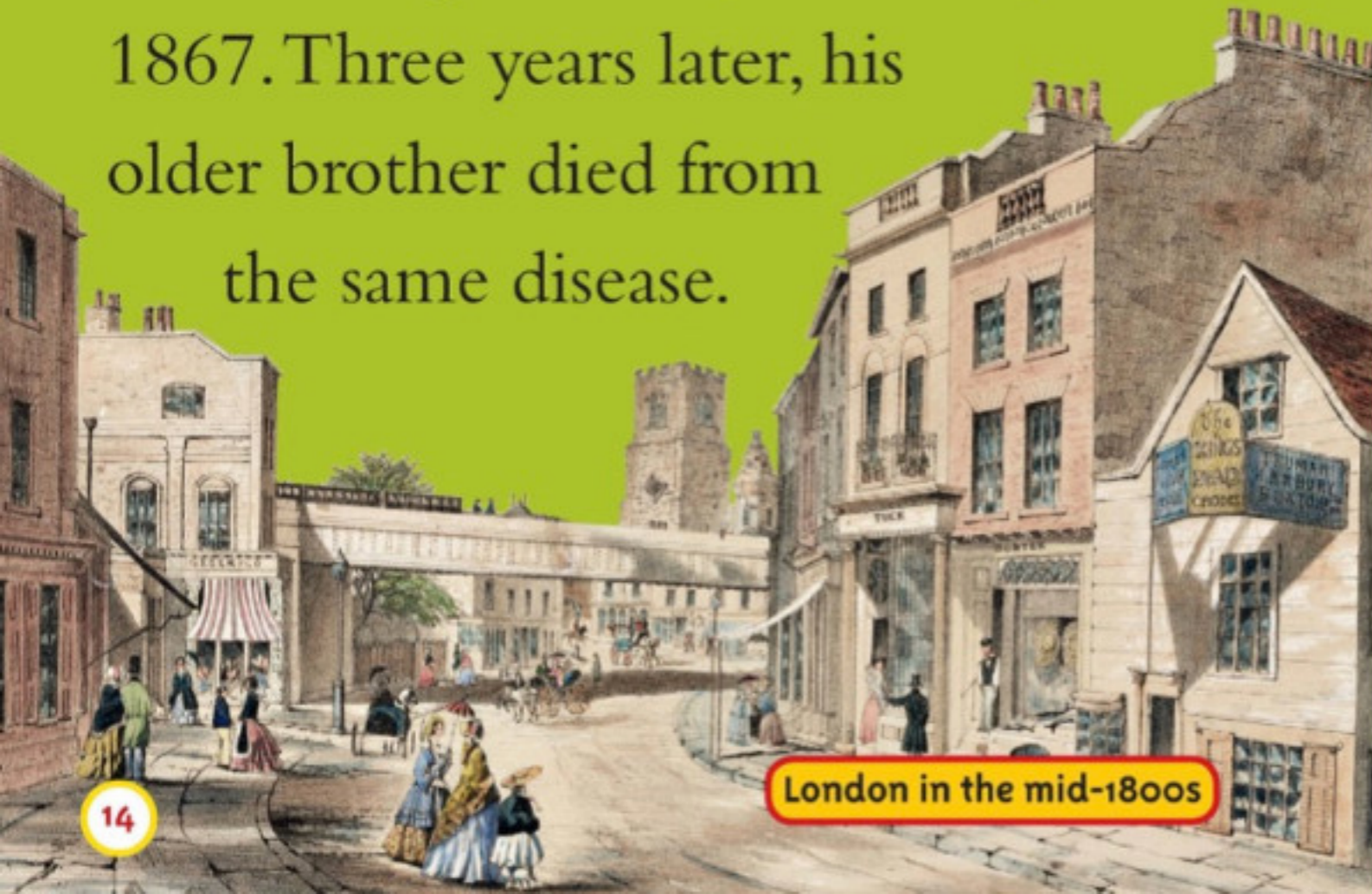
This chart shows symbols in the Visible Speech system.

Bell and his father later believed the Visible Speech system could help deaf people learn to talk.

# A New Country

The Bell family moved to London in 1865. Bell studied and taught there. At one school, he used his father's Visible Speech system to teach deaf children.

Sadly, Bell's younger brother died from a lung disease (di-ZEEZ) in 1867. Three years later, his older brother died from the same disease.



London in the mid-1800s



The Bell family's home in Ontario

Bell's parents said it was because of the polluted (puh-LOO-ted) air in the large city.

In 1870, Bell and his parents sailed to Canada. They moved into a home in Ontario (on-TARE-ee-oh).

Bell's father said he liked the fresh, clean air there.

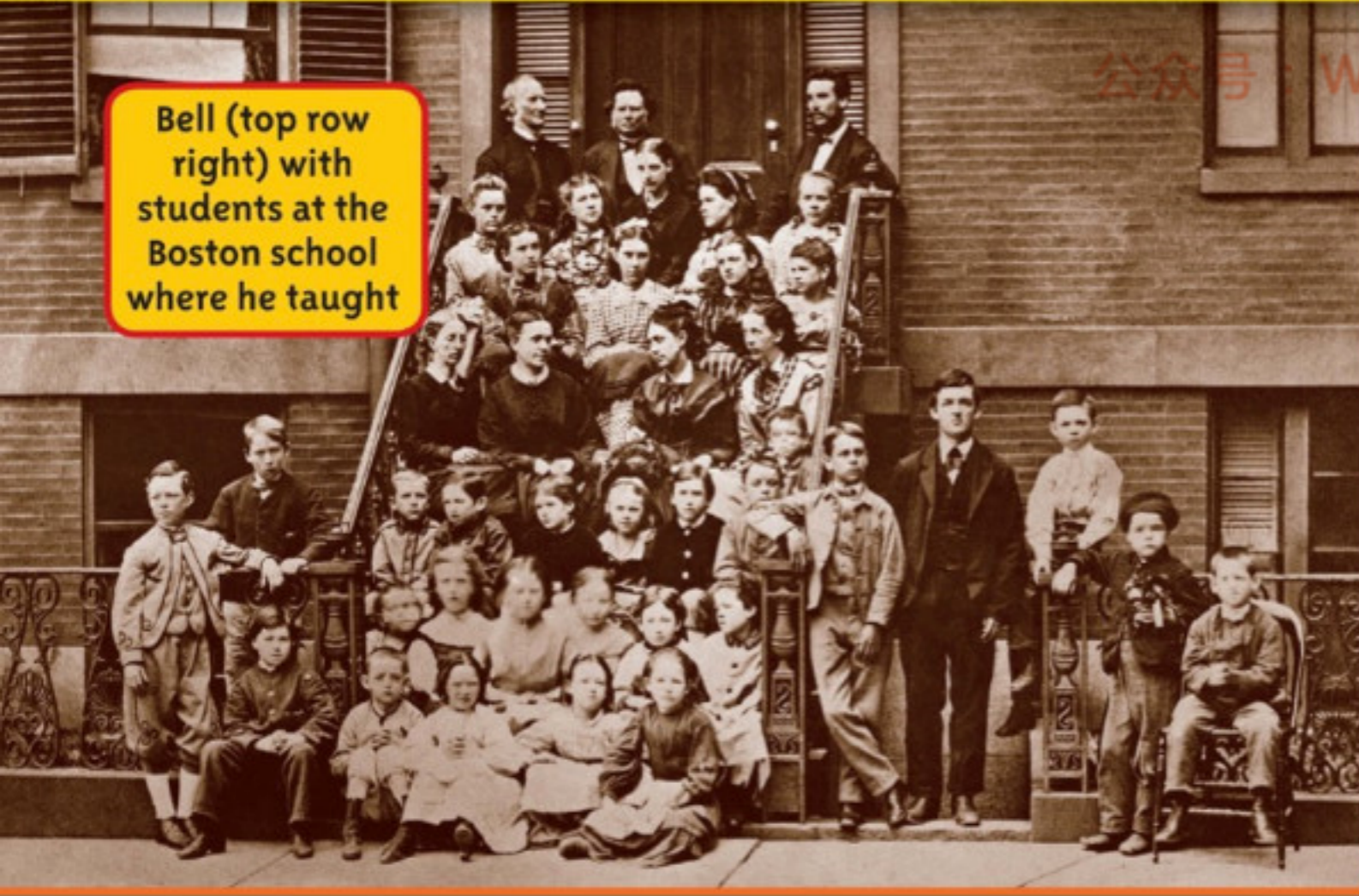


**Words to Know**  
DISEASE: An illness  
POLLUTED: Dirty, not safe



公众号: Wecancan

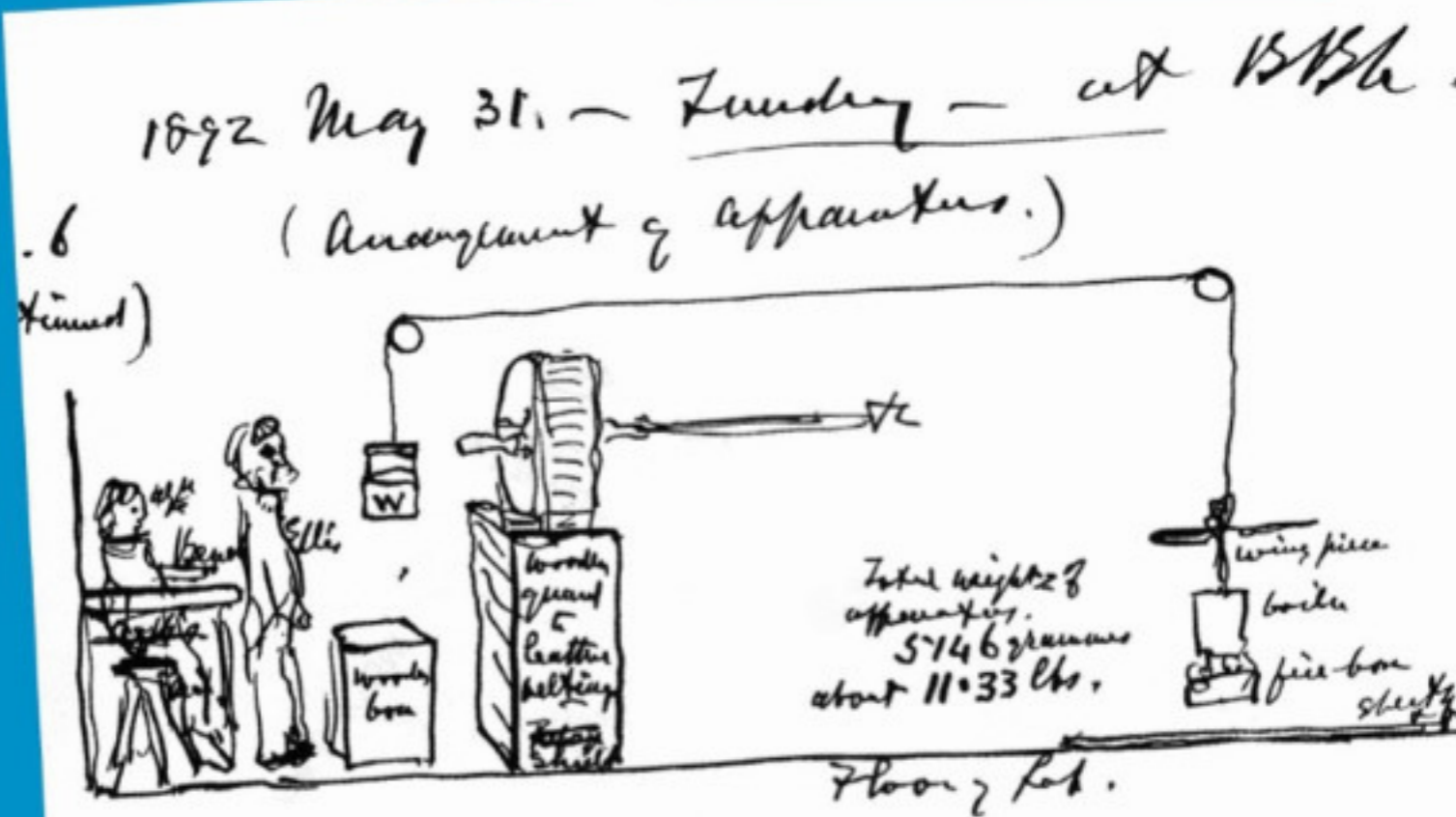
Bell (top row right) with students at the Boston school where he taught



In Boston, there were many inventors. Bell had ideas for inventions, too. He taught during the day. Then he worked on his inventions late into the night. It did not give him much time for sleep.

A page from Bell's notebook where he made sketches of his inventions

Bell's father traveled to Boston, Massachusetts. He met the principal of a school for deaf people. The school was looking for a teacher. Bell's father said his son would be good for the job. In 1871, Bell began teaching there.



9.22 p.m. Fire lighted. Messrs. Stearns - working - both together

# A Big Idea

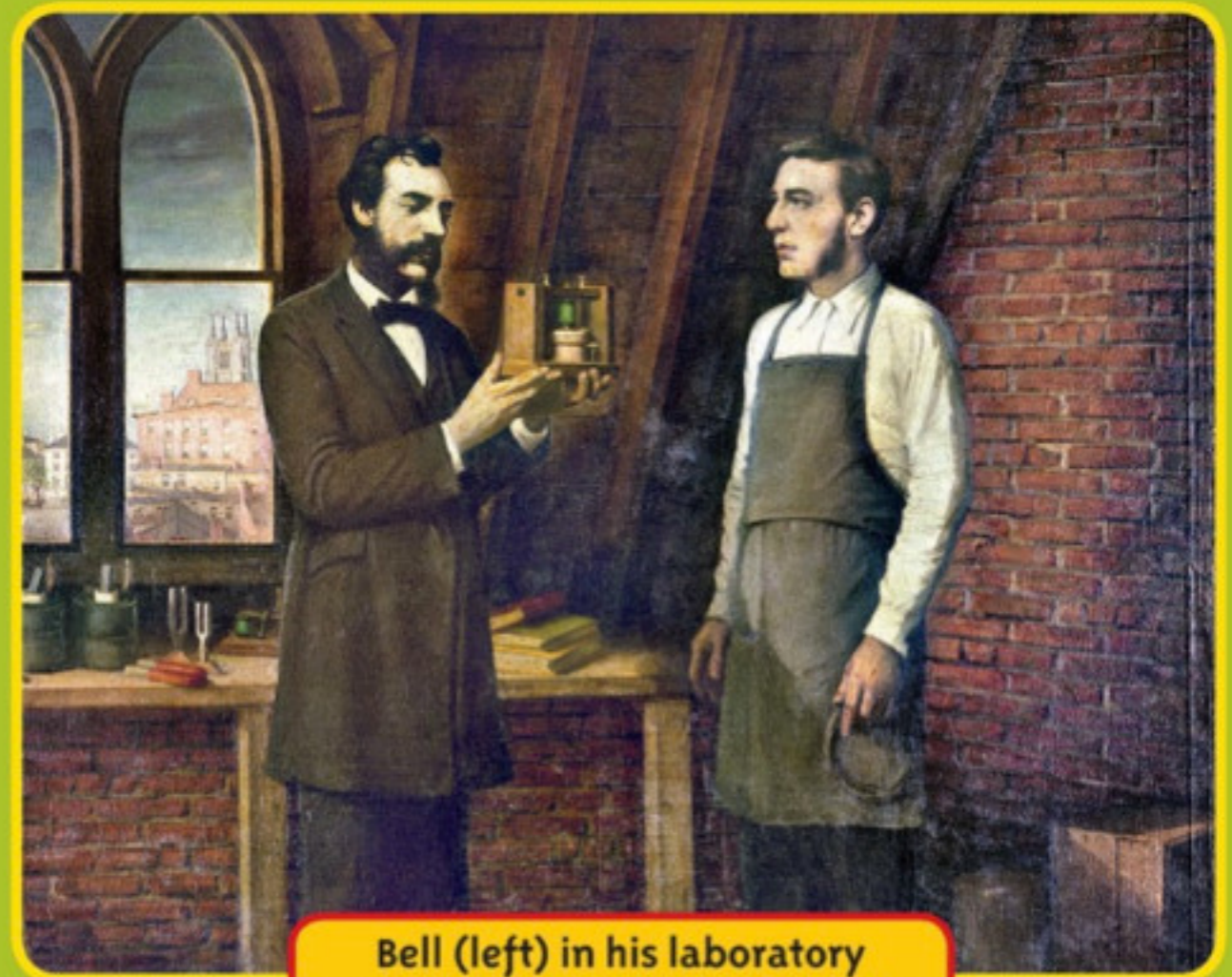
公众号：Wecancan

At that time, the telegraph was the fastest way to send messages. Bell wanted to make it work faster. He needed to find a way to send more than one message over a wire at a time.



While he was working on that, he got an even bigger idea. What if voices could travel by wire from place to place? That would be much faster than the telegraph.

Bell was not good at building things. He needed someone who could turn his sketches, or drawings, into a working machine. In January 1875, Thomas Watson became his assistant (uh-SIS-tant).



Bell (left) in his laboratory with his assistant, Watson (right)

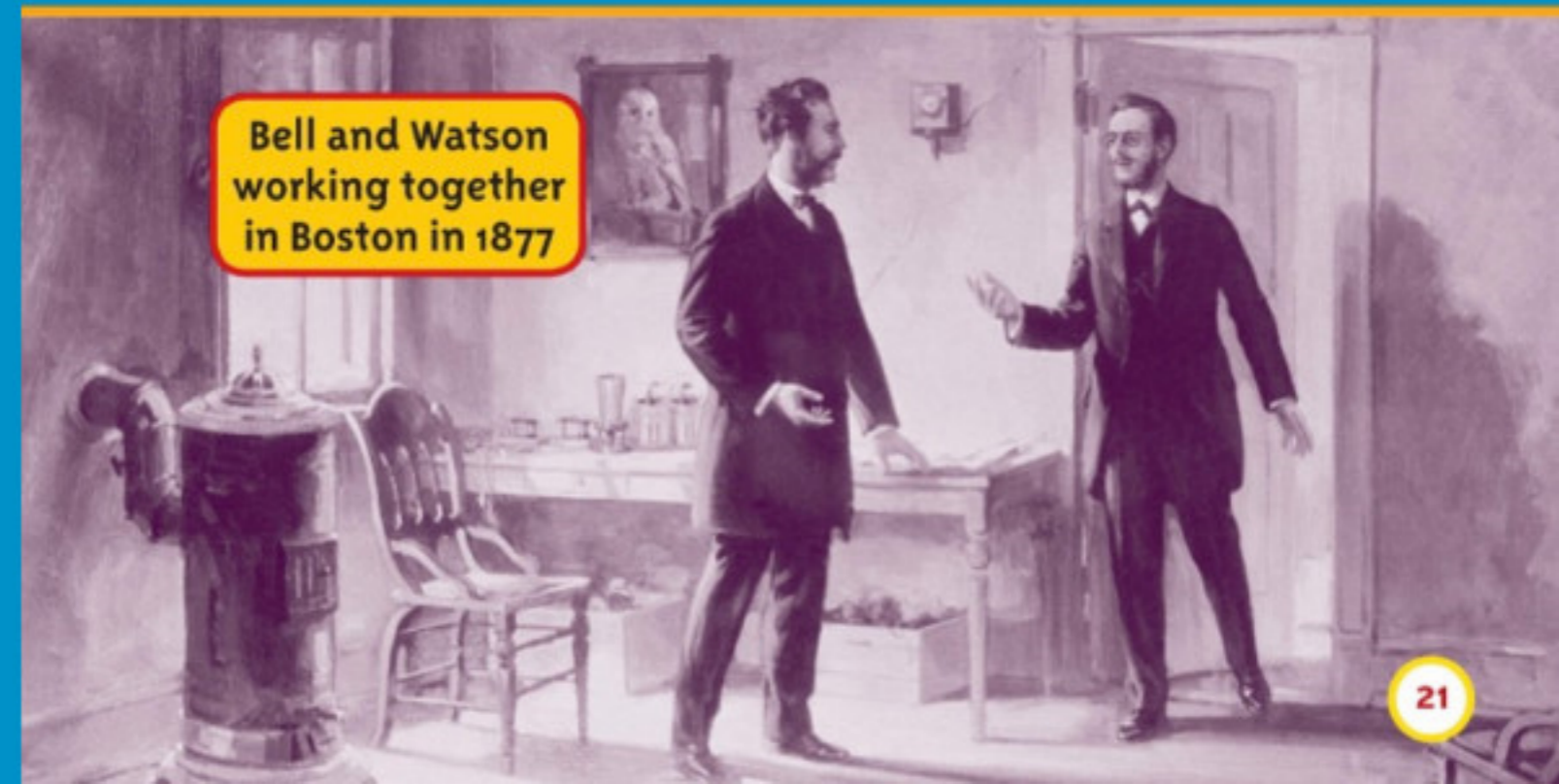


### In His Own Words

“There are no unsuccessful experiments; every experiment contains a lesson.”

Bell and Watson tried one thing, then another. Many of their experiments did not work. But they did not give up.

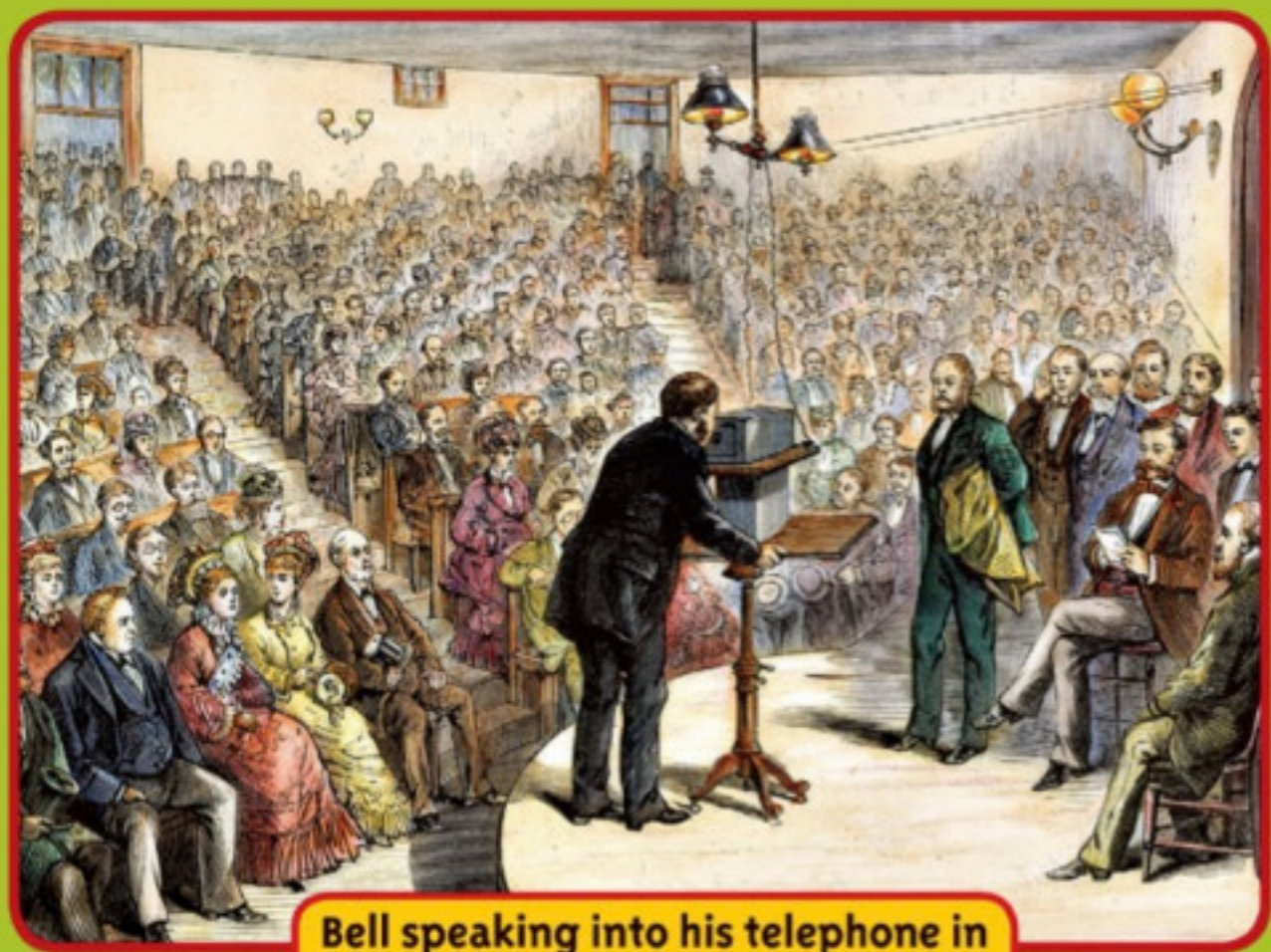
More than a year later, on March 10, 1876, Bell was ready for another test. “Mr. Watson—come here—I want to see you,” he shouted into his machine. Watson was working in another room. He ran to Bell with exciting news. He had heard Bell’s voice through the wire! That was the very first telephone call.



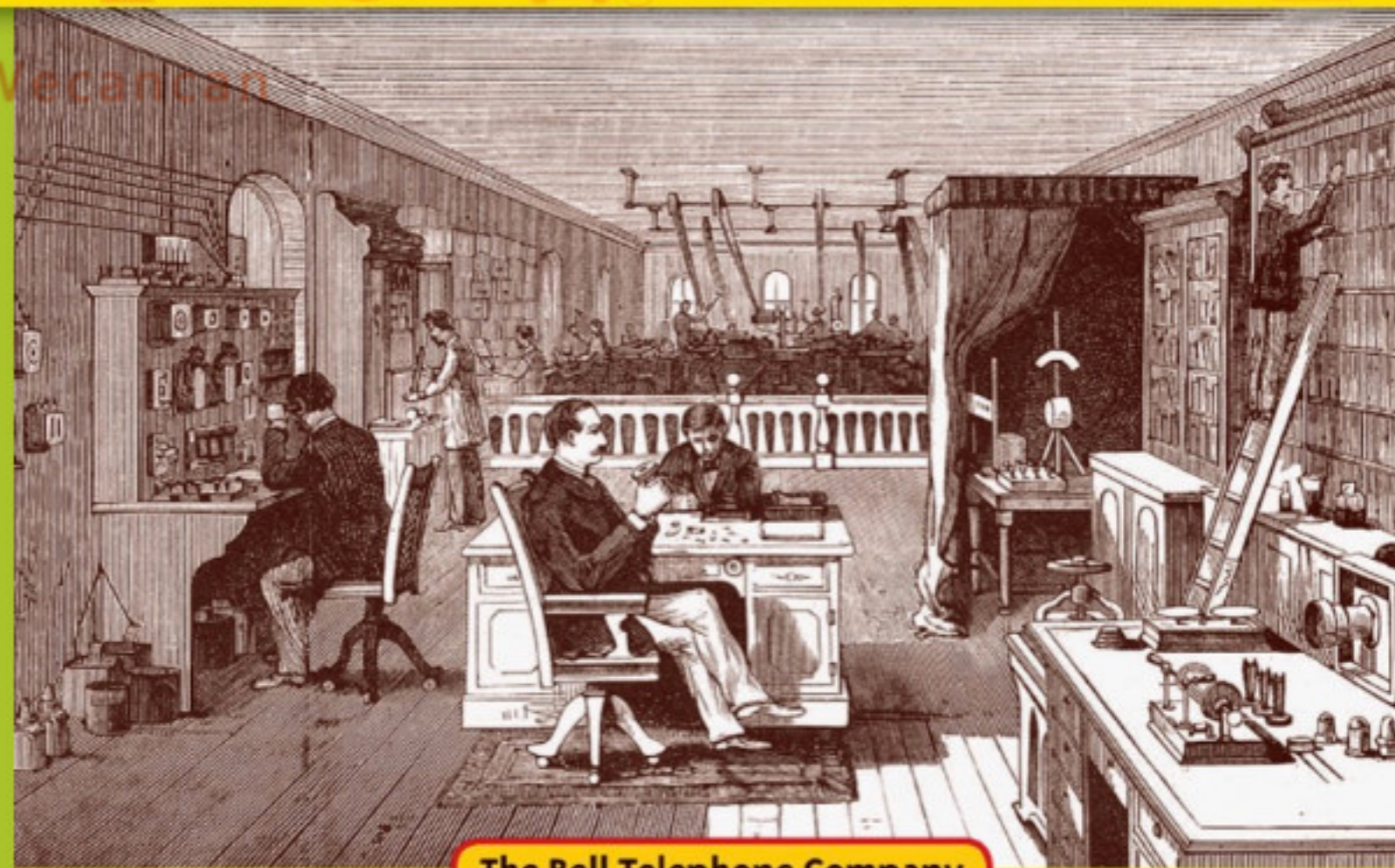
# Presenting the Telephone

公众号: WecanCan

In June 1876, Bell demonstrated his telephone at a large fair in Philadelphia (fill-uh-DEL-fee-uh), Pennsylvania. People were amazed.



Bell speaking into his telephone in front of a large crowd



The Bell Telephone Company

They lined up to take turns listening and speaking on the telephone.

A year later, Bell and three other men created the Bell Telephone Company. They charged people a fee to use telephones in their homes and places of work.

# 7 Cool Facts About Bell

公众号：Wecanacan



1

Fifteen-year-old Bell and his older brother used rubber, tin, and wood to make a talking skull.



2

Bell married Mabel Hubbard. She had been one of his students. Mabel had lost her hearing because of a childhood illness.



3

Bell had a picture of an owl hanging in his lab. His wife gave it to him as a joke because he worked so late at night.



4



Bell was very interested in flight. He built giant kites to help him learn more about it.



5

Bell trained his horse well. When Bell clapped once, the horse took Bell to his lab. Two claps meant "go home."



6

On January 25, 1915, Bell made the first coast-to-coast telephone call from New York to California.



7

Bell encouraged his ten grandchildren to explore new ideas. He created more than 100 experiments for the children to do.

# New Adventures



The Bell family's second home in Cape Breton in Canada



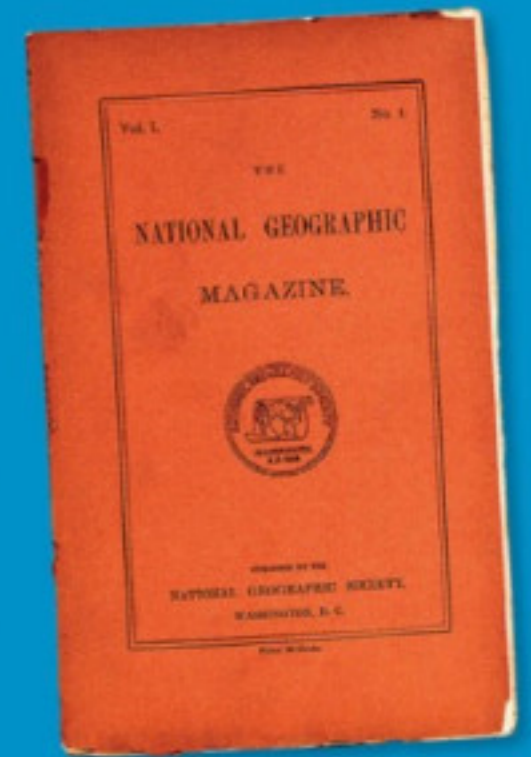
Bell and his family moved to Washington, D.C., in 1879. Bell set

up a lab and began working on different inventions.

**That's a Fact!**

In 1879, President Rutherford B. Hayes had the first telephone put in the White House. He did not get many calls because only a few people had telephones.

In 1898, Bell became president of the National Geographic Society. He made *National Geographic* magazine better by adding photographs and maps from places all around the world.



**1847**

Born in Edinburgh, Scotland, on March 3

**1858**

Creates his first invention

**1862**

Builds a talking machine with his older brother

**1863**

Begins teaching speech and music

**1870**

Moves to Ontario, Canada

**1871**

Begins teaching at a school for the deaf in Boston, Massachusetts

# Helping Others

公众号: Wecancan



Bell works with Helen Keller (left), a woman who overcame being both deaf and unable to speak.

Bell died on August 2, 1922. In his honor, the whole telephone system was shut down for one minute.

Bell never stopped experimenting. He spent his life helping others in many ways. He taught deaf people to talk. His telephone changed the way we communicate. It made our lives easier, and it made Bell one of the best known inventors in the world.

**1876**

Makes the first telephone call to his assistant on March 10

**1877**

Marries Mabel Hubbard on July 11

**1879**

Moves to Washington, D.C.

**1915**

Makes the first coast-to-coast telephone call

**1922**

Dies on August 2

# Be a Quiz Whiz!

See how many questions you can get right! Answers are at the bottom of page 31.

Bell was born in \_\_\_\_\_.

- A. Ontario
- B. Edinburgh
- C. Boston
- D. London



1



2

Bell's first invention was \_\_\_\_\_.

- A. A telegraph
- B. A talking machine
- C. A telephone
- D. A machine to remove husks from grains of wheat

Bell began teaching speech and music when he was \_\_\_\_\_ years old.

- A. 16
- B. 18
- C. 21
- D. 25



3



4

Before Bell invented the telephone, the fastest way to send messages was by \_\_\_\_\_.

- A. Email
- B. Steamboat
- C. Telegraph
- D. Train

Bell made the first coast-to-coast telephone call in \_\_\_\_\_.

- A. 1876
- B. 1915
- C. 1920
- D. 1922



5



6

In 1876, Bell showed his telephone at a large fair in \_\_\_\_\_.

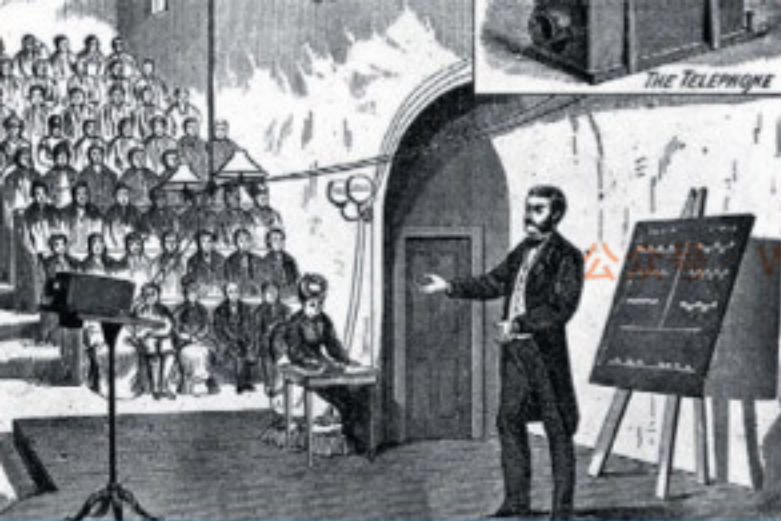
- A. Boston
- B. New York
- C. Washington, D.C.
- D. Philadelphia

The first president to have a telephone in the White House was \_\_\_\_\_.

- A. Lincoln
- B. Garfield
- C. Hayes
- D. Jackson



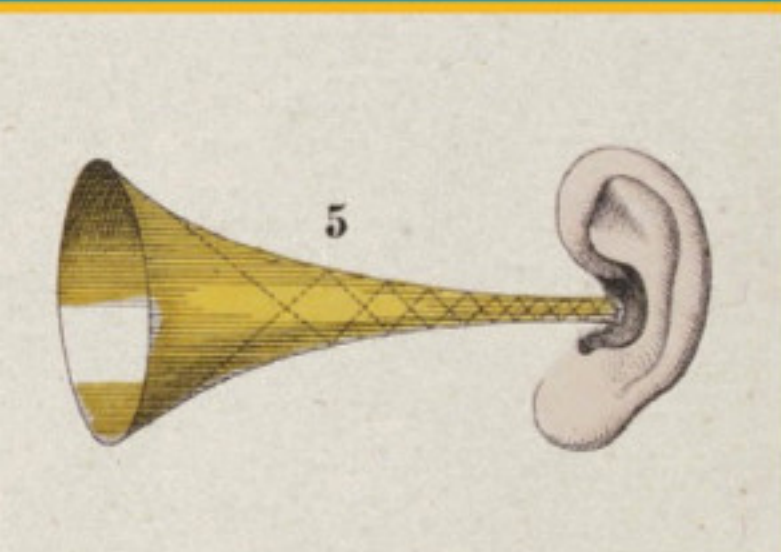
7



**DEMONSTRATE:** To show how something works



**DISEASE:** An illness



**EAR TUBE:** A horn-shaped tool that guides sound to the ear



**POLLUTED:** Dirty, not safe

ପଞ୍ଜିକା (Names)	(Name the Objects)	ପଞ୍ଜିକା (Names)	(Name the Objects)	ପଞ୍ଜିକା (Names)
କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର
ଘଣ୍ଟା		କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର
କଣ୍ଠା		କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର
କଣ୍ଠା		କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର
କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର
କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର
କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର
କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର		କ୍ଷୁଦ୍ର

**SYMBOL:** A letter or picture used instead of words



**VISIBLE:** Able to be seen