SESSION 1 TALK ABOUT THE TOPIC

From Here to There

FOCUS QUESTION

How have we improved communication over time?

NOTICE AND WONDER

Look at the three texts you will read in this lesson. What do you notice? What do you wonder? Discuss your ideas with a partner.

TECH TIME

Read the terms related to technology and communication. Draw a circle around any terms you know. Add more terms in the space below. Do not worry if you don't know all of the terms; you will learn about them in the lesson.

telegraph	Morse code	emoji
text message	email	smartphone

_____

_____

_____

The term ___ means ___. This type of communication makes me think of the related term ___.

The term ___ is also related to technology and communication.

A Visual History of Communication

by Annika Pederson

Live Wires

by Anna Levine

The Emoji: From Idea to Reality

by Jackie Letera

SESSION 1 READ

A Visual History of Communication

by Annika Pederson

The world of communication has changed remarkably over the last 150 years. Until 1876, the telegraph was the only form of technology that enabled rapid long-distance communication. But though the telegraph changed the way people communicated, it fell out of use after the telephone was invented in 1876. Further developments in technology took place relatively quickly over the next century or so. This timeline shows important moments.

1837

Electric Telegraph
William Cooke and Charles Wheatstone invented the first commercial electric telegraph. They received a patent, or the legal right to be the only ones to make it. It sent electric currents over a wire to a receiver. Needles on the receiver would point to letters to spell out the sender's message.

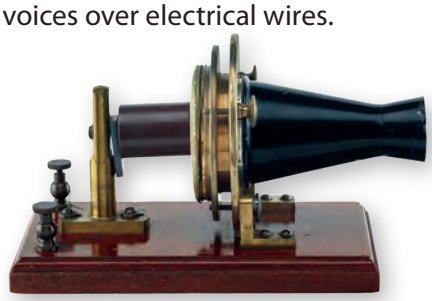
1844

A	•–	N	–•	1	•–––––
B	–•••	O	–––	2	••–––––
C	–•–•	P	•––•	3	•••–––
D	–••	Q	––•–	4	••••–
E	•	R	•–•	5	•••••
F	••–•	S	•••	6	–••••
G	––•	T	–	7	––•••
H	••••	U	••–	8	–––••
I	••	V	•••–	9	––––•
J	•–––	W	•––	0	–––––
K	–•–	X	–••–		
L	•–••	Y	–•––		
M	––	Z	––••		

Morse Code Message
Samuel Morse sent the first Morse code message on an electromagnetic telegraph he had invented seven years earlier. Morse developed the code with Alfred Vail. Messages were sent by tapping out coded sequences of short and long signals, known as dots and dashes, for each number and letter.

1876

Telephone Alexander Graham Bell was awarded the first patent for the telephone. It transmitted people's voices over electrical wires.



1901

Radio Message
Italian inventor Guglielmo Marconi transmitted the first radio message across the Atlantic Ocean. His accomplishment proved that wireless radio waves could travel thousands of miles.

Stop & Discuss

Why was the first radio message so exciting compared to the technology that came before it?

CELL PHONES THEN AND NOW

Cell phones have been transformed since they were introduced in 1973. The first cell phone weighed 2 ½ pounds (1,134 grams) and simply allowed people to talk to each other. It was much later, in 1998, when ringtones became the first feature that people could download. Today's smartphones perform many of the tasks that full-size computers do, but they can weigh as little as 4 ounces (113 grams).

1973

Cell Phone The first cell phone, developed by a team of engineers led by Martin Cooper, was the size of a brick. It cost more than most people could afford, but you could take it with you!

1971

Email Computer engineer Ray Tomlinson sent the first electronic mail message. The message was sent between computers in the same room through an early version of the internet.

1989

World Wide Web Invented by Tim Berners-Lee, the Web gave computers (and the people using them!) a way to share and store information on the internet.

1992

Text Message Neil Papworth, an engineer for a telecommunications company, sent the world's first text message. One year later, text messaging was available on cell phones, but it was not used widely until the late 1990s.

Smartphone The first smartphones let users access email. These phones had a calendar, calculator, notepad, touchscreen keyboard, and more. Four years later, smartphones could also access the Web, but it wasn't until 2007 that they became popular.

Stop & Discuss

How did the World Wide Web improve communication?

SESSION 2 PRACTICE

Find Information from Multiple Sources

- You often need to look at many parts of a text to find information on a topic. Knowing how to get information from different parts of the text can help you answer questions quickly.
- **Text features** are special parts of a text that help you find certain information. Headings, captions, and sidebars are examples of text features.

Reread/Think

Answer each question using information from "A Visual History of Communication." Then make a checkmark in one or more columns to show the text features in which you found the information.

Question	Introduction	Timeline Entry	Sidebar
What was the relationship between the telegraph and Morse code?			
What happened in 1971?			
How are smartphones different from cell phones?			

Talk

Refer to the text features of "A Visual History of Communication" as you discuss your answers in the chart.

I learned ___ and ___ about the telegraph from the introduction and the timeline.

The sidebar tells me more about ___ than the timeline does.

Write

How did communication develop from the telegraph to the smartphone? Include at least four developments from "A Visual History of Communication" and draw details from all of the text features to support your response.

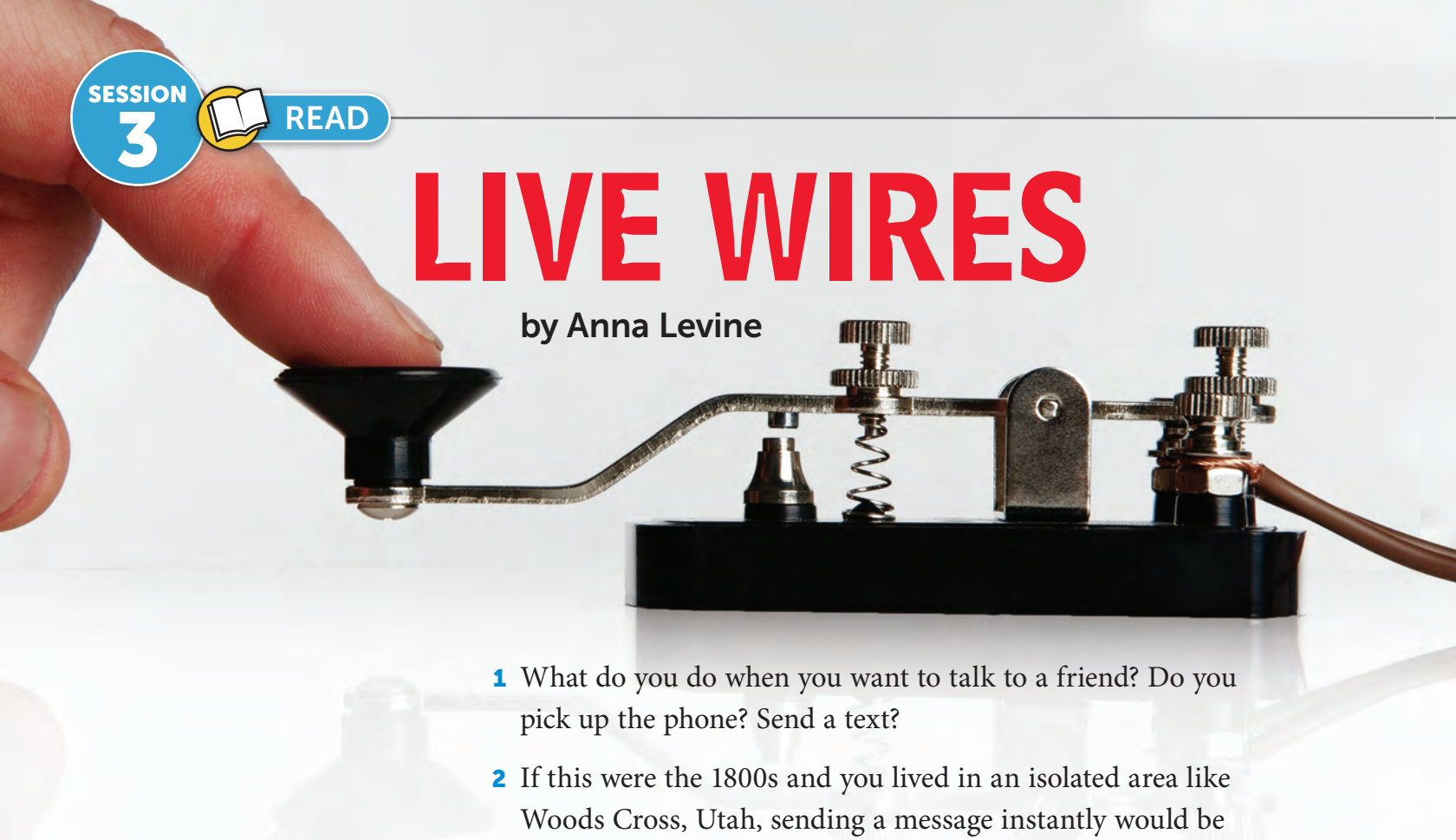
WRITING CHECKLIST

- ☐ I included details about at least four developments in communication.
- ☐ I used details from the introduction, the timeline entries, and the sidebar.
- ☐ I used complete sentences.
- ☐ I used correct spelling, punctuation, and capitalization.

SESSION 3 READ

LIVE WIRES

by Anna Levine



1 What do you do when you want to talk to a friend? Do you pick up the phone? Send a text?

2 If this were the 1800s and you lived in an isolated area like Woods Cross, Utah, sending a message instantly would be one way.

3 Believe it or not, long-distance chatting is more than 150 years old. It started with the invention of the telegraph, a system for transmitting messages long distances along a wire.

Dots and Dashes

electromagnetic = relating to an electric current and a magnetic field

4 The messages received by telegraph looked a lot different from the ones we receive today by computer or phone. The **electromagnetic** telegraph system used coded signals designed by inventor Samuel Morse and Alfred Vail. The code used different sequences of dots and dashes to represent letters, numbers, and punctuation.

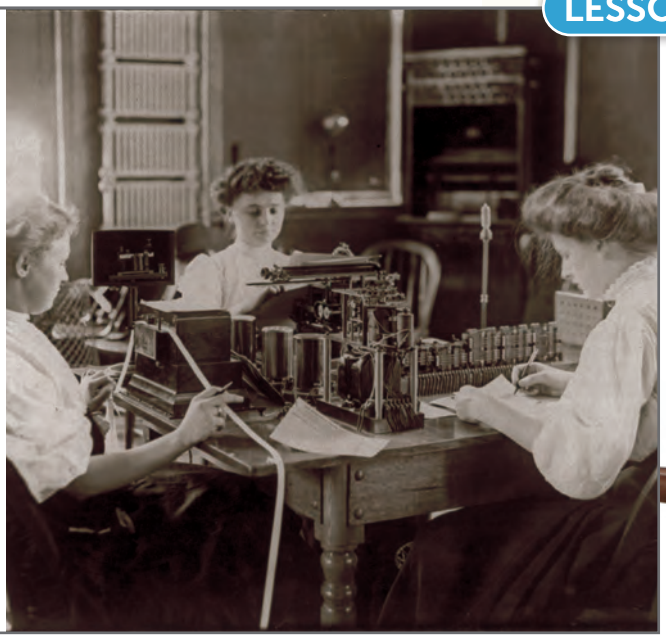
Stop & Discuss

What did a long-distance instant message look like in the 1800s?

Underline the sentences in paragraphs 4 and 5 that best support your response.

5 The dots and dashes were sent by skilled telegraph operators, using a tapper, or "key." One short tap was a dot. One long tap was a dash. The taps were changed into electrical impulses and transmitted over telegraph wires. On the other end of the wire, the telegraph operator converted the electrical impulses into dots and dashes on paper tape. These dots and dashes became universally known as Morse code.

A	•–	N	–•	1	•–––––
B	–•••	O	–––	2	••–––
C	–•–•	P	•––•	3	•••––
D	–••	Q	––•–	4	••••–
E	•	R	•–•	5	•••••
F	••–•	S	•••	6	–••••
G	––•	T	–	7	––•••
H	••••	U	••–	8	–––••
I	••	V	•••–	9	––––•
J	•–––	W	•––	0	–––––
K	–•–	X	–••–		
L	•–••	Y	–•––		
M	––	Z	––••		



Women with telegraph equipment, about 1908. One operator *(left)* handles receiving tape on which a telegraph message is written in Morse code *(far left)*.

6 The more experienced telegraphers didn't have to see the dots and dashes transcribed but could "read" them by their sounds as they came over the wire. Skilled operators even claim they could tell who was at the key by the sound of the clicks!

The Workday and Beyond

7 Telegraph operator was the **"high-tech"** job of the 1800s and the first high-tech job open to women. (The majority of operators were still men, however.) Many operators were employed by railroad companies. They helped prevent collisions by letting train engineers know when the train ahead of them had left a station. Other operators worked in offices that transmitted messages for businesses and private citizens. These telegraph offices were often located in hotels or even private homes.

high tech = abbreviation for "high technology"; refers to the most modern or current technology available

8 Regardless of where telegraph operators worked, after the workday they found entertaining ways to communicate with each other. Mary Ellen Love was a telegrapher in Utah. Love said that she and her operator friends in different offices kept "in touch with each other by making use of the privilege of chatting over the line after business hours." They had "online" social lives, even in the 1860s! Telegraphers used all kinds of abbreviations in their messages, too—similar to today's LOL and UR.

Stop & Discuss

How did the telegraph machine impact the social lives of the operators?

The telegraph machine allowed the operators to ___.

SESSION 3 READ

***(Left)* A man operates a telegraph key on Nantucket Island, Massachusetts. *(Right)* During World War II, the *New York Times* telegraphed news twice daily to ships at sea using Morse code.**

The Telegraph and Society

9 Telegraphy gave operators the opportunity to make important contributions to society. M. E. Randolph, a telegrapher during the Civil War, passed so many messages over the lines about treating the injured and sick that she volunteered to help get supplies to wounded soldiers! Others, like Eliza Stone, were fearless in carrying out their duties. As a telegrapher in Chicago at the time of the devastating city-wide fire in 1871, Stone remained at her post sending vital information until the last possible moment.

10 Telegrams grew in popularity over the years, reaching their top popularity in the 1920s and 1930s. At that time, the telephone had already been around for 50 years. But it was still cheaper to send a telegram than to make a long-distance phone call.

11 Over the years, newer, more efficient systems of long-distance communication were developed. The telegraph fell out of use by the early 2000s. The last commercial telegram was sent in 2013. However, Morse code is not extinct. It is still used today by aircraft and military professionals. It is also used as an alternative form of communication for people with disabilities or whose ability to communicate is impaired.

Stop & Discuss

Why was the telegraph no longer used much by the early 2000s?

Underline the sentence in paragraph 11 that best supports your response.

Find Information from Multiple Sources

- **Sources** are texts or images that give information about a specific subject area or topic. Sources may be printed or digital. Different sources may approach the same topic differently.
- After you read a text carefully, using strategies like scanning and skimming can help you find information quickly. **Scanning** is searching for a specific text feature, word, or phrase. **Skimming** is reading through something quickly to find the main facts or ideas.

Reread/Think

Use both "A Visual History of Communication" and "Live Wires" to answer the questions. Then make a checkmark in one or more columns to show where you found the information.

Question	A Visual History of Communication	Live Wires
When was the electric telegraph invented?		
How did telegraph operators use the telegraph in their free time?		
Why were telegrams still popular after 1876?		

Choose one answer and translate it into Morse code using the diagram in "Live Wires."

SESSION 4 PRACTICE

Talk

Review the answers in your chart with a partner and discuss these questions:

- How did you find information in the text?
- What type of information would you look for in a timeline?
- What type of information would you look for in a sidebar?
- How are these three text features similar? How are they different?

Use some of the words in the word bank in your discussion.

text	reread	sidebar
skim	scan	timeline

Write

How was the telegraph used over time? In your response, refer to both "A Visual History of Communication" and "Live Wires." Include specific dates and at least two examples of how the telegraph was used.

WRITING CHECKLIST

- ☐ I explained how the telegraph was used over time.
- ☐ I used details from both texts.
- ☐ I included specific dates and at least two examples.
- ☐ I used complete sentences.
- ☐ I used correct spelling, punctuation, and capitalization.

The Emoji

From Idea to Reality

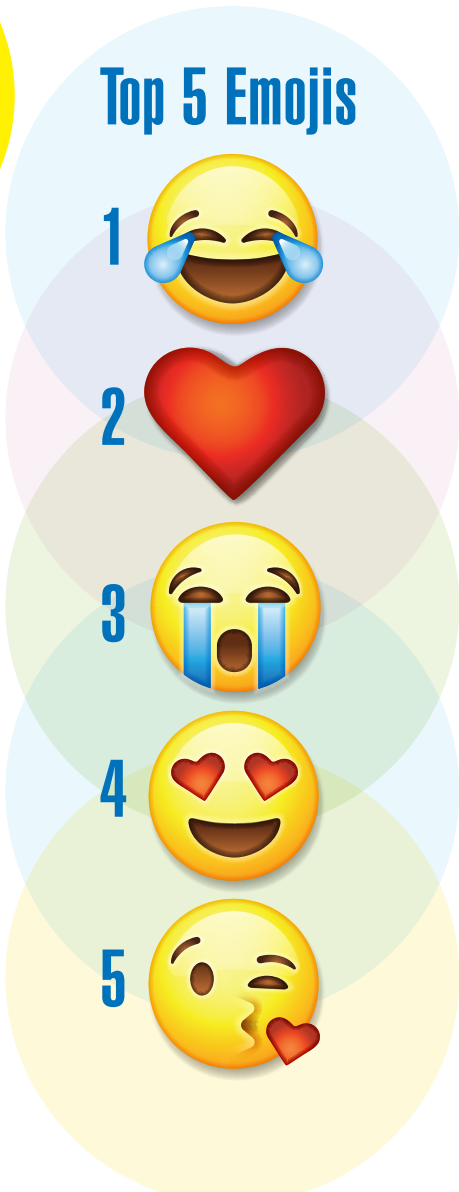
by Jackie Letera

1 When you are texting a friend and want to show how you feel—excited, disgusted, or sleepy—what can you do? Use emojis! These tiny images have become a hugely popular way to communicate thoughts and feelings. Sometimes, though, you might search for an emoji that is perfect for making your point—only to discover that it does not exist. Then what?

A Growing Language

2 You might be able to do something about that situation, because emojis are a "language" that is still growing. The Unicode Consortium is the organization that manages emojis. Every year, its members consider **proposals** for new ones. Anyone can submit an idea, but to have it accepted you need to show that the new image is needed.

3 For example, one proposal was for an emoji of a sloth. Sloths are one of the slowest mammals on Earth, and the emoji would represent being tired, slow, or late. To prove that the emoji would be popular, the proposal **cited** sloth fan pages on social media, sloth characters in movies, and the number of matches for "sloth" in search engines. The Unicode Consortium agreed and added the  emoji in 2019.



proposals = a formal requests or ideas

cited = named as evidence

Reflecting Cultures

4 People also propose emojis to reflect different cultures. Fifteen-year-old Rayouf Alhumedhi couldn't find an emoji of anyone who wore a headscarf like she does. So she proposed one. She pointed out that millions of Muslim women like her wear a hijab every day, but the new emoji could also be used by others who wear headscarves. Her idea was accepted in 2017.

5 As of 2020, the collection had grown from about 500 original emojis to more than 3,000! Do you believe an important emoji is still missing? Then it might be time to start a proposal. You never know which emojis will be added next—and your idea just might be one of them.

Rayouf Alhumedhi proposed an emoji of a person wearing a headscarf.

Emoji Designer

Some of today's emojis (❤️🎉🤷‍♀️) owe their start to Angela Guzman. In 2008, while she was studying design in college, she started working for a major tech company. When the company assigned her to design hundreds of emojis, she initially thought, "What *is* an emoji?" Even though emojis had become popular in Japan in 1999, many people in other countries had never heard of them.

But Angela already understood the benefits of communicating through images. She had been born in Colombia, and when she moved to the United States as a child, she spoke no English. So she drew pictures to communicate with her teachers and classmates. She said, "I noticed immediately the power that an image can have on someone even though you don't speak the same language." The emojis that she later designed are helping people around the world share their ideas.

Respond to Text

Reread/Think

Reread "The Emoji: From Idea to Reality." Choose the best response to each question.

1. What does the heading "A Growing Language" before paragraph 2 tell you about the text that follows?

A. Emojis are helping people speak multiple languages.

B. Emojis are helping the Unicode Consortium invent a new language.

C. Emojis naming animals in many languages are needed.

D. Emojis are a language that is expanding as more people use them.

2. Read this sentence from paragraph 3 of the text.

> Sloths are one of the slowest mammals on Earth, and the emoji would **represent** being tired, slow, or late.

What is the meaning of the word *represent*?

A. show

B. cause

C. prevent

D. encourage

3. What does the illustration on page 375 better help the reader understand?

A. how certain emojis are created

B. how people propose new emojis

C. what the most popular emojis look like

D. what the earliest emoji designs looked like

SESSION 5 PRACTICE

Reread/Think

4. Which paragraph does the photograph of Rayouf Alhumedhi **best** support?

A. paragraph 2

B. paragraph 3

C. paragraph 4

D. paragraph 5

5. What information **most** belongs in the sidebar "Emoji Designer"?

A. a list of every emoji created in 2008

B. the college Angela Guzman attended

C. the first year the Unicode Consortium met

D. an explanation of which emojis are popular in Japan

Write

How does the sidebar titled "Emoji Designer" support the idea in the main text that using images is a useful way to communicate? Use details from the sidebar in your response.

WRITING CHECKLIST

- ☐ I explained how the sidebar supports the idea that using images is a useful way to communicate.
- ☐ I used details from the sidebar and the main text.
- ☐ I used complete sentences.
- ☐ I used correct spelling, punctuation, and capitalization.

Respond to the Focus Question

How have we improved communication over time?

Reread/Think

Review all three texts in this lesson. Take notes in the chart.

	A Visual History of Communication	Live Wires	The Emoji: From Idea to Reality
What I learned			
One thing that surprised me			

Talk

With your classmates, discuss the following questions:

Based on what you have read, what do you think was the biggest change in communication?

How can communication still be improved?

What other emojis do you think are missing today?

Write

How can *you* improve communication today? Write a proposal for a new emoji or describe an improvement to communication. Explain why your idea would improve the way people communicate. Use evidence from at least one text in this lesson to support your response.