

DISCOVER AMERICA

Course 19 - Teacher Guide



Morse's Telegraph and Edison's Electric Light

Table of **Contents**

Themes & Values
Learning Objectives
Key Terms
Introduction
Lesson
Activity
Resources
Notes

Kindergarten

Teacher Guide



Key Themes

- Creative Liberty
- Community
- Experimentation to Improve Quality of Life

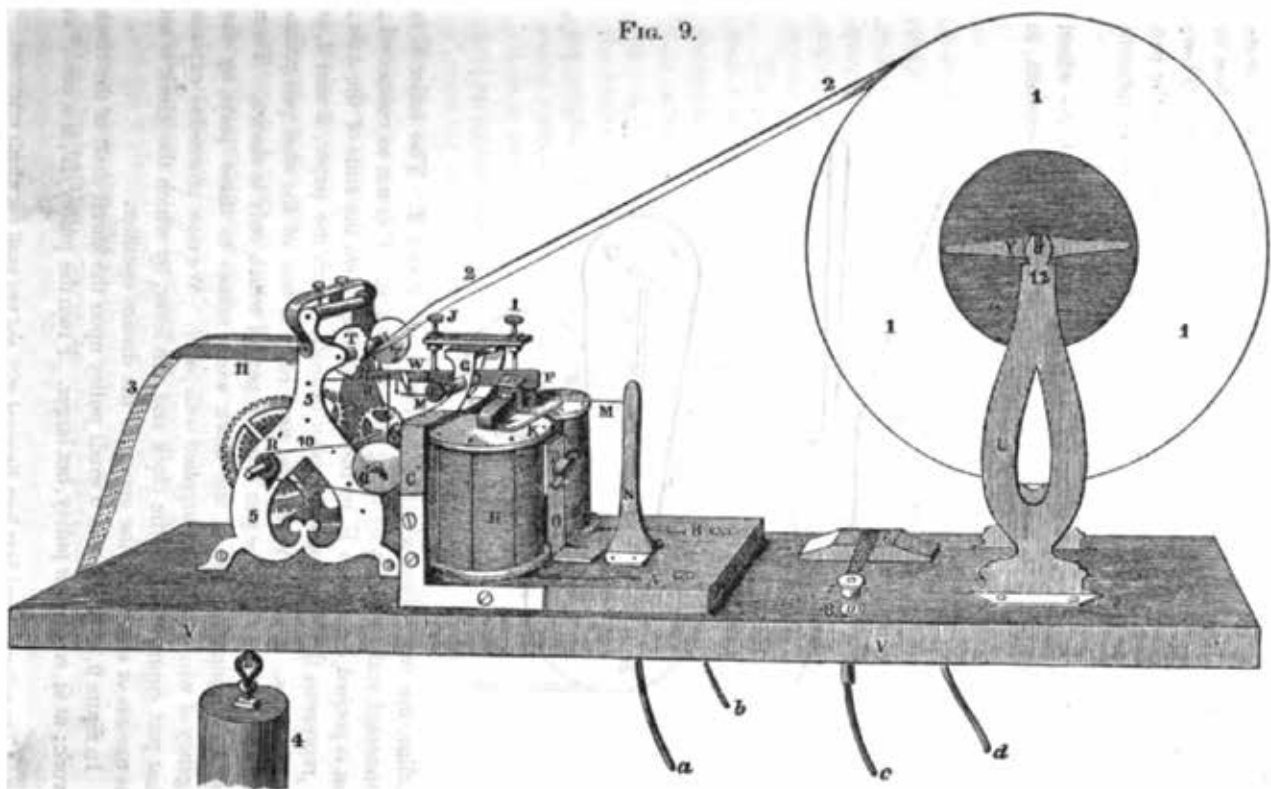
Core Values

- Community
- Life
- Faith
- Liberty

Learning Objectives

Students will be able to:

- Define telegraph.
- Explain the importance of communication.
- List two scientific advancements that influenced life over the centuries.



Morse & Edison - Kindergarten

Key Terms

- 01 **telegraph:** a device that uses wire to transmit messages over long distances.
- 02 **transmit:** to send
- 03 **vibration:** the rapid back and forth movement of an object.

Morse & Edison - Kindergarten

Introduction

TELL Students

When you are home, how do you contact your grandparents or a friend? Would you call them on the phone or Facetime them? Maybe you would borrow your parent's phone to send a text message or an email. Contacting someone has not always been that easy.

Years ago, communication took longer, and we did not receive the instant responses we get today. If you needed to ask a friend a question, you had to walk to their home to talk to them. Or, you had to write them a letter and mail it through the United States Post Office. Thankfully, technology has improved how we connect to others. Today, you will learn how a man named Samuel Morse improved communication.



Samuel Morse

Years ago, when writing a letter, you had to use a gas lantern or a candle to see what you were doing. Both ways could become dangerous because, if not watched, the lantern or candle may tip over and cause a fire. A man named Thomas Edison improved electrical lights so that we no longer have to depend on gas lanterns and candles.



Thomas Edison

Morse & Edison - Kindergarten

Introduction

ASK Students

- Do you know anyone who takes old spare parts of one device and uses them to improve another device?

WATCH

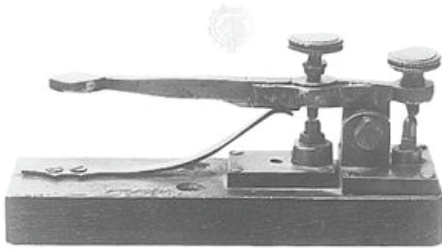
Star Spangled Adventures Cartoon Ep. 19: Thomas Edison



Morse & Edison - Kindergarten

Lesson

Samuel Morse improved the telegraph so that communication was faster and easier. A telegraph is a machine that transmits, or sends sounds representing letters and numbers to communicate with others. Morse used items such as a homemade battery and old clock gears to improve the telegraph! On May 24, 1844, the first official telegraph was sent by Samuel Morse. It said, "What hath God wrought!" This is from a verse in the Bible.



Key-type Morse telegraph transmitter.

WATCH: Learn More with Liberty Video: What's Morse Code? (Kindergarten)



Thomas Edison improved Morse's telegraph system. Edison improved the telegraph so more messages could be sent at the same time. Edison received little education but became one of history's most well-known and successful inventors. He took already-made things and made them work better. Sometimes he made already-made things less expensive so that more people could buy them. He improved the light bulb since light bulbs at the time were expensive and didn't stay lit for long. Once Edison improved the light bulb, it lasted for 1200 hours—or 50 days.

ASK Students

What are some things in our classroom that we can improve? Can you use your creativity to make improvements to already-made things?

Morse & Edison – Kindergarten

Activity

Objective: To help kindergarten students explore the concept of sound and vibration and learn how the telegraph delivered messages using Morse Code in a fun and interactive way.

Materials Needed:

1. plastic cups (two per student pair).
2. thick string (at least 25 feet in length).
3. hole punch.
4. partnering system.
5. optional: clicking devices.

Cup Preparation:

- Punch a small hole at the end of each plastic cup.

Introduction:

- Gather students in a circle and briefly explain that they will be learning how the telegraph sent messages using special codes.
- Emphasize that they will use cups and string to feel sound vibrations, just like the telegraph did with Morse Code.

Cup & String Assembly:

- Show the students how to tie one end of the thick string to the hole in one cup.
- Explain that they will tie the other end to the second cup, making sure the string is at least 25 feet long.
- Assist the students in tying the cups and string together.

Partner Students:

- Help students partner with a classmate.
- Make sure each pair has their own set of cups and strings.

Outdoor Activity:

- Take the students outside to a safe and open area.
- Have each pair stand at least 25 feet apart.
- Instruct the students to take turns sending messages to their partner using the cups and string.
- They can do this by speaking into one cup while their partner listens through the other cup.
- Encourage them to feel the vibrations on the string as they talk.

Optional Activity Variation:

- For added fun, provide clicking devices or teach students a simple snapping activity to mimic Morse Code signals.
- Students can take turns sending and decoding messages using clicks or snaps.

Experiment with Sound:

- After the activity, gather the students and discuss what they learned.
- Ask them about the vibrations they felt and how it was similar to the way the telegraph worked.

Conclusion:

- Summarize the activity by explaining that the telegraph used dots and dashes to send messages quickly, just like they did with their cups and strings.
- Reiterate the concept of sound vibrations.

Morse & Edison - Kindergarten

Resource List

National Council Standards for Social Studies:

"The study of how people organize for the production, distribution, and consumption of goods and services." (NCSS, 1921)

"The study of people, places, and environments." (NCSS, 1921)

"The study of the past and its legacy." (NCSS, 1921)

"The study of relationships among science, technology, and society." (NCSS, 1921)

"The study of individual development and identity will help students to describe factors important to the development of personal identity." (NCSS, 1921)

https://www.pbs.org/wgbh/theymadeamerica/whomade/morse_hi.html

<https://lemelson.mit.edu/resources/samuel-morse>

<https://www.nga.gov/collection/artist-info.1737.html>

<https://lemelson.mit.edu/resources/samuel-morse>

<https://www.nga.gov/collection/artist-info.1737.html>

<https://history.house.gov/Exhibitions-and-Publications/Electronic-Technology/Telegraph/>

<https://lemelson.mit.edu/resources/samuel-morse>

<https://www.history.com/topics/inventions/telegraph>

<https://www.history.com/this-day-in-history/what-hath-god-wrought>

<https://lemelson.mit.edu/resources/samuel-morse>

https://www.pbs.org/wgbh/theymadeamerica/whomade/morse_hi.html

<https://www.history.com/topics/inventions/telegraph>

<https://www.newyorker.com/magazine/2019/10/28/the-real-nature-of-thomas-edisons-genius>

<https://www.energy.gov/articles/history-light-bulb>

<https://www.newyorker.com/magazine/2019/10/28/the-real-nature-of-thomas-edisons-genius>

<https://www.energy.gov/articles/history-light-bulb>

<https://www.newyorker.com/magazine/2019/10/28/the-real-nature-of-thomas-edisons-genius>

<https://www.energy.gov/articles/history-light-bulb>

<https://www.newyorker.com/magazine/2019/10/28/the-real-nature-of-thomas-edisons-genius>

