TELEGRAPH KEY

Artifact no. 1975.0035.001
STL file (ZIP)
Learn more about this artifact
3D Educational Resources - Telegraph Key: A 3D Exploration of Electrical Transmissions

First used commercially in 1838, the telegraph revolutionized long-distance communication. The telegraph worked by transmitting electrical signals over wires. In addition to helping invent the telegraph, Samuel Morse (1791-1872) also developed a system of dots and dashes that represented the letters of the alphabet. This system, known as **Morse Code**, enabled complex messages to be sent using the telegraph system. The telegraph key above was used in a Metcalfe, Ontario telegraph office. The telegraph service in Metcalfe began in 1870 and ended in 1912.

PERSONAL CONNECTIONS
- What is the oldest personal communication device you have ever used (e.g., rotary dial telephone, flip phone, etc.)?
- Have you ever seen a telegraph key or Morse code being used? If so where? *(e.g., in a movie, a museum display, etc.)*
- Do you know the International Morse Code distress signal? *(SOS or … - - - …)*

ENGAGING WITH THE ARTIFACT

Historical Significance

- How did people get personal messages to other people quickly before the invention of the telegraph? *(The Pony Express, couriers, semaphore, smoke signals, etc.)*
- Where were most of the early telegraph offices located? Why do you think this was? *(post offices, railway stations, newspaper office, etc.)*

Relating Science and Technology to Society and the Environment

- Create a timeline of personal communication devices from the telegraph to the Smartphone.
- How did the telegraph transform business, trade and the news? *(Regional offices run by central head offices, following of the stock market in real time, knowledge of shipment arrival times, news could get to people in minutes rather than hours or days, etc.)*
- The Canadian Science and Technology museum has several examples of telegraph keys. Go to the Collections and Research section of the Ingenium website and search **Telegraph Key**. Choose two different telegraph keys and find their common parts (knob, lever, circuit closer).

Exploring Concepts

- On the telegraph key, find the lever and identify the parts of the lever (load, effort and fulcrum).
- Draw a circuit diagram for the telegraph system you build which shows the battery, connecting wires, open/closed switches as well as the light bulb or buzzer.
- How is a telegraph key similar to, and different from, a computer mouse?

Nature of Technology

- What are some of the advantages and disadvantages of telegraph systems compared to other communication technologies of the time (e.g., newspapers, sending letters by mail, etc.) in terms of cost, infrastructure, human resources, etc.?
- Which communication devices led to the end of the telegraph? *(the telephone)*

HACK IT

- This artifact is missing its original spring (see image at right). Design and 3D print a spring for the telegraph key or source a metal spring that can take the place of the elastic band in the 3D printed model.
- Using the STL file, modify the telegraph key so that it is more ergonomic (is more comfortable for your hand) but still workable. Have classmates try it and rate your design.

Fig. 6.
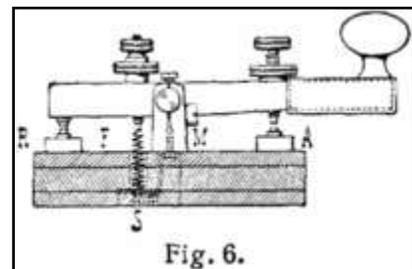
https://en.wikipedia.org/wiki/Elecrical_telegraph#/media/File:L-Telegraph1.png
(Public domain on Wikipedia)

ADDITIONAL REFERENCES

- Activity 1: Build your own telegraph key
- Activity 2: What is Morse code?