

CONNECTION TO SOCIAL STUDIES**● Morse Code and Computers**

In 1837, Samuel Morse invented the telegraph and the code to be used with it. Morse had to come up with a new, special code because his telegraph could only signal with a single electric current. He decided to create a code based on the length of time the current was on. A short period of time signaled a “dot,” and a longer period of time signaled a “dash.”

In Morse code, specific letters and numbers are assigned to specific series of dots and dashes. For example, the letter “A” is represented by a dot followed by a dash. Because of its ease of use, Morse code quickly became widespread.

Unfortunately, problems soon developed. Because each letter must be spelled out in a series of dots and dashes, Morse code can only send messages at a rate of about 10 words per minute. As more people began using telegraphs, it became clear that this speed was much too slow.

A Faster Telegraph

Soon a new kind of telegraph, called a paper tape transmitter, came into use. Instead of using dots and dashes, the paper tape transmitter punched two rows of holes into paper tape. One row of holes stood for dashes, while the other stood for dots. In this way, messages could be conveyed much more quickly, at the rate of about 100 words per minute.

When engineers designed early computers, they used similar rolls of paper tape to store information. Each tape had a certain number of rows, usually between five and eight. Certain combinations of punched holes represented specific data, such as letters of the alphabet or numbers.

Your Turn to Think

1. What machine was Morse code invented for?
2. How are Morse code and computers related?
3. Explain why a paper tape transmitter is so much faster than the telegraph that was first invented by Morse. (**Hint:** Consider the length of time it took to transmit dashes, and consider that both rows on the paper tape could be punched at the same time.)