WW2 BOX:
Morse code task instructions

THE HISTORY OF THE ELECTRIC TELEGRAPH AND MORSE CODE

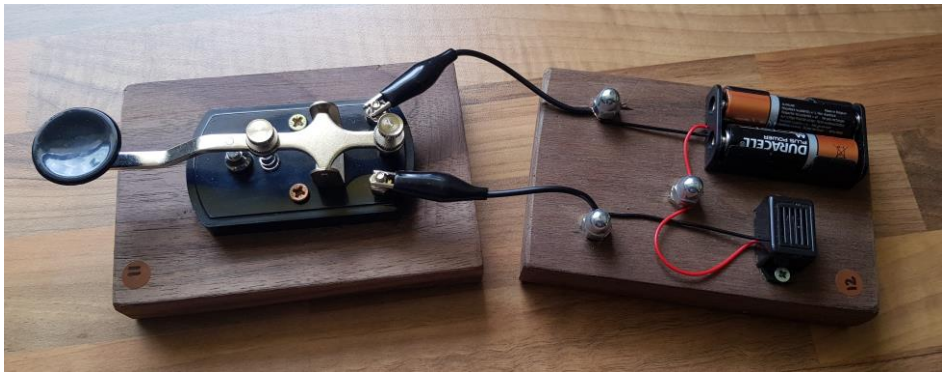
The invention of the electric telegraph system in the 1830s transformed communication all around the world, with messages transmitted across distant locations at great speed by means of electricity passed through a wire. However, after a lot of different ideas on how to send that message were found to be unsuccessful or time-consuming , Samuel Morse's invention of his 'Morse Code' language system in 1844 finally made the invention successful.

Samuel Morse's system involved a series of 'dots' and 'dashes' (also known as 'dits' and 'dahs') that sounded from a buzzer at both ends of the wire, meaning the person at the receiving end knew each letter that was being transmitted because of its unique combination. For example, a dot and a dash equals the letter 'a' while a dash and three dots equals a letter 'b'. By this means, therefore, it became very easy to transmit long messages over such distances very easily.

After a century of development, Morse Code was still in great use in the Second World War, where code breakers from the famous British code school at Bletchley Park spent long nights decoding secret German messages that were sent in Morse code across radio waves before being encoded again using a complicated machine called an 'enigma'. The breaking of this German code was so important that it is now believed that it shortened the war by at least two years and possibly more.

TEACHER INSTRUCTIONS FOR BASIC ACTIVITY (USED IN TURNS AT FRONT OF CLASS)

1. Assemble the Morse code machine by attaching the crocodile clips to the two posts on the 'key' and inserting your own 2 x AA batteries (sorry, but we are not allowed to send our own batteries due to courier restrictions) as per this image:



2. Print out and give each pair of pupils a copy of the 'Pupil Morse code card'.
3. Demonstrate the use of the machine via pressing the round black 'key' to make the buzz sound.
4. Ask pupils to take turns to come out to the front and choose a letter to transmit to their classmates.
5. The classmate who guesses the letter gets to come up and have the next turn.
6. Repeat until everyone in the class has had a turn.
7. If you would like to try a harder version more closely related to the WW2 code-breaking at Bletchley Park then please see the following page entitled **'TEACHER INSTRUCTIONS FOR HARDER ACTIVITY'.**

WW2 BOX:
Morse code task instructions

TEACHER INSTRUCTIONS FOR HARDER ACTIVITY

INTRODUCTION TO WW2 CODE-BREAKING HISTORY

In the Second World War, Morse Code messages were transmitted constantly by all the participating nations, mostly via radio waves. The problem with this was that any enemy country could intercept and understand the messages once they had translated them.

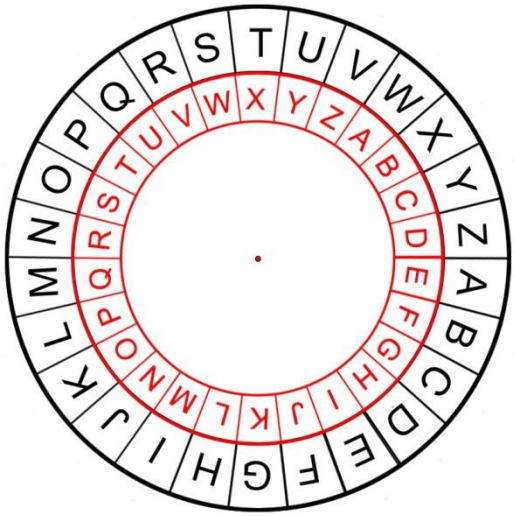
To prevent this from happening, all of the countries developed their own secret code system which changed the original Morse letters to different letters that required a 'code key' to understand them. This was called a 'substitution code'. In some cases, these letters were changed many times as with the German 'Enigma' machine, which had notched dials and electric plugs that could give it 15,000,000,000,000,000 possible combinations (that's 15 followed by 15 zeros!)

In 1941, after a lot of extremely hard work by scientists and mathematicians such as the famous Alan Turing at the secret code-breaking base Bletchley Park, Britain had cracked the German enigma code and from then on until the end of the war knew what the Germans were saying, saving many lives.

Underneath all this complication though the idea of changing letters was just the same and this is the basis of this harder Morse Code task which uses a simple code wheel substitution code.

INSTRUCTIONS

1. Assemble the machine as per the previous page and give each pair of pupils a copy of the **'Morse Code task code wheel'** (this includes a Morse Code alphabet as well).
2. Explain that the secret (i.e. coded) letter in the middle **red inner ring** is the one they must send and their friends must use their own code wheels to tell them the proper letter in the **black outer ring**, as in the copy below when, for example, the pupil will send the red letter **'C'** with the correct answer being **'Y'** or the red letter **'T'** with the correct answer **'P'.**



3. Repeat as per the easier task, with all pupils coming to the front and having a turn when they get the correct letter.
4. **WANT TO MAKE IT HARDER?** Ask the pupils to make whole words or phrases using the secret code letters for others to encode (do this as a paper task without using the machine as it would take too long as a whole class).