

Dashes and Dots: Morse Code and the Navy



Grades: 1-2

Materials Needed:

- Flashlights
- For Albacore:
 - Telephones
 - Howler
 - Morse Code Key

Objectives: Students will learn about different ways to communicate and will consider benefits and drawbacks to different methods of communication, as well as how communication has changed over time. They will have the chance to practice communicating via Morse code, thus allowing them to experiment with a new method of communication.

Connection to Curriculum Frameworks:

New Hampshire, Maine, and Massachusetts

- Science
 - 1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance

Setup: Students have enough space to all see the front of the room and the teacher is able to see each student when practicing signaling. Teacher has access to artifacts. For COVID-19 procedures, students wear masks and the teacher has disinfecting spray to wipe down artifacts after students have touched them.

Introduction and Diagnostic Assessment:

- Ask the students to list some of the ways they communicate with their family and friends
- Ask them if they know of any ways of communicating that aren't used so much any more
- Show them the wall phone and ask if they've ever seen a phone like that before. Can anyone guess how to use it?
 - Show them how to use it, and then pass it around so they can try pressing the buttons
- Next, show them the rotary phone and do the same thing.
- Tell them that on a submarine, sailors used phones to communicate between compartments
 - Ask if they know how people know that they are getting a phone call.
 - How do they think a phone would "ring" on a submarine?

- Show them the howler. Tell them it was used within a sub to reach different compartments. Sailors would turn the dial to the compartment they wanted to call and then crank the handle. Those in the receiving compartment would hear the “howl” and know to pick up the phone.
 - Pass the howler around
- To communicate with other vessels or land, the Albacore needed to cut through the static of the radio. To do so, it used Morse Code
 - Morse code is a system of communication where dots and dashes are used to communicate letters and words.
- Explain how Morse code works:
 - Dots and dashes are used to spell out words.
 - A certain pattern of dots or dashes corresponds to each letter.
 - When using a light, longer flashes are dashes and shorter flashes are dots.
- Show Morse Code Key
- Now you are going to have a chance to try out communicating via Morse code!

Procedure and Formative Assessment:

- Give each student a flashlight
- Have them practice signaling dots by doing short flashes
- Next, have them practice signaling dashes with longer flashes
- Practice going back and forth.
 - For instance, say, “show me a dot, now a dash”
 - Switch up the order to keep them on their toes!
- If there is still time, and it seems like they have gotten the hang of it, you can start giving them letters
 - For instance, say, “Show me 3 dots. You’ve just signaled ‘s’ for sub!”

Conclusion and Summative Assessment:

- Ask the students what they thought about messaging in Morse code.
- What was difficult or frustrating about it?
- How is it different from how we communicate nowadays?
- What was their favorite kind of communication? The phones, the howler, or Morse code? Why?

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