

Cybersecurity CyberSnack: Flag Messages

Time: 10-15 min

What You'll Need: **Flag Handout. Flags are optional**



NICE FOCUS: Cybersecurity Career Awareness

Learning Objectives: I can explain the connection between cybersecurity careers and the cybersecurity techniques, strategies, and the skills needed for these careers such as: logical thinking, need for people who think “out of the box,” problem solving, and recognizing patterns.

Essential Question: What do you think are the essential skills needed in a cybersecurity career?

Key Words: cybersecurity, logical thinking, thinking outside the box, problem solving, pattern recognizing, Semaphore, cryptology, encryption,

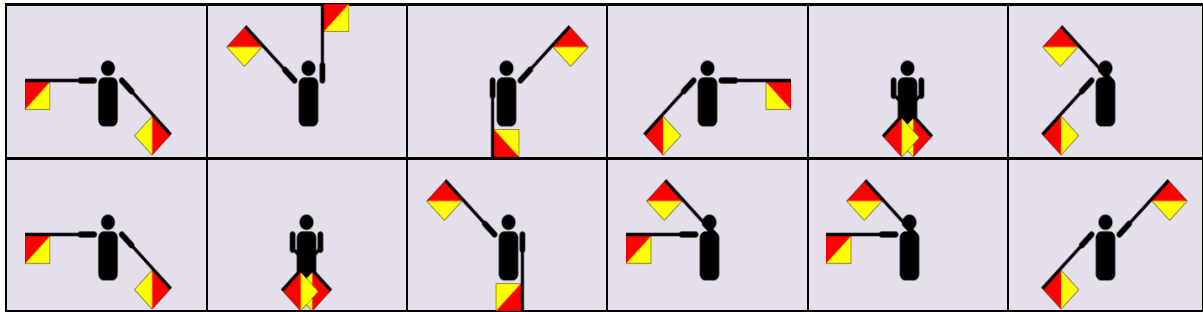
Activity Steps

Teacher Action	Student Action
<ol style="list-style-type: none"> Share: Show the Flag Poster. Optional: using flags, have a student act out the signals Ask: What do you think is the symbol saying? Answer: “STEM is cool” Reflection Question: <i>What do you think is the connection between the activity you just completed and a cybersecurity career?</i> Have students share responses in teacher chosen method <p>Possible ANSWER: From <u>Encryption for Kids! (purdue.edu)</u> A code is a system of symbols, letters, words, or signals that are used instead of ordinary words and numbers to send messages or store information. A code replaces words, phrases, or sentences with groups of letters or numbers. This process is called encryption or enciphering. The science that studies such communication is called cryptology. The Semaphore encryption uses 2 flags (or other visual element, usually red and yellow) and a person, if possible standing (so as not to hinder arm movements). Each letter as well as the character space is represented by a flag, the digits (1234567890) are represented by the letters from A to K. Semaphore is a type of communication by which a person signals with two hand flags, moving his arms through various positions to represent letters, numerals and special signs. Semaphore is also used by the Scouts, Navy and Coast Guard to communicate over long distances (as long as you can see the other person). Although this method has been around for a long time, a major benefit to the Beach Patrol is that in an emergency or when a lifeguard is in the water, they do not need any electronics or technology to immediately update and communicate with each other. Cryptology has and continues to be used by governments, the military, businesses, and organizations to protect their information. Today, encryption is used to protect storage of data and transactions between computers. <u>Semaphore – Town of Ocean City, Maryland (oceancitymd.gov)</u></p>	<p>Think of possible answers and ask for clarification as needed. Students share responses in teacher chosen method</p>

For online resource see: [Flag Semaphore - Online Decoder, Encoder, Translator \(dcode.fr\)](#) and Ocean City, MD Beach Patrol Interactive [Beach Semaphore](#)

Fun Fact: The popular peace sign is really the combination of two semaphore letters N and D and stands for Nuclear Disarmament.

Can you decode this message?



SEMAPHORE FLAG SIGNALING SYSTEM

SEMAPHORE FLAG SIGNALING SYSTEM HANDOUT

The system for conveying information at a distance by means of visual signals with hand-held flags, or occasionally bare or gloved hands. Information is encoded by the position of the flags; it is read when the flag is in a fixed position. Semaphores were adopted and widely used in the maritime world in the 19th century.

 Rest/Space	 Numerals (#)	 Error/Attention	 A or 1	 B or 2	 C or 3
 D or 4	 E or 5 (Error if signaled 8 times)	 F or 6	 G or 7	 H or 8	 I or 9
 J - Letters/ Position Sign	 K or 0	 L	 M	 N	 O
 P	 Q	 R	 S	 T	 U
 V	 W	 X	 Y	 Z	 Cancel - Disregard previous signal

Ocean City Maryland and Bethany Beach Delaware Lifeguards are perhaps the last remaining lifeguard organizations in the U.S. to use this system. In Ocean City, it has been a tradition with the rescue unit since the 1930s, and complete messages can be relayed up and down 10 1/2 miles of beach.

