

CODES AND CIPHERS

From using a secret word or handshake with your friends, to shorting words (such as L.O.L.) in text messages, we use **codes** on a daily basis. What is a code? A code is a system of shortening and substituting words, letters, and other symbols for the purpose of secrecy.

For sailors in the U.S Navy, sending coded messages and being able to understand the messages of enemies can be the key to winning or losing a battle. For example, during World War II, the U.S. Navy fought Japan in the Pacific Ocean and used codebreakers to help them decode messages sent from the Japanese Navy.

The U.S. codebreakers used **ciphers**, or a system of looking closely at codes for any patterns, to help them make educated guesses on when the Japanese Navy might attack.

In June 1942, U.S. codebreakers at Pearl Harbor in Hawaii monitored Japanese communications and determined the location for an upcoming Japanese attack on the U.S.-held island of Midway. The codebreakers *not only* determined the location of the attack, but also the date, time, and planned location of the Japanese fleet. The work of the codebreakers allowed the U.S. Navy to plan for the attack and prepare their own counterattack against the Japanese Navy. The U.S. codebreakers were crucial in the Navy's ultimate success at the Battle of Midway.

INSTRUCTIONS

1. Read the brief history on the role of codes and ciphers in the Navy.
2. Complete the "Word Decoder" activity below.
3. Cut out the Caesar Cipher circles to create your own cipher.
4. Color the "Artifact Spotlight" on the last page to see a real cipher machine!
5. Tag the National Museum of the American Sailor with your completed projects on social media:



National Museum of the American Sailor



@ntlmuseumamericansailor

WORD DECODER

Use the history section to help you decode the following words

rphcie _____

deco _____

ssmessage _____

wiaiHa _____



atbtle _____

This activity kit has been provided by the National Museum of the American Sailor

2531 Sheridan Road, Building 42
Great Lakes, Illinois 60088

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(847) 688-3154





CODES AND CIPHERS



CREATING CODES

Supplies:

-Scissors -Paper fastener

1. Gather your supplies: a pair of scissors and a paper fastener
 2. Cut out the Caesar Cipher circles on the attached page.
 3. Place the smaller Caesar Cipher circle on top of the larger circle and join them with a paper fastener.
- Write out your secret message in the provided space below. For example, your secret message could be: "The Navy is cool!"

Your Secret Message:

4. Choose a number from 1 to 25. This is your key. Turn the smaller circle that number of spaces.
5. Encode your message by replacing the letters from the large circle (the plain text) with the letters from the small circle (the ciphered text). Write your coded message below.

Your Coded Message:



Give your encoded message to a friend or family member and see if they can break it!

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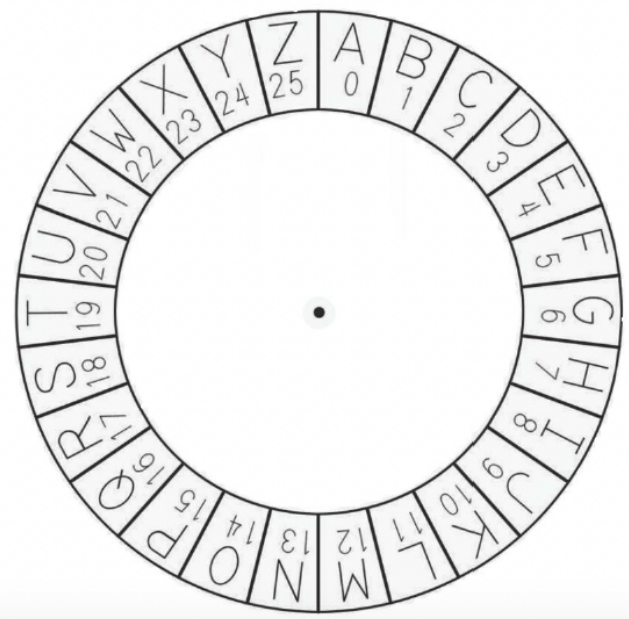
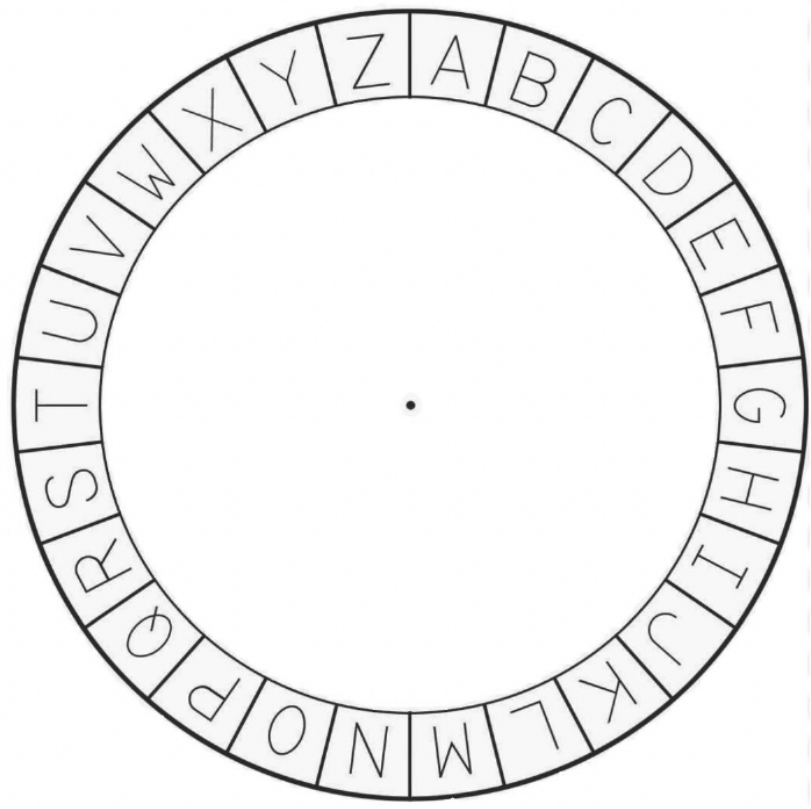




CODES AND CIPHERS



CAESAR CIPHER CIRCLES



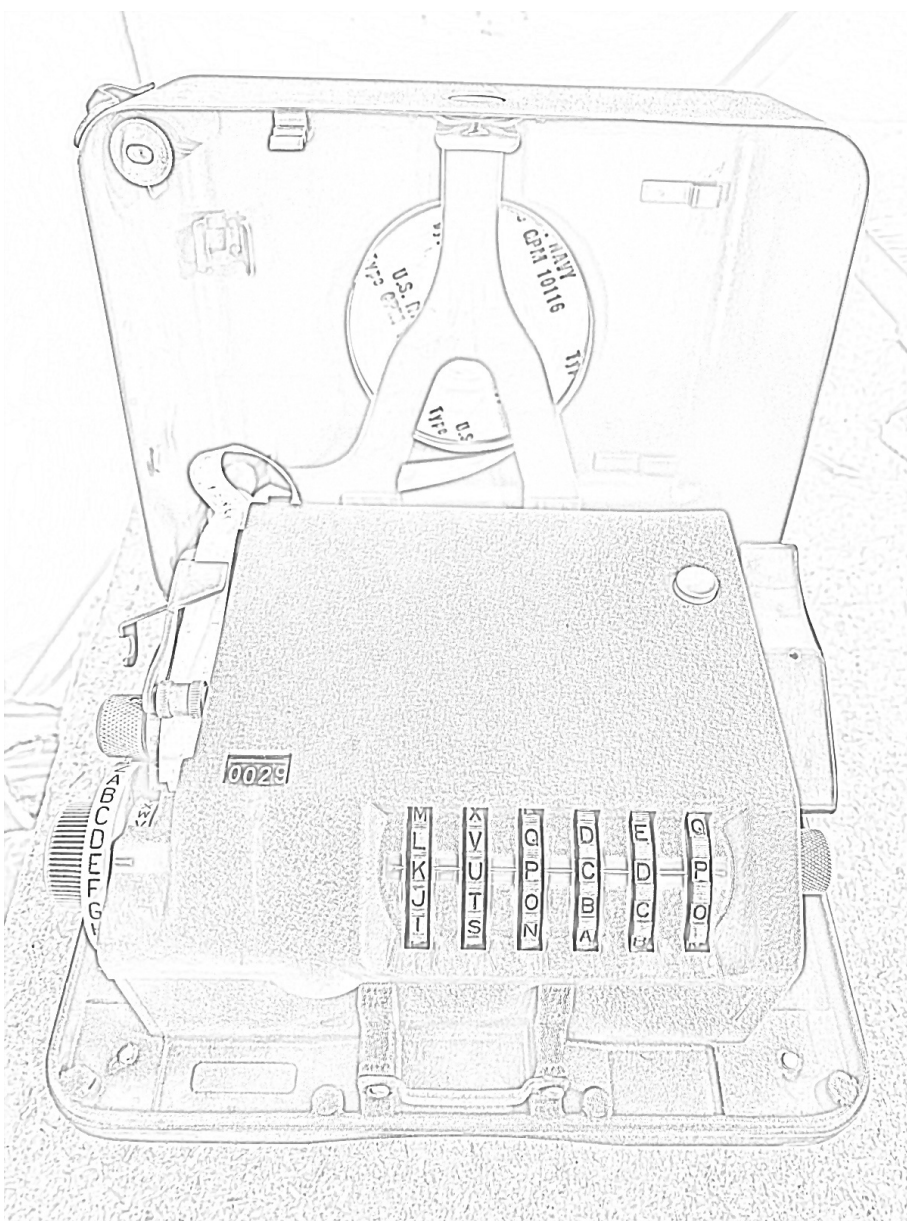
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ARTIFACT SPOTLIGHT



Housed in the Permanent Collection at the National Museum of the American Sailor, this is a **M-209 cipher machine**.

Created at the beginning of World War II, messages were entered letter by letter in the six cipher wheels of the M-209. The wheels, pins and lugs of the machine were used to set the message's key. The technician then turned the knob on the right and the coded message was printed out on a small strip of paper.

Use your imagination to color in the cipher machine. What color do you think it would be? Would it have any texture to it? Make sure you tag NMAS with your finished cipher machine!

ANSWER KEY:

rphcie cipher
deco code
ssmessage messages

wiaiHa Hawaii
atbtle battle

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