




Elizebeth Smith Friedman

cryptanalyst



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Elizebeth Smith Friedman was one of the first American cryptanalysts. She was influential in breaking coded messages sent by criminals and smugglers during Prohibition, and she worked as a code breaker during WWII.


Fun facts:

- She decoded letters sent by a doll maker during WWII, revealing the doll maker to be a spy!
- She was frequently asked to testify in court cases as an expert in coded messages!
- After a long career breaking codes for the government, she went back to the work that first got her into cryptography-- looking for hidden messages in Shakespeare's works!



Cryptography

Cryptography is used to send secret messages so that only the person they're being sent to can read them. The message writer chooses a method to **encrypt** the message, which changes it from something that anyone could read into something that looks like gibberish. Then, when the recipient gets the message, they use the same method to **decrypt** the message back into something readable.



Cryptanalysts try to break codes by intercepting messages that weren't intended for them and then attempting to decrypt those messages by figuring out the method that was used to create the code.



Lesson idea:

1. Introduce Elizebeth Smith Friedman and cryptography with the information above
2. Watch [this news story](#) (4:15) and hear about Elizebeth's life and accomplishments from her grandson!
3. Explore cryptography: Learn about the Caesar Cipher [in this video](#) (2:35) and have students practice encoding and decoding messages. Then have them try to decode a message that was encrypted using a slightly more complex Random Substitution Cipher in [Code.org's widget](#). (Start with Encrypted Sample 2; it has a lot of context clues to help students make educated guesses--or **cribs** in cryptography!)

Explore Further

Learn more about Elizebeth Smith Friedman and cryptography with these resources:

Videos

- [The Codebreaker](#) (movie)
- [About Elizebeth Friedman's Life](#) (8:08)
- [Cryptography Videos Playlist](#) (our favorite videos on cryptography)
- (in Lesson Idea) [21Country: Recognized at last, efforts of cryptanalyst pioneer Elizebeth Smith Friedman celebrated](#) (4:15)

Activities

- Code.org's [Simple Encryption](#)
- Khan Academy's [Unit on Cryptography](#).
- [Caesar Cipher Wheel printout](#)

Reading

- [Code Breaker, Spy Hunter](#) by Laurie Wallmark & Brooke Smart (includes activity sheets and a teacher guide!)
- [The Woman Who Smashed Codes](#) by Jason Fagone
- Honoring America's first female cryptanalyst (article)



Reading

- The Code Book by Simon Singh
- Cipher Girls: The Women Who Cracked Hitler's Codes (article)
- Cracking Codes with Python by Al Sweigart
- Tiny Book of Simple Cryptography by Alfred Thompson (free!)