

Secret Codes Activity

Author: Sheena

Grades: 6-8

Goal: *Learn about the role computers have played to help save the world.*

Duration of lesson: 40 minutes to 1 hour.

Objectives:

- Learn about Alan Turing.
- Learn about how computers were used in World War II, why their invention was so critical.
- Experiment with creating and breaking simple codes with/without computers

Lesson

Introduce

Turing has done many things for computer science (often called the father of computer science) but today we will focus on one very important one that helped with the invention of computers. Tell the story of Turing breaking the German coded messages during World War II (use trailer of upcoming new movie 'Imitation Game'?).

<https://www.youtube.com/watch?v=S5CjKEFb-sM>

or use Computer History museum video

<http://www.computerhistory.org/revolution/birth-of-the-computer/4/82/2218>

Activity

Choose either

- Remixing and extending a simple Scratch project to create your own secret code.

<http://scratch.mit.edu/projects/30127212>

- Unplugged activity (put link to detailed lesson plan here)

Make your own cipher wheel - some ideas

<http://www.topspysecrets.com/secret-codes-for-kids.html>

<http://www.math.uic.edu/CryptoClubProject/CCpacket.pdf>

<http://cryptoclub.org>

Create a sentence using a code with your cipher wheel. See if they can break the code?

What hints will help your friend break the code?

Closure : Questions/Reflections

- How difficult is it to break the code - If the code allowed any characters, not A-Z
- How difficult is it to break the code - If you know at least one word in the sentence?
- How difficult is it to write a code breaking machine - so it could break any code ?