

Grace Hopper Debugging Activity

Grades: 3-8

Goal: *Help students learn about Grace Hopper and why this week is CS EdWeek.*

Duration of lesson: 40 minutes to 1 hour.

Objectives:

- Learn about Grace Hopper and her role in computer history
What is a compiler, the story of the first 'bug'
- Why was she employed by the Navy? How do you think computers are used in the Navy?
- Understand the importance and excitement today about CS EdWeek - why do we need more people to understand computer code?
- Learn to debug a challenging Scratch project with your team

Lesson

Introduce:

Google presentation for this introduction

<https://docs.google.com/presentation/d/1qgl9srKk8Rtpf6sHI5OahQnze56PxbjlsjqY3-7Db0/edit?usp=sharing>)

Details:

Show Google Doodle on Grace Hopper

<http://www.wired.com/2013/12/googles-doodle-honors-grace-hopper-and-entomology/>

Who is she? Why is this week - CS Ed Week?

Grace Hopper's role in computer history - her birthday is Dec 9.

What is she famous for ?

- Inventing a compiler for COBOL: writing code in English and it converts to machine code.
- First person to use the word bug in computer programming.
- She was also a great teacher. She joined the Navy during World War II and was one of the first programmers of the [Harvard Mark I](#) computer.

Optional photos and videos to use in class/by teacher/for assigned homework/flipped classroom setting https://www.youtube.com/watch?v=zWNADC_ZYIM

<http://www.history.navy.mil/photos/images/h96000/h96566k.jpg>

What is happening today during CS EdWeek?

Show Code.org video and/or President Obama's video from last year

<https://www.youtube.com/watch?v=6XvmhE1J9PY>

Activity:

Competitive 'How many bugs did you fix' team activity. Fix the bugs in these Scratch projects.

Select debugging challenges from the list below and ask students to work in teams to solve as many as possible.

1. Debug Studio with projects contributed by different teachers.
<http://scratch.mit.edu/studios/598110/>
2. ScratchEd's Debug studios from Scratch Curriculum Guide /CCOW
<http://scratch.mit.edu/studios/237914/>

Closure:

Closing Reflection /Discussion questions AND/OR Student share

- Why is it important to learn to code?
- Will this CS Ed Week/ Hour of Code movement help?
- Have students share what they fixed and how

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