

Hour of Code HS Tutorials notes

Below are HS listings from Hour Of Code tutorials at <https://code.org/educate/allhourofcode>. Bulleted parts are from the linked website and/or observations.

STEM Projects

Ages 5-18. Programming, Science (Ecology), Science (Space), Web-based. Code and animate a Solar System simulation, an interactive ecological pyramid, a working analog clock, and more.

- uses Tynker, at <https://www.tynker.com/hour-of-code/tynker-stem-teacher-guide.pdf>

CodeHS Pixel Art

Ages 14-18. Art, Math (Coordinates), Unplugged. Students learn about coordinates, what pixels are, and how to create drawings by setting pixels to be different colors.

- pdf pixel art resources with blanks, by CodeHS, <https://codehs.com>

10 Minutes of Code using a T.I. Calculator

Ages 13-18. Math (Algebra), Math (Functions), Programming, Unplugged, TI-84™ Plus graphing calculator required.

- it is <https://education.ti.com/en/us/solutions/ti-codes>

Scratch Animate Your Name

Ages 8 to 16. Programming, Creativity, Web-based. Students will animate the letters of their name, initials, or favorite word using Scratch!

- it is <https://scratch.mit.edu/scratchr2/static/pdfs/help/AnimateYourNameGuide.pdf>

Scratch Hide and Seek Game

Ages 8 to 16. Programming, Creativity, Web-based. Students will gain experience with coding as they make a hide-and-seek game.

- it is <https://scratch.mit.edu/scratchr2/static/pdfs/help/Hide-and-Seek-Guide.pdf>

Scratch Dance, Dance, Dance

Ages 8 to 16. Programming, Creativity, Web-based. Participants will create and code an animated dance scene.

- it is <https://scratch.mit.edu/scratchr2/static/pdfs/help/DanceGuide.pdf>

Looking at Data with Splunk

Ages 14-18. Math (data analysis), Web-based. Students will analyze the data from a theoretical game to find levels which are too easy or difficult.

- it is <https://www.dropbox.com/s/46ed5ilhvsam8ci/SplunkLessonPlan.pdf?dl=1>. Requires connection to <https://splunk.codeday.org>: blocked. Check out <https://codeday.org>.

Input and Output, Math Activity

Ages 12-16. Math (Algebra), Math (Functions), Unplugged. Connect JavaScript functions to both math and real world problems.

- It is <https://app.vidcode.io/doc/unplugged-activity-math.pdf>. Looks a bit sketchy.

Vizwik Voter App

Ages 13-18. Programming, App building. Learn how to build your own mobile app (iOS and Android) to share with friends to vote on a question that is important to you.

- It is www.vizwik.com/hoc. Requires sign in.

Hour of Code HS Tutorials notes

Climate Science

Ages 12-16. Science (Climate), Science (Environment), Unplugged. Students draw a picture, and take turns giving the class steps to recreate their drawing.

- It is <https://app.vidcode.io/hourofcode/science-teacher-guide>.

Mozilla Homework Excuse Generator

Ages 13-18. Programming, Language Arts, Web-based. Use Mozilla's code editor, Thimble, to edit strings inside JavaScript arrays and customize the homework excuse generators.

- It is <https://d157rqmrxj6ey.cloudfront.net/mozillalearning/11701/>. Thimble at <https://thimble.mozilla.org/en-US>.

Fact or Fiction?

Ages 16-18. Programming, Build an App, Web-based. Students create an app to survey whether their classmates think a statement is find a fact or fiction.

- It is www.vizwik.com/hoc

Oral History Project

Ages 14-18. Programming, Storytelling, Unplugged CEOHP has worked with a variety of educators to develop ideas for classroom activities, homework, and exam problems based on the interview materials.

- It is www.cs.southwestern.edu/OHProject/materials-overview.html (Computing Educators Oral History Project)

Best Technology Activity

Ages 14-18. History, Storytelling, Unplugged Wired.com ran a series of articles in 2013 on each decade of the past 100 years and the significant inventions of those decades. Most interesting to students are the past 2030 years, with the explosion of technology and the gadgets that ensued.

- It is <https://csedweek.org/csteacher/besttechnology.pdf>

Arduino Activity

Ages 12-15. Programming, Arduino Ever wonder how toys make noises and blink lights when you push buttons? Microcontrollers and circuits are used in all sorts of everyday objects. From remote controlled cars to robots and drones.

- It is <https://csedweek.org/csteacher/arduino.pdf>

Secret Codes Activity

Ages 12-15. Ciphers, Math (Cryptography), Scratch, Web-based. 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.

- it is <https://csedweek.org/csteacher/secretcodes.pdf>. Includes remixing and extending a simple Scratch project to create your own secret code at <http://scratch.mit.edu/projects/30127212>

Hour of Code HS Tutorials notes

Computer History Activity

Ages 12-15. History, Storytelling, Scratch, Google Docs, Unplugged Your class will be creating a 'history of computers' web page/Scratch project/video that we can share with the world. To make this web page, you and your partner will do research and write about one important event or person in computer history

- It is <https://csedweek.org/csteacher/computerhistory.pdf>. Has link to Computer History Museum (www.computerhistory.org): interesting.

Grace Hopper Debugging Activity

Ages 12-18. History, Language Arts, Storytelling, Unplugged Students will research Grace Hopper and learn the story of the first "bug".

- The link is <https://csedweek.org/csteacher/gracehopperdebugging.pdf>. Follow several links about Grace Hopper and computer history.

Globaloria MakeQuest

Ages 10-18. Programming, Game Design, English, Math, Creativity, Web-based. Learn to edit and write JavaScript code to defeat the 'Evil 404,' as you explore computer science concepts like variables and functions. Lesson Plan includes subject-matter extension activities for English, Mathematics, Science, History and Arts classes.

- The link is globaloria.com/courses-services/teacher-guides/. Game using code is at <http://code.globaloria.com>. Main <http://globaloria.com>.

Codesters Dream Sequence

Ages 11-16. Programming, Story Telling, Language Arts, Web-Based. Students write a story using transition words while learning computer science in this Common Core aligned English language Arts project.

- It is <https://www.codesters.com/hoc-classroom/>. See also the next item.

Codesters Transformation Puzzles

Ages 11-16. Programming, Math (Coordinates, Geometry), Web-Based. Students explore, identify, and perform transformations on the coordinate plane in this Common Core aligned Math project.

- <https://www.codesters.com/hoc-classroom/> TechJam is next step <https://www.codesters.com/TechJam/>. It uses Python. "Codesters offers a full 40-lesson Intro to Python curriculum as well as several standards-aligned Math modules. Visit our [marketplace](#) to see the modules we have available."