

Code Your Way into STEM

—

Warm-Up

***If you do not have a device, come grab an iPad to log onto Nearpod!**

- 1) Go to nearpod.com
- 2) Enter code: IGTUX into the top bar where it asks for the class code.
- 3) Enter your name or nickname.
- 4) Answer the dicussion questions.

Objectives

- 1) Develop Ideas and new ways to use coding in the classroom.
- 2) Understand how to apply coding skills to STEM projects.
- 3) Leave with some new hands-on ideas for your classroom!

Coding Basics

- Start with Code.org
 - Benefits:
 - Easy to follow lessons
 - Unplugged lessons - great for group collaboration
 - Charts for Coding, Hour of Code, bring it home!
 - Set it Up:
 - Choose a time that works for you!
 - Every Monday or Friday
 - Twice a Month
 - Once a Month

Coding Basics

- How it Works
 - Log On
 - Student Log-In's (Print & Go Cards)
 - Check Progress
- Unplugged Lesson Example: Plant A Seed
 - Relate this to math!

Unplugged Lessons: Plant a Seed

U

Name: _____ Date: _____




CO
DE

Unplugged

Real-Life Algorithms
Plant a Seed Worksheet

You can use algorithms to help describe things that people do every day. In this activity, we will create an algorithm to help each other plant a seed.

Cut out the steps of planting a seed below, then work together to glue the six correct steps, in order, onto a separate piece of paper. Trade your finished algorithm with another person or group and let them use it to plant their seed!

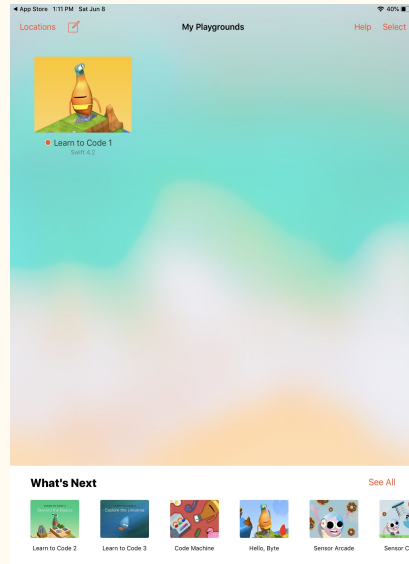
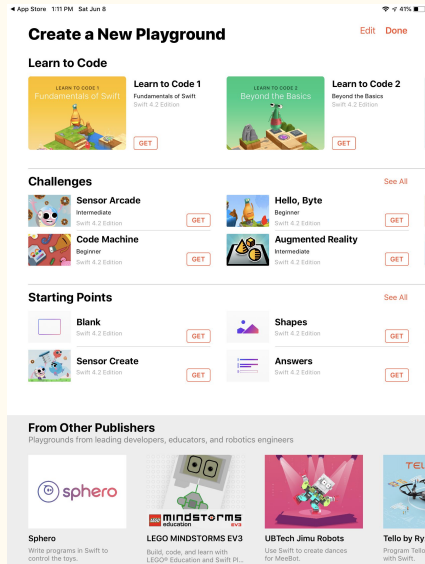
 PUT POT IN SUNLIGHT	 PUT SEED IN HOLE	 HUG AN ELEPHANT
 PUT GLUE ON SEED	 FILL POT WITH SOIL	 POKE HOLE IN SOIL
 WATER POT	 COVER SEED WITH SOIL	 POUR SODA POP IN POT

Revision 160710.1a

- What connections do you see to your curriculum?
- What other lesson ideas do you see that you can implement?

Other Coding Venues

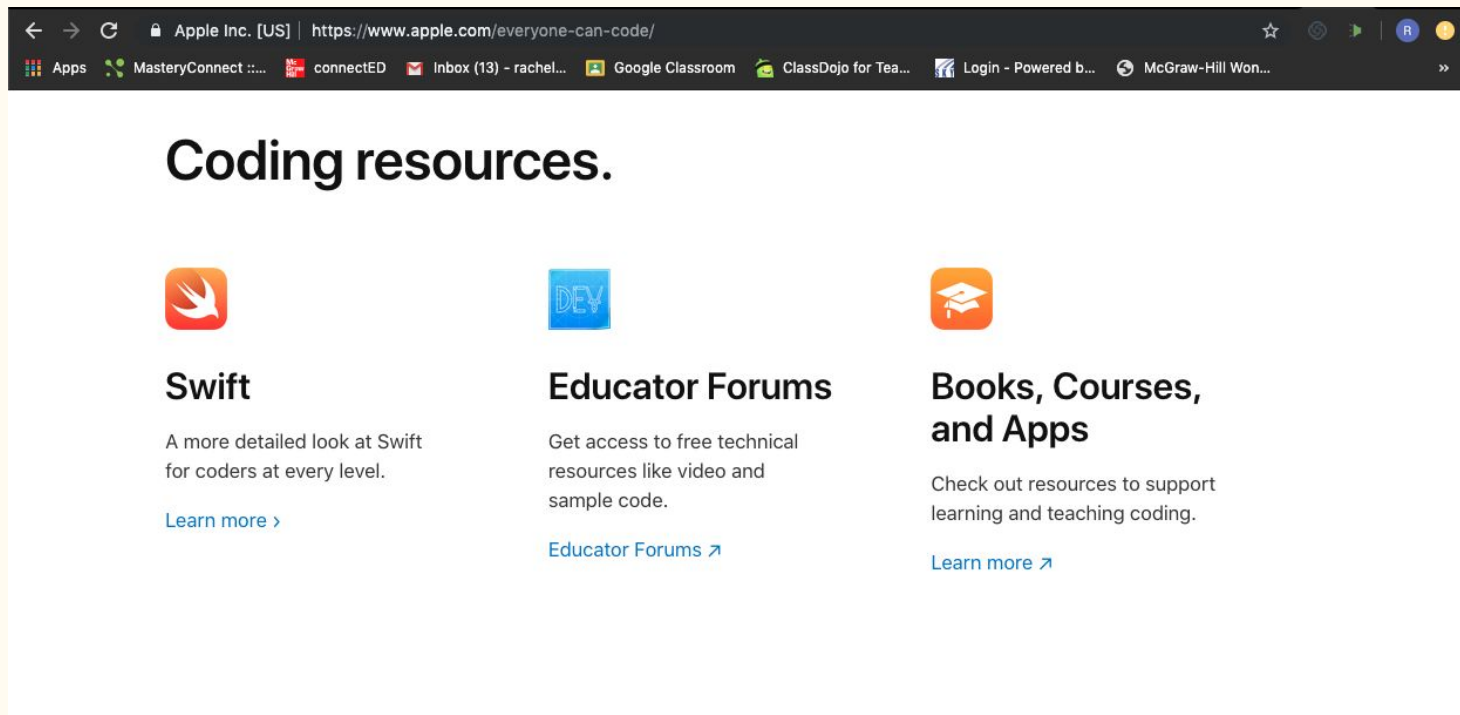
- Swift Playground (iPads)






- Scratch Coding
- Found at scratch.mit.edu
 - Works with Makey-Makey
 - Not Necessary to Create an Account!
 - Lots of Projects

Coding Resources

“Everyone Can Code” through Apple



The screenshot shows a web browser window with the address bar displaying 'Apple Inc. [US] | https://www.apple.com/everyone-can-code/'. The browser's tab bar shows several open tabs: 'Apps', 'MasteryConnect :...', 'connectED', 'Inbox (13) - rachel...', 'Google Classroom', 'ClassDojo for Tea...', 'Login - Powered b...', and 'McGraw-Hill Won...'. The main content area of the website has the heading 'Coding resources.' and features three resource cards. Each card includes an icon, a title, a brief description, and a 'Learn more' link with an external icon.

Resource	Description	Learn more
	Swift A more detailed look at Swift for coders at every level.	Learn more >
	Educator Forums Get access to free technical resources like video and sample code.	Educator Forums >
	Books, Courses, and Apps Check out resources to support learning and teaching coding.	Learn more >

Now that we can code, Project Time!

Sphero Robots:

- Coding Challenges
- Using sphero.edu App
- Obstacle Course
- Kids can create their own courses!

Grade Level Projects Ideas – Aligned with SEED

3rd Grade

Magnetism

Materials:

Ozobots

Magnets

Tape

String

Paperclips

Coins

4th Grade

Electricity

Materials:

SnapCircuit Boards

OR

Makey-Makey Kits

5th Grade

Erosion Prevention

Materials:

Tinkering Lab Kit

OR

Design and build from
available resources.