

MATTER Innovation Hub Curriculum

The primary curriculum is centered on learning coding with the goals of promoting creativity, problem solving, and critical thinking. Additional curriculum focuses on early English language, mathematics, basic computer creative, and productivity tools. Professional development targets use of Apple's creative and productivity suites. Additional professional development focuses on the applied innovation of technology across of an organization's existing curriculum.

Three free Apple programs with curriculum and certifications are the primary anchors for the MATTER Innovation HUB programming, supplemented with complementary material.

Everyone Can Code Everyone Can Create Apple Teacher Program

- **Apple's Swift Playgrounds: Learn to Code series**
<https://www.apple.com/swift/playgrounds/>

Apple created a comprehensive "*Everyone Can Code*" curriculum to help teach coding to students from kindergarten to college. With teacher guides and lessons, student can be introduced the basics on iPad, then advance to building real apps on Mac. So, whether the students are first-time coders or aspiring app developers, they will have all the tools need to learn coding.

Each course is accompanied by an Apple iBook:

- Learn to Code 1 on iPad
- Learn to Code 2 on iPad
- Learn to Code 3 on iPad
- Learn to Code 4 on Mac
- Learn to Code 5 on Mac

- Apple's "*Everyone Can Create*"

Featuring content, activities, and training materials on iPad and Mac for:

- iMovie – movie creation and editing
- GarageBand – music creation and editing
- Clips – movie creation
- Notes – writing and drawing with Apple Pencil
- Pages – desktop publishing
- Keynote – presentation creation

- **Parrot Drone** <https://edu.parrot.com>
Swift Playgrounds Guide Lessons

Fly, code, and learn with Parrot Mini-drones and Swift Playgrounds! Students will learn how to program and pilot a Parrot drone using the power of Swift code. Students will code their drone to takeoff, land, move in all directions, make aerobatic figures, and even control accessories. Students start with the basic commands, solve some puzzle and challenges, master advanced commands and learn how to program accessories.

- **Sphero SPRK+** <https://www.sphero.com/sprk-plus>
Swift Playgrounds Arcade - Guided lessons

In this arcade-style playground, students can recreate classic games with a Sphero SPRK+ robot while learning the basics of game design. Students build their very own robotic renditions of some famous games like Pong, Bop It, and Pac-Man. Each game uses Sphero in a different way such as rolling on the floor, detecting gestures, or using Sphero as a joystick.

Sphero SPRK+ Activities

Sphero Golf — drive, draw, and code robotic ball on course designed by students

Sphero Paint — drive, draw, and code robotic ball to create art work with water colors

Sphero Boat — drive, draw, and code robotic ball in student created boats

- **Duolingo** <https://www.duolingo.com>

For learning English language in game-based activities.

- **eSpark Learning** (personalized path with iOS app content targeted on standards)

<https://www.esparklearning.com/espark/>

Math preK to year 6. - iOS apps matched to students' level and progress at their pace

Early English language - iOS apps matched to students' readiness level and progress at their

pace

Apps are automatically deployed to students iPads and removed once they have progressed to other activities.

- **OSMO Learning (physical manipulative paired with digital activities)**

<https://www.playosmo.com/en/>

Osmo is an award-winning game system that will change the way children interact with the iPad by opening them up to hands-on play integrated with digital environments.

Number

Add, count and multiply the tiles to match the numbers on the bubbles. Popping enough bubbles will free the fish and unleash a storm of lightning and thunder! Big or small, even or odd, will you become the Numbers Master?

Words

Guess and spell the on-screen image. Team up or compete in-person with friends or family to see who will get their letter in first! Download free content like trivia, geography or upload your own like family names. The possibilities are endless!

Code Awbie

Coding Awbie teaches logic skills and problem solving, and it helps students succeed in an increasingly digital world. Coding Awbie is the easiest way to introduce coding to young students

Tangrams

Arrange wooden puzzle pieces to match on-screen shapes. Animals, objects, humans and more. Play with a friend or challenge yourself to increasingly more difficult levels as your handiwork lights up with each victory.

Newton

Newton works with any object or drawing — Mom's keys, hand-drawn basket, even toys you already own. Simply place the object/drawing in front of the screen and manipulate it to guide the falling balls into the target zones.

Masterpiece

Unleash your inner artist! Pick an image from the camera, web or curated gallery and Masterpiece will transform it into easy-to-follow lines, helping you create beautiful drawings.

Professional Development

- Apple Teacher Program - training and certificates in using Apple suite of applications with students
<https://www.apple.com/education/apple-teacher/> Each section within Apple Teacher has is paired with an Apple iBook.
- LoTi/H.E.A.T. - educational technology implementation evaluation
<https://www.loticonnection.com/heat-framework> This will be introduced during the onsite professional development.