



## Robot Investigations with Finch Robot

**GRADE LEVELS:**

4 - 12

**EDUCATIONAL SETTING:**

in school and/or out of school

**Award Provides:**

- One 3-hour online workshop, flexible scheduling
- Class set of 15 Finch Robots, plus charging cables, markers, carrying case and micro:bits
- Project write-ups for Finch activities
- Access to online asynchronous teacher materials
- Ongoing tech support
- 1 optional session of virtual co-teaching/field trip for students during school year

**Additional Cost(s) to Awardee In 2022-2023:**

- No additional cost necessary

**Approximate Sustainability Cost After Award Period:**

- Possibly replacement markers
- Curriculum and online asynchronous teacher materials are free

**2022-2023 STEM Scale-Up Program Summary:**

Computer science is quickly becoming a basic skill in today's world. But not every student is excited about "computer science." How about robot jousting? Or creating a robot dance party? These are just a few of the creative, non-competitive activities you can do with a Finch robot! Why a robot instead of just coding? Physical computing, an extension of CS, involves using devices to bring computer science off the screen and into the real world. Mounting evidence suggests that physical computing represents a strong and effective way to engage more diverse students in CS, including girls, students of color, students of lower socio-economic status, rural students and students with learning exceptionalities. Seeing their projects come to life helps students understand the power of computer science and how things work in the real world. (EdWeek.org)

In order to teach CS and physical computing, especially at scale across the state, Iowa educators need thoughtful, inexpensive and well-supported tools. The Finch Robot 2.0 from BirdBrain Technologies (makers of the Hummingbird Robotics Kit) is an amazing K-12 solution! The Finch Robot is a small, white robot rover with wheels, LEDs, a ton of sensors and the ability to draw with washable markers. It's designed with a low floor and a high ceiling in mind, taking in feedback from literally thousands of teachers for the redesigned model. It can be programmed using many different devices such as Chromebooks, computers, iPads and tablets, using a variety of text-based, block-based and even icon-based coding languages to serve learners of all ages and skill levels. Unlike other tools, the Finch is a pre-made robot, perfect for quick, impactful activities during math class or in the library. Put angles, decimals and fractions into action during quick, fun activities!

Teachers will receive a classroom set of 15 Finch Robots to use for immediate implementation in the classroom. Teachers will also receive charging cables, micro:bits, washable markers and carrying cases for the Finches as well. PD sessions will be conducted online, allowing for accessibility and connection for teachers across Iowa. In one single three-hour virtual session, educators will learn multiple projects to serve beginners and intermediate students across 4-12 grades. PD will use the free app for phones and iPads, but we will also cover how to use the Finch with computers and Chromebooks.

In addition, as an online learning company, CodeJoy is also able to offer a unique opportunity: In virtual field trips directly serving students, teachers can observe micro:bit being taught virtually by CodeJoy's experienced teachers. In this innovative extension of PD, targeted peer observation is a form of collaborative professional development to share instructional techniques and pedagogy. Flexible scheduling throughout the school year is available.

**Professional Development:**

**Duration:** One three-hour online workshop scheduled July-October, plus one hour of virtual co-teaching/field trip available for students during school year.

**Date(s):** Workshops will occur between July 15 and August 31.

**Location:** Online

**Website:**

<https://codejoyeducation.com/>

**Social Media:**

Facebook:

<https://www.facebook.com/CodeJoyEdu>

Twitter:

<https://twitter.com/CodeJoyEdu>

**Information Webinar:**

January 20, 3:30-4:00

Register at:

<https://us02web.zoom.us/j/6481125weAUQOoykXmAy-9Pz>

Feb 15, 3:30-4:30

Register at:

<https://us02web.zoom.us/j/6481125weAUQOoykXmAy-9Pz>

**Requirements to Implement the Program:**

- 1.) Educator(s) must participate in one online workshop, lasting three hours. Scheduling of these is flexible.
- 2.) Teachers should join online workshops from a computer or Chromebook.
- 3.) Educator(s) must participate in the STEM Council Scale-Up Educator Survey.

**Photos:**



**STEM Scale-Up Program Application Link:** [www.iowaSTEM.org/Scale-Up-Application](http://www.iowaSTEM.org/Scale-Up-Application)