Computer Science Camp

Abstract

Our middle school students are growing up in a time of drastic change and relentless technological advances and disruptions. Students must be able to think both algorithmically and computationally for success in future careers and states are beginning to adopt K-12 Computer Science learning standards. They will also need to be able to think creatively, think critically, collaborate, and communicate for success in these careers. The Computer Science Camp will allow students to work on all of these skills, learn a little bit about Computer Science, and spark an interest in this ever-changing and rapidly growing field.

Android App programming was selected as 86.6% of the world market share uses Android devices vs. ~13% iOS and <1% other.

This camp was designed to align with Computer Science Teacher Association (CSTA) standards but has not yet been evaluated / approved by the CSTA.

Target Age Group: 10 to 14 years old (Middle School Ages)

Materials Required

1. Computer (Windows or Mac) with internet access using Mozilla Firefox 3.6+,m Google Chrome 4.0+, or Safari 5.0+. (Internet Explorer is not supported)
2. Google Account
3. Ability to install programs on computer
4. MIT App Inventor Tools installed on the computer

Materials Suggested but Not Required

- Android Device (example: Kindles Fires, Samsung Galaxy Tab 10.1, or any Android based tablet/phone with Android 2.3 "Gingerbread" or higher
- App Inventor Companion installed on mobile device

Example Schedule

This camp was designed to be 4-6 hours per day for five days. The amount of time it takes to get through the activities/development of apps will vary greatly depending on the level of your students.

Day 1	Students will: • Do a CS Career Exploration • Be introduced to the Engineering Design Process • Learn about Basics in MIT App Inventor • Learn about Pair Programming and Collaboration • Be introduced to Algorithms
Day 2	Students will: • Identify ideas for an App (Define Problem) • Continue Learning skills on MIT App Inventor (using Tutorials) • Sketch/Design App on paper (Generate Ideas/Develop A Solution) • Possibly begin creating App
Days 3 & 4:	Students will: • Work on Creating their App • Use tutorials and other resources to learn new features in MIT App Inventors
Day 5:	Students will: • Put final touches on App • Present Apps to group/families/whoever • Learn how to publish apps • Reflect

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