**A+ Computer Science Teacher Notes for New Computer Science A Lab Requirement**

Starting with the 2014-2015 school year, the GridWorld case study has been eliminated as a requirement for the AP Computer Science A curriculum. To ensure that students spend enough time on hands-on labs, the College Board has added a 20-hour lab requirement for students. To support the implementation of the 20-hour lab requirement, College Board has provided three exemplar labs for teachers to use. These labs will not be directly tested on the AP Computer Science A exam.

To read the official College Board announcement about this lab requirement, follow this link: <http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/221994.html>

To access resources for the new labs including student lab guides, follow this link :

<http://apcentral.collegeboard.com/apc/public/courses/teachers_corner/222163.html>

To access source code and teacher guides for the new labs, go the AP CS A Course Audit link :

<http://www.collegeboard.com/html/apcourseaudit/courses/computer_science.html>

It is important that you read this information and visit the AP Audit site to attest to your understanding of this requirement to use these labs in your course or submit a new syllabus that clearly indicates that you are allowing at least 20 hours of lab time for your students. You may submit one of the four approved syllabi, the A+ Computer Science approved syllabus, or your own.

The goal of the A+ Computer Science materials for the New Labs is to provide support materials for the Magpie Chatbot, Elevens, and Picture labs and to integrate these materials with the existing A+ Computer Science materials. These labs are not intended to be new teaching units that must be added to your curriculum. Instead they are intended to be labs that you can use to reinforce concepts that you have already taught, much like the labs that you find throughout the A+ Computer Science curriculum.

In this package, you will find teacher notes for each of the exemplar labs that describe what testable concepts the labs cover and when in the curriculum you might use the lab exercises. For example, exercises from the Elevens lab can be done throughout the curriculum as different concepts are taught. You will also find Powerpoint slides for each of the exemplar labs. Modified lab assignments and worksheets will be provided, where necessary.

**Main topics covered by each of the new AP CS A Labs :**

Magpie – Classes, randomness, and Strings – specifically indexOf(), substring(), and lots of Math.random()

Elevens – List of references – specifically using an ArrayList < SomeClass > / List < SomeClass >

Picture Lab – Matrices / Matrices of references – specifically using SomeClass[ ][ ] and focusing on array of arrays

**A+ Computer Science Labs that cover the same concepts as the new AP CS A Labs :**

Strings and randomness – HexChecker, MorseCode, Rock-Paper-Scissors, and Etch-A-Sketch

Lists of references – WordList, Numbers, Toys, Winter Scene, and BlackJack - 21

Matrices / Matrices of references - Forest, Tic-Tac-Toe, and Code and Ciphers

**Free Response Questions that cover the similar concepts as the new AP CS A Labs :**

Strings and randomness – 14.Q1, 11.Q4, 08.Q2, 08.Q4

Lists of references – 13.Q1, 12.Q1, 11.Q3, 10.Q1, 09.Q4, 08.Q1

Matrices / Matrices of references - 14.Q3, 13.Q4, 12.Q4, 11.Q4