

Computer Science A – AP  
Summer Course Materials  
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**Course Description:** This course is a fast-paced advanced level course that focuses on the study of the fundamental principles associated with object-oriented programming using the Java language. Topics include classes, objects, data types, variables, Boolean expressions, methods, looping, and input and output. Advanced topics include searching, sorting and recursion. The objective of this course is to prepare students for the A version of the Advanced Placement (AP) Computer Science examination.

To prepare for the Computer Science A - AP course it is recommended that you take Programming in Java G/T (formerly Principles of Computer Science G/T) or have the skills / knowledge taught in this course.

For those who have not had the recommended course, a PDF copy of the textbook can be obtained by emailing the instructor. A copy will be sent to you for your review. The focus of the recommended course would involve knowledge / skills gained from reviewing the following material:

- Chapter 3 – Introducing Java
- Chapter 4 – Variables and Constants
- Chapter 5 – Conditional Control Structures
- Chapter 6 – Loop Structures and Strings
- Chapter 7 - Methods
- Chapter 10 – Arrays

### **EDX.ORG Java Programming Online Course**

It is recommended that all students complete the online course tutorial *Introduction to Programming with Java - Part 1: Starting to Code with Java* found at [www.edx.org](http://www.edx.org)

This course is free (there is a paid version but I do not recommend this option). You will be required to complete a login / registration. The course is self-paced and includes video tutorials and projects that directly relate to the concepts taught in the Computer Science A – AP course. The suggested time to complete the course is 5 weeks if you spend 5-7 hours per week working on the lessons.

In addition, we use several online practice sites during our course. Creating a profile on these sites and being familiar with them is also recommended.

Practice It – University of Washington JAVA Practice Problems

Web Site: <http://practiceit.cs.washington.edu/>

Create an account

Complete the activities in Building Java Programs – 3<sup>rd</sup> Edition - Chapter 1 (optional)

There are:

- Self-Checks – multiple choice style questions that help you review Java concepts

- Exercises – small problems that require some coding to solve. Once an answer is submitted you will get feedback as to whether your solution is correct or not.

CodingBat – Online Coding Practice Site

Web Site: <http://codingbat.com/java>

Create an account

Complete activities in Warmup – 1 and Warmup – 2 (optional)