

AP Computer Science Summer Packet

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Congratulations on your choice of AP Computer Science for the 2009-2010 academic year. In this course, you will continue to learn the fundamentals of computer programming using the Java programming language, and by doing well on the AP exam you may earn college credit. This course will prepare you for further study of computer programming, and is the first step in preparing for a career in software engineering or information management. The skills you learn will also be useful in other technical fields, such as science and engineering, and will help you to think more logically.

The course is going to be very quick-paced, since it serves as both a continuation of Object Oriented Programming and an attempt to get college credit in the subject. Since timing is critical, please follow the instructions in this packet to prepare for next year.

If you have any questions or problems, feel free to email me at my school email address.

What To Do

You will install a working Java development environment (we will still be using BlueJ) on your home computer, and create a very simple program. By doing so, you will accomplish the following goals:

- 1) Have a working environment at home to support your class work next year
- 2) Become familiar with the process of creating and running a Java program
- 3) Become familiar with the program used to develop Java programs
- 4) Make sure that your environment works properly.

Steps

1) Download and install Java.

a. Browse to <http://java.sun.com/j2se/1.5.0/download.jsp>

b. Click on the link marked **Download JDK 5.0 Update 7** and follow the instructions.

By the time you do this, you may be up to Update 8 or higher – that's fine.

Make sure that you click the link marked JDK and not JRE!

You can choose either Windows Offline Installation, Multi-language or Windows Online Installation, Multi-language.

c. Double-click on the downloaded file (jdk-1_5_0_07-windows-i586-p-iftw.exe or jdk-1_5_0_07-windows-i586-p.exe, whichever you chose) and follow the prompts to install Java.

2) Download and install BlueJ, Eclipse, JCreator or JGrasp.

3). Enter the following into the newly created file. Build and Run.

```
public class Hello
{
    public static void main (String args[])
    {
        System.out.println ("Hello, world!");
    }
}
```

Congratulations! If not, and if you can't fix the problem on your own, e-mail me at mnas@rutherfordschools.org and send me a **specific** description of the problem you're having, with a screen dump illustrating it if appropriate attached. I'll be checking my e-mail frequently over the summer, and will probably get back to you within a day or two – except for a one-week period when I'll be vacationing in July.

Good luck!

URLs for all materials will be at the end of this document.

1. AP Computer Science Syllabus and list of items due on first day of school

2. Gridworld Case Study/Reading

Option 1: Download the following as separate documents:

- GridWorld Case Study Part 1
- GridWorld Case Study Part 2
- GridWorld Case Study Part 3
- GridWorld Case Study Part 4
- GridWorld Installation Guide
- GridWorld Quick Reference

Option 2: Download the Student Manual (70 pages) which contains all of the above in one document.

3. J2SE Download: Download the **J2SE SDK** from Sun's website.

<http://java.sun.com/j2se/1.4.2/download.html> or

<http://java.sun.com/javase/downloads/index.jsp> Make sure you download the latest release.

Remember to download SE and not EE. Make sure the files you download include the Java Runtime Environment (JRE).

4. IDE Download: Even though we will be compiling and running some programs from the command line interface, you will need an integrated development environment for your Java programs.

Sun's Java J2SE download site - <http://java.sun.com/j2se/1.4.2/download.html>

Sun's Java J2SE updates - <http://java.sun.com/javase/downloads/index.jsp>

Netbeans IDE - <http://www.netbeans.org/>

JGrasp IDE - http://spider.eng.auburn.edu/user-cgi/grasp/grasp.pl?dl=download_jgrasp.html

Eclipse IDE - <http://www.eclipse.org/>

BlueJ: - <http://www.bluej.org/>

APCentral - http://www.collegeboard.com/student/testing/ap/compsci_a/case.html

or

<http://www.rutherfordschools.org/boardofed/curriculum/index.html>

About GridWorld...

If using BlueJ, follow these steps:

1. Go to Preferences/Libraries.
2. Add the gridworld.jar file to the BlueJ Library.
3. Open, as a nonBlueJ, the projects folder/ firstProject. BugRunner is the file you will be using.

Finally (Vocabulary)

Define the following and give an example of how it is used in a program or for programming:

API (Application Programming Interface)

auto-boxing

bit

byte

compile-time error

CPU (Central Processing Unit)

early binding

garbage collection

GUI (graphic User Interface)

HTML (Hypertext Machine Language)

IDE (Integrated Development Environment)

Interface

jar file

JVM

precondition

postcondition

RAM (Random Access Memory)

run-time error or logic error

Turing machine

UML (Unified Modeling Language)

URL (Uniform Resource Locator)

List of Items due on the First Day of School:

1. Proof you have registered with AP Central for Computer Science A.
2. Proof (screen shots) that you have downloaded and installed the Java SDK on your home computer or accessible computer if there is no home computer.
3. Proof (screen shots) that you have an IDE on your home computer or accessible computer.
4. Completed GridWorld Case Study Part 1.
5. Complete all Logic 2 methods in JavaBat.
6. Complete definitions of the vocabulary words.