

## AP Computer Science Summer Assignment - Mrs. Wittbrodt, J11/Engineering Lab, 2016-2017

Welcome to AP Computer Science.

Congratulations on your choice of AP Computer Science for the 2016-2017 academic year. In this course, you will 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 in computer programming, and is the first step in preparing for a career in software engineering, computer science or information technology.

You do not need to have prior programming experience, but you must be very comfortable with computers and have completed at least Algebra 2. Learning a computer programming language is much like learning any language in that you must learn proper spelling, syntax, and structure. You will be learning the Java language, one of the most popular languages in the world, and you will be programming using object-oriented design methodology.

Your work will mostly be on a computer in the engineering computer lab. You may also bring your own computer to use for the class and/or use a home computer for working on assignments at home. Because writing a computer program is much like writing an essay, plagiarism is taken very seriously. Copies of online programs submitted as student work will receive a grade of 0.

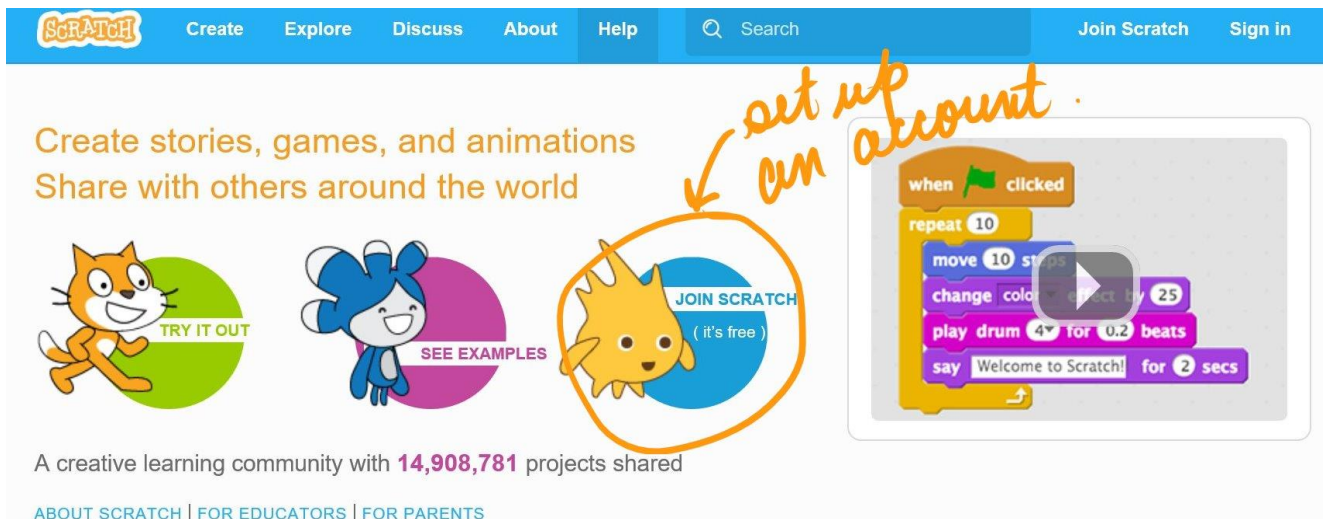
The summer assignment is designed to give you a simple 'feel' for putting together a computer program. This assignment provides you with three options, depending on your programming experience and your initiative (they will all be graded on an equal scale regardless of difficulty). The assignment is to use free programming environments to create a project to present during the first week of class. These projects can be VERY SIMPLE, so don't panic! The programming environments provide the software, documentation, tutorials, videos, and lots of examples. What you create from all of this is up to you. Here are the three options:

OPTION 1. If you have NEVER done programming before, you should choose the programming environment Scratch (<https://scratch.mit.edu>). Scratch is designed as a learning tool and is completely visual - no actual coding required. The tool allows you to use your creativity while also learning simple logic. This tool was created by MIT and is quite popular at all age levels.

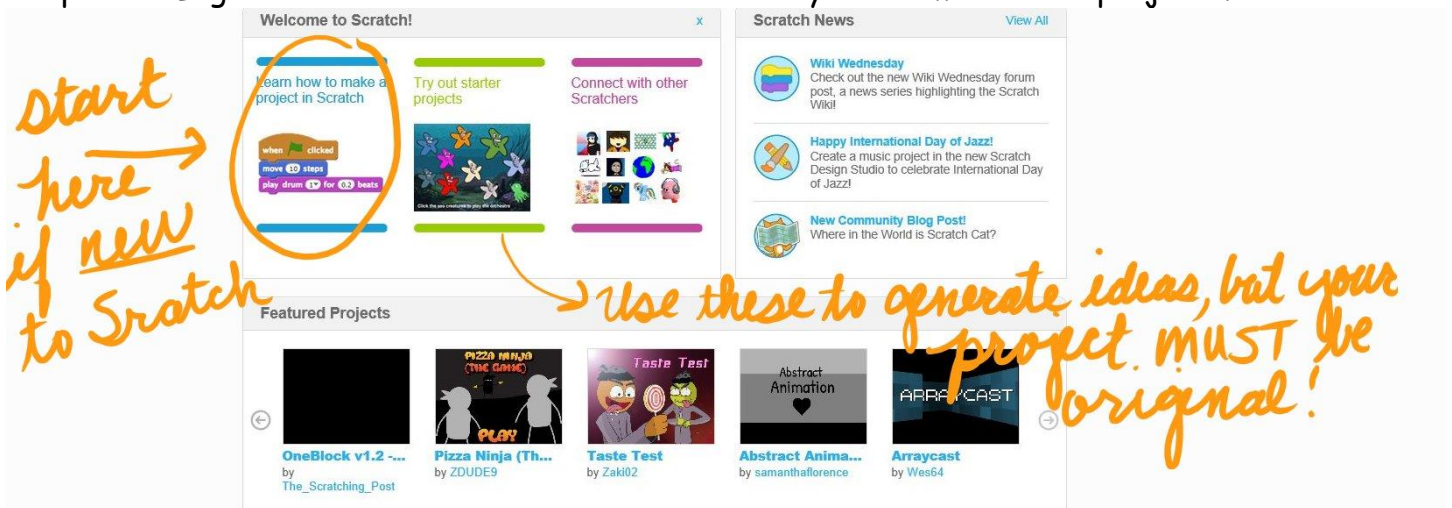
Your assignment is to: a) create an account on the Scratch website, b) view the getting started examples c) look at examples posted by other students, and d) CREATE YOUR OWN Scratch project.

The screen shots on the next page will show you where to get started on at [www.scratch.mit.edu](http://www.scratch.mit.edu)

Step One: Set up an account, with username and password.



Step Two: Log in and learn how to use Scratch and try out some starter projects.



Be sure you remember your username, password, and project name so you can access it during the first week of school to demonstrate your project.

OPTION 2. If you DO have programming experience, you may want to choose either of the following (instead of Scratch):

Greenfoot ([www.greenfoot.org/doc](http://www.greenfoot.org/doc)) which is a graphical environment (in grid form) that allows you to create games and entire 'worlds' of characters. It also comes with examples, tutorials, videos. It will be a bit more trouble to download and install but it will give you full instructions on the process.

Processing ([www.processing.org](http://www.processing.org)) is another language designed for beginning programmers and comes with examples, videos, and tutorials. It was designed for very visual presentations.

AGAIN - do #1 if you have little or no programming experience. If you have programmed before, you may not find much challenge with Scratch, so choose 1 of the other alternatives listed under OPTION 2.

What you create is up to you - it does NOT HAVE TO BE ELABORATE. This is a learning exercise and you should not spend more than 10 hours over the summer on this assignment. Just make sure you have something to show to the class the first week -- level of difficulty is NOT part of your grade for this assignment.

You will be sharing your project starting on the first full day of class. You will also be asked to talk about what you learned and how it works. Your work MUST be original - you may get ideas from the many examples on these websites, but your work must be your own! (Creating code is no different than writing an essay - plagiarism means a failing grade!)

You may email me at [awittbrodt@sonomaschools.org](mailto:awittbrodt@sonomaschools.org) during the summer if you have any questions. There is a Google Classroom setup for this course - you may join the classroom with the following code: z7ekq9e

Have fun and see you in the August.