

AP Computer Science A: Summer Work 2021

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Dear Students,

Welcome to **AP Computer Science**! In preparation for a year of hard (but fun and rewarding) work we have ahead of us, I have assigned some tasks for you to complete over the summer. The purpose of the summer work is to build your foundation in coding before we start the class, and get you used to programming in Java so we can get to work on the more complex code required by AP standards.

The required summer work is outlined in the **checklist** on the next page. A portion will be assigned through **CodeHS**. This is an online platform with videos, quizzes, and exercises for you to work through. Follow the procedures described on the following page. Complete all exercises to the best of your ability. If you run into problems, first refresh the page and retry and if it does not work, try collaborating with a friend from your class, referring to the online resources, and if necessary send me an e-mail. In addition to the CodeHS assignments, there is a **book** you'll need to read, and **software** you'll need to install on your computers. Get started early!

*****All of the assignments are due on the first day of school this Fall.
If you do not complete all of the summer work, you will not be
permitted to participate in the course.*****

I will be available at several points throughout the summer to answer questions via Zoom. I will announce the times of these sessions through email. Additionally, I have included several links, resources, and tips on the last page.

I look forward to working with you as the year progresses. By the end of the course, you will be able to write code fluently in **Java** (still the most in-demand programming language), and you will be experts in logical thinking and problem-solving. Have a great summer break!

Sincerely,

Ms. Navab

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AP CS A Summer Work Checklist		
Task	Instructions	Done?
1. CodeHS Modules	<ul style="list-style-type: none"> Start by going to: https://codehs.com/go/AB774 and making a student account <ul style="list-style-type: none"> Use your BWL email and pick a password you can remember. Write it down!!! COMPLETE THESE MODULES: <ul style="list-style-type: none"> Java Pretest (Unit 0) <ul style="list-style-type: none"> Contains 1 lessons Primitive Types (Unit 1) <ul style="list-style-type: none"> Contains 7 lessons Email me if you get stuck or have questions! <i>This will count towards your first quarter grade.</i> 	<input type="checkbox"/>
2. Reading	<ul style="list-style-type: none"> Read the book <i>Humble Pi: When Math Goes Wrong in the Real World</i> by Matt Parker https://www.amazon.com/dp/0593084691/ref=cm_s_w_em_r_mt_dp_TDKE7B62TPA7HQCPWEW4?encoding=UTF8&psc=1 Write a 1-2 page response and prepare to discuss it during the first week of school 	<input type="checkbox"/>
3. Install Java SDK	<ul style="list-style-type: none"> Download and install Java Software Development Kit (SDK) Go to: http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html Under Java SE Development Kit 8u291 (or whichever is on top), click "Accept license agreement" and click on the download link next to your operating system of choice (i.e. Mac OS) Double click the downloaded file and follow the instructions to install. Once installed, there is no program to open; move on to installing Eclipse 	<input type="checkbox"/>
4. Install Eclipse	<ul style="list-style-type: none"> Download and install Eclipse <ul style="list-style-type: none"> <i>an Integrated Development Environment (IDE) for Java programming</i> Go to: https://www.eclipse.org/downloads/ Choose your operating system, and download Eclipse IDE for Java Developers Follow instructions to install when double-clicking the download 	<input type="checkbox"/>

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Resources

- **CollegeBoard** AP Computer Science A course information and exam description:
 - <https://apcentral.collegeboard.org/pdf/ap-computer-science-a-course-and-exam-description.pdf?course=ap-computer-science-a>
- **Bookmark Mr. M-S's YouTube playlist** for helpful videos for the class:
 - https://www.youtube.com/watch?v=eqWmW3Ttrek&list=PLkqgz05rJnAC_8q0f-BbZsJkDNHjCL0JC&ab_channel=WMarchSteinmanWMarchSteinman
 - **Khan Academy** videos are great too, especially for visual learners
- For motivation 😊
 - <https://www.geeksforgeeks.org/top-10-reasons-to-learn-java/>
 - https://www.youtube.com/watch?v=SzJ46YA_RaA&ab_channel=DoS-DomainofScience
 - https://www.youtube.com/watch?v=QvyTEx1wyOY&ab_channel=Code.org

Tips for Success

Every student in this course has a different history. There are differences in mathematics skills, technical background, communication, independence, and personality. While you have some variance in starting point, there are several factors that will help to ensure your success in this course, no matter your background:

- **Stay organized**
 - Maintain an **organized file system** on your computer!!! Personally, I like to sync everything with Google Drive and found these tips helpful: <https://shakeuplearning.com/blog/13-tips-to-organize-your-google-drive/>
 - Keep all of your work in digital and physical forms, especially laboratory work for review before the exam. **Back up all work in at least two places.**
- **Be proactive**
 - Read the material before we discuss it in class, and demonstrate your curiosity and engagement regularly during class discussions.
 - Attend extra help. By clarifying any issues you have early on, you can avoid catastrophe as the material and concepts accumulate. It is imperative that you have a handle on early material, as it is the foundation for the rest of the course.
 - Check your school email regularly, and make it a habit to check for grades, assignments, and supplemental material.
- **Embrace mathematics, logic, and CREATIVITY!**
 - The AP Computer Science A exam is highly technical and requires a strong knowledge of the Java programming language, as well as programming techniques and analysis. Logical thinking, creative problem-solving, and some mathematics skills are necessary to succeed.
 - Our goal is to embrace elegant solutions to problems. Many problems can be solved in several ways, but you will save time and effort if you learn to find the simple solutions hidden in each problem throughout the course. If you find yourself writing excessive amounts of code, you may wish to reconsider your approach to a problem.