# AP Computer Science Principles Course Syllabus

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## Class Overview

Computer Science Principles (CSP) is a **full-year, rigorous, entry-level course** that introduces high school students to the foundations of modern computing. The course covers a broad range of foundational topics such as programming, algorithms, the Internet, big data, digital privacy and security, and the societal impacts of computing. The course is designed for typical school settings with teachers in classrooms. All teacher and student materials are provided for free online.

## Curriculum Overview and Goals

Computing affects almost all aspects of modern life and all students deserve access to a computing education that prepares them to pursue the wide array of intellectual and career opportunities that computing has made possible. This course is not a tour of current events and technologies. Rather, it seeks to provide students with a "future proof" foundation in computing principles so that they are adequately prepared with both the knowledge and skills to live and meaningfully participate in our increasingly digital society, economy, and culture.

Here is a brief summary of each of the units in the curriculum.

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| **Unit 1:** The Internet | Learn how the multi-layered systems of the internet function as you collaboratively solve problems and puzzles about encoding and transmitting data, both 'unplugged' and using Code.org's Internet Simulator. |
| **Unit 2:** Digital Information | Learn how computers store complex information like images, video, and sound. Use interactive widgets to explore concepts like image representation and compression. |
| **Unit 3:** Intro to Programming | Learn the JavaScript language with turtle programming in Code.org's App Lab coding environment. Learn general principles of algorithms and program design that apply to any programming language. |
| **Unit 4:** Big Data and Privacy | Research current events at the intersection of data, public policy, law, ethics, and societal impact. Learn the basics of how and why modern encryption works. |
| **Explore PT Prep** | Practice and then complete the Explore Performance Task (PT). |
| **Unit 5:** Building Apps | Continue learning how to program in the JavaScript language. Use Code.org's App Lab environment to create a series of applications that live on the web. Each app highlights a core concept of programming. |
| **Create PT Prep** | Practice and then complete the Create Performance Task (PT). |
| **Post AP:** Data Tools | Learn how computers allow data to be collected, cleaned, analyzed, and visualized in order to find patterns and draw conclusions. |

## Classroom Expectations
A. Honesty
- Cheating will not be tolerated, school policies apply in full. If caught copying someone else's work you will receive 0 on that assignment or quiz.
  - Looking at information online is OK
  - Brainstorming with a friend is OK
  - Having your friend teach you a new method is OK
  - You MUST write all your own HTML and Javascript code
  - You MUST be able to explain anything you have written
  - You CANNOT copy a classmate's work
  - Violations here will also be reported to the administration
- All content you create text, images, etc. must be school appropriate. You will receive 0 on an assignment that violates this policy.
- All content you use must be your own work, public domain, or properly linked to the source or quote a source. If you are not sure, ask your instructors.

B. Student Behavior
Students are expected to act respectfully, courteously, and appropriately at all times. In particular:
- Come to class with all necessary materials prepared to learn and participate.
- Do not create problems for your classmates or the instructors, and attempt fix problems you encounter quickly and quietly.
- Do not cause distractions in the classroom.
- Be attentive and on task at all times.
- **No food in the classroom. No drinks except for water in a closed container.**

C. Professionalism
Introduction to Computer Science is a CTE (Career and Technical Education) course, and as such, there are certain expectations that go beyond what you might have in any other class. CTE courses have a focus on career skills and professionalism, and strive to give a real-world experience. Because of this, professionalism is a major point of emphasis and is part of your grade (see below).

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Consider this classroom to be like a workplace—you have just
been hired at LHS Consulting Firm, Inc. and this classroom
is your office.  Treat your coworkers (classmates) and your
managers (instructors) with the respect you would expect to
show in a work environment.
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D. Use of Technology
- Classroom computers should only be used for AP Computer Science-related work. In particular, you *should never* use the computers to check e-mail, surf the web, look at your grades, play games or do work for other classes without permission from the course staff. These policies apply to personal laptops as well.
- Personal electronics (cell phones, MP3 players, etc.) *are not to be used in class*. At all. If these are out, they will be confiscated.
- **Exception**: When music is playing over the classroom speakers, you may be listening to your own music if you choose. However, it is your responsibility to ensure that you are aware of what is happening the classroom and personal music must be turned off when the classroom music goes off. I recommend only using one headphone so you can still hear.

E. Late Policy

In general, late work **will not be accepted**, and assignments not turned in on time will receive a zero.  Exceptions to this policy will only be considered as follows:

- If you are absent (excused) for a period including the due date of an assignment, all work due during your absence is due a number of days after you return equal to the number of days you were absent.
- If you are absent (excused) for a prolonged period of time that does not include the due date of an assignment, but believe your absence has affected your ability to complete the assignment on time, you must speak to Mr. Bradley on your first day back to discuss the situation.

It is **YOUR RESPONSIBILITY** to find out what was covered on a day you were absent and make up the required work.  If you do not do so in the timeline described above, you will receive a zero and will not be allowed to make up the work.

## Grading

A. *Projects (40% of final grade)*
- For AP Computer Science Principles, the College Board requires two performance tasks to be submitted: Explore and Create Performance tasks. We will do a practice one of each along with the official one that is submitted to the College Board.

B. *Test and Quizzes (30% of final grade)*
- A test or quiz will be given at the end of each unit at a minimum to measure understanding of that unit's learning goals.

C. *Daily Work (20% of final grade)*
- Daily work primarily encompasses the work that is submitted for each lesson in code.org's studio.

D. Journals *(10% of final grade)*
- Students will journal about the day's work to not only help them develop a deeper understanding of the day's lesson, but also help them practice their writing skills.

I. **Leadership Opportunities in Computer Science**



This year, Liberty High School is starting a chapter of the Technology Student Association (TSA) Career and Technical Student Organization (CTSO). Among the opportunities that TSA offers for us include state and national competitions in app development, website design, and software development/programming contests. All students are encouraged to join and become involved in this great opportunity!

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## AP Computer Science Principles Acceptance of Syllabus and Policies

By signing the below, I agree to the following:

- I will be a good classmate, respectful of others and the instructor.
- I will try my best on my assignments and projects.
- My work will be my own.
- I'll be creative and have a great time building things no one has built before!


_____          _____

Student Signature                                    Parent Signature