

Mrs. Heather Renfroe - Instructor

# AP Computer Science Principles

"Life is like a trumpet. If you don't put anything into it, you don't get anything out of it."

2023-2024

Gulf Breeze High School

--W.C. Handy

For this class, you will need:

Regular & punctual attendance

Computer with Internet Access at Home

Printer at Home

Pen, Pencil

Folder with brads & pockets

Loose leaf paper

Good Attitude!

## About this Course

AP Computer Science Principles introduces students to:

- the central ideas of computer science
- inviting students to develop the computational thinking vital for success across multiple disciplines
- focuses on fostering students to be creative and
- encourages students to apply creative processes when developing computational artifacts

Students design and implement innovative solutions using an iterative process similar to what artists, writers, computer scientists, and engineers use to bring ideas to life.

In partnership with the National Science Foundation, the AP Program collaborated with secondary and postsecondary educators and members of computer science educational professional organizations to develop the AP Computer Science Principles curriculum framework.

## Course Overview

The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. In this course, students will

- Develop computational thinking skills vital for success across all disciplines
- Use computational tools to analyze and study data and work with large data sets to analyze, visualize, and draw conclusions from trends
- Apply creative processes when developing computational artifacts and to think creatively while using computer software and other technology to explore question that interest them
- Develop effective communication and collaboration skills, working individually and collaboratively to solve problems

Please be familiar with Teams, my website [heatherrenfroe.com](http://heatherrenfroe.com) and where to locate information for your class as well as the weekly lesson plans.

Contact Mrs. Renfroe for more information:

[renfroh@santarosa.k12.fl.us](mailto:renfroh@santarosa.k12.fl.us)

## Prerequisites

Students in APCSP should have **successfully completed Algebra I & Geometry** with a strong foundation in basic algebraic concepts dealing with function notation, such as  $f(x) = x + 2$ , and problem-solving strategies that require multiple approaches and collaborative efforts.

## Course Requirements

Student agrees to complete the **Summer Reading**, the course, including the AP CSP College Board Exam.

Sign up or complete the following prior to July 1:

- **Remind** – free downloadable app; code is @f6aaeh
- Install **Office 365** at home
- Download & read the free book "**Blown to Bits**" (300+ pages)
- Create an account at **Code.org** – Be familiar with this site.

## Goals

Unit 1: **Digital Information** – Explore how computer store complex information like numbers, text, images & sound. Debate the impacts of digitizing information.

Unit 2: **The Internet** – Learn about how the Internet works & discuss its impacts on politics, culture & the economy.

Unit 3: **Intro to App Design** – Design your first app while learning both fundamental programming concepts & collaborative software development processes.

Unit 4: **Variables, Conditionals & Functions** – Expand the types of apps you can create by adding the ability to store information, make decisions, & better organize code.

Unit 5: **Data** – Explore & visualize datasets

Unit 6: **Lists, Loops & Traversals** – Build apps that use large amounts of information and pull in data from the web.

Unit 7: **Parameters, Return & Libraries** – Learn how to design clean and reusable code that you can share with a single classmate or the entire world.

Unit 8: **Cybersecurity & Global Impacts** – Research & debate current events at the intersection of data, public policy, law, ethics, and societal impact

Unit 9: **Create PT Prep** – (Submitted to AP College Board)

Unit 10: **Algorithms** – Design & analyze algorithms to understand how they work and why some are considered better than others.

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# AP Computer Science Principles

## Expectations/Rules

It's important that we have a few mutual expectations:

- ✓ I expect you to try to learn the material. This includes completing all necessary assignments on time and asking questions when you are having problems.
- ✓ Students should respect their classmates and property.
- ✓ You **WILL NOT BE ALLOWED** to use the back door for entry into our classroom during passing period.
- ✓ Be in your assigned seat when the tardy bell rings.
- ✓ **NO FOOD** or SODA allowed in the classroom...Water bottles can be kept in your backpack.
- ✓ **Cell phones, electronic devices & ear buds are to be put away unless given permission to use them.**
- ✓ No games allowed on school technology without permission. This is a violation of your AUP.
- ✓ Cheating on schoolwork or test will result in a 0% grade.
- ✓ You are a **DOLPHIN** act like it.

## Evaluation

- How do you earn a Grade? Participation (20%), Classwork/Homework (30%) and Test/Projects (50%)
- Students will be responsible for completing each lesson in Code.org by the due date posted on the assignment in Focus.
- Students will be responsible to complete the AP Create Performance Task by the due date posted on the assignment in Focus.
- When absent, the student remains responsible to check Microsoft Teams and/or my website, <https://www.heatherrenfroe.com/lessons--plans.html> for any and all assignments. The due dates will remain in effect. One day behind in an AP class is equivalent to 4-5 days behind in a standard course.
- -10 pts for each day an assignment is submitted after the due date. All assignments are time and date stamped.
- Grades will be posted in Focus in timely manner.

## SIGN AND RETURN TO CLASS

I have read and understand the contents of the syllabus, the student handbook, and the Code of Conduct. I will adhere to the rules and policies described:

\_\_\_\_\_  
Student Name (Printed)

\_\_\_\_\_  
Parent Name (Printed)

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Parent Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date