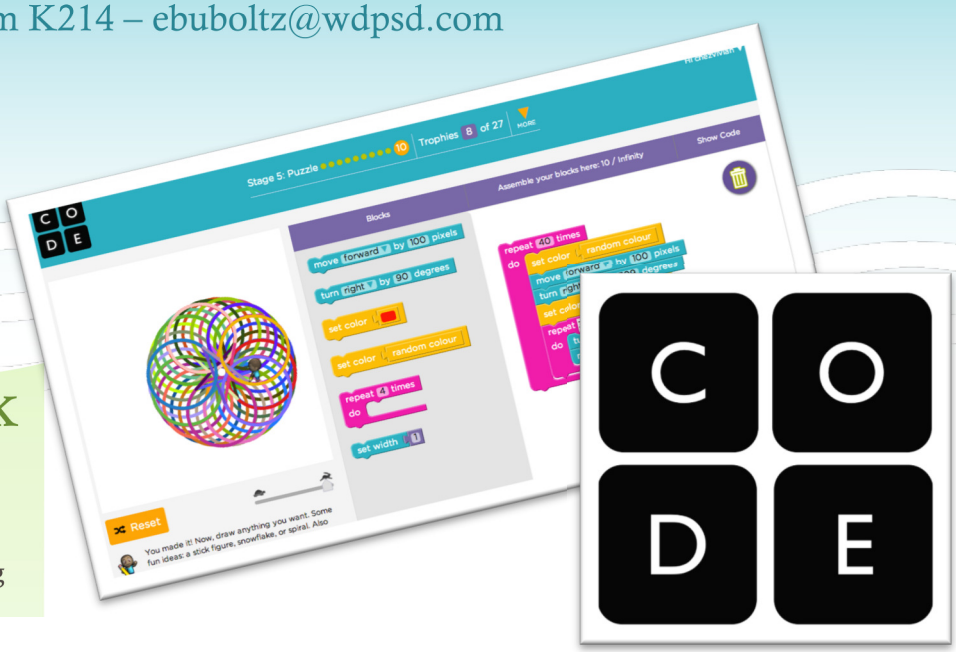
WEST DE PERE 2021-2022

AP®

Computer Science Principles

Mrs. Buboltz – Room K214 – ebuboltz@wdpsd.com

Prerequisite: successful completion of Algebra 1



CSP Framework

Big Ideas:

1: Creative Development
2: Data
3: Algorithms and Programming
4: Computing Systems and Networks
5: Impact of Computing

Computational Thinking Practices:

P1: Computational Solution Design
P2: Algorithms and Program Development
P3: Abstraction in Program Development
P4: Code Analysis

Code.org is recognized by the College Board as an endorsed provider of curriculum and professional development for AP® Computer Science Principles.

Code.org's Computer Science Principles (CSP) curriculum is a two-trimester, 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. All teacher and student materials are provided for free online.

Why computer science? Every 21st century student should have the opportunity to learn computer science. The basics of computer science help nurture creativity and problem-solving skills, and prepare students for a future in any field or career.

Save the Dates!

Performance Task Due

Spring 2022 (Date TBD)

You will be given 12 hours of class time to complete a "portfolio" that will be part of your overall AP score. You will submit your final projects before the end of 2nd trimester.

Multiple Choice Test

Monday, May 9, 2022 - noon

You will have two hours to complete 74 multiple-choice questions. These will cover material we learn in class and we will have after-school review sessions during 3rd trimester.

Unit	Description
Unit 1 Digital Information	Explore how computers store complex information like numbers, text, images, and sound and debate the impacts of digitizing information.
Unit 2 The Internet	Learn about how the Internet works and discuss its impacts on politics, culture, and the economy.
Unit 3 Intro to App Design	Design your first app while learning both fundamental programming concepts and collaborative software development processes.
Unit 4 Variables, Conditionals, and Functions	Expand the types of apps you can create by adding the ability to store information, make decisions, and better organize code.
Unit 5 Lists, Loops, and Traversals	Build apps that use large amounts of information and pull in data from the web to create a wider variety of apps.
Unit 6 Algorithms	Design and analyze algorithms to understand how they work and why some are considered better than others.
Unit 7 Parameters, Return, and Libraries	Learn how to design clean and reusable code that you can share with a single classmate or the entire world.
Unit 8 Create PT Prep	Practice and complete the Create Performance Task (PT).
Unit 9 Data	Explore and visualize datasets from a wide variety of topics as you hunt for patterns and try to learn more about the world around you.
Unit 10 Cybersecurity and Global Impacts	Research and debate current events at the intersection of data, public policy, law, ethics, and societal impact.

Grading Procedure/Scale

Your grade in this course will be comprised of your performance on each of the following:

- Classwork/homework
- Daily Participation and Peer Feedback
- Responses and progress in studio.code.org and in Google Classroom
- Practice Performance Tasks and Unit Projects
- Chapter Assessments

AP CSP Policy on Plagiarism

A student who fails to acknowledge (i.e, through citation, through attribution, by reference, and/or through acknowledgement in a bibliographic entry) the source or author of any and all information or evidence taken from the work of someone else will receive a score of 0 on that particular component of the performance assessment task. Students must understand how to ethically use and acknowledge the ideas and work of others, as well as the consequence of plagiarism. The student's individual voice should be clearly evident, and the ideas of others must be acknowledged, attributed, and/or cited.

Create Performance Task

Applications from Ideas

You will have 12 hours of class time to develop, complete and submit the following:

- A video of your program running
- Individual written responses about your program and development process
- Program code

When completing the Create task, you will design, implement and test a program on a topic that interests you or one that solves a problem. You will provide written responses to prompts about your program and specific program code that are significant to the functionality of your program. It is strongly recommended that a portion of the program involve some form of collaboration with another student in our class, for example, in the planning, designing, or testing (debugging) part of the development process. Your written responses, however, must be done independently.

***Note: We will complete several "practice performance tasks" in class before beginning the one you will submit for your AP score. The 12 hours will not be during consecutive class periods, giving you time to process outside of class and work most efficiently during class. Sample rubrics will be provided so that you know exactly what is expected of you. All final submissions will be made to the College Board **before** the end of the 2nd trimester.*

AP Test Assessment Overview

The AP CSP course has two assessments, consisting of a performance task and an end-of-course AP Exam. Both assessments are summative and will be used to calculate a final AP score (using the 1–5 scale).

Assessment	Timing	Percentage of Total AP Score
Create Performance Task	12 hours	30%
End-of-course Exam	2 hours	70%

The End-of-Course Exam contains 70 questions composed of two types of multiple-choice questions:

- **57 Single-select multiple-choice questions:** Students select one answer from among four options.
- **5 Single-select multiple-choice questions:** With a reading passage about a computing innovation.
- **8 Multiple-select multiple-choice questions:** Students select two answers from among four options.

You will be provided with an Exam Reference Sheet that provides instructions and explanations to help you understand the format and meaning of the questions you will see on the exam. The reference sheet includes two programing formats: text based and block based. No particular programing language is designated on the exam.

The AP CS Principles Exam is Monday, May 9, 2022 - noon

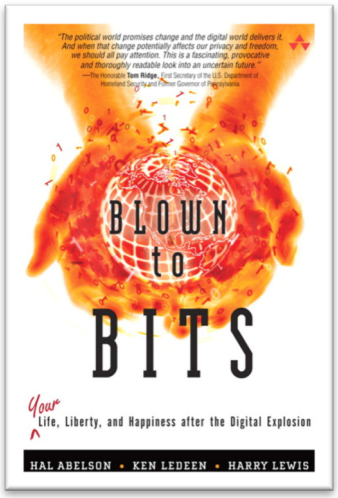
Materials

Chromebooks/Internet

You will use your school-issued chromebook for any in-class work. It is strongly recommended that you have access to a computer (not just a cell phone) with internet capabilities at home as well. If this is a problem for you, please see me immediately.

Our main sites will be:

- https://studio.code.org (personal login required)
- Google Classroom for announcements, assignments and other important information



Suggested Text

This course does not require or follow a textbook. *Blown to Bits* is a book that can be accessed online **free of cost**. Many of its chapters are excellent supplemental reading for our course.

Blown to Bits http://www.bitsbook.com/

Other

You should have the following things with you every day in class:

- Charged chromebook (and charger)
- 3-ring binder or folder for handouts
- Pen/pencil/highlighter
- Journal or notebook
- Positive Attitude ☺