



## **Greenwich Public Schools Curriculum Overview**

### **INTRODUCTION TO COMPUTER PROGRAMMING B**

Personalized learning is achieved through standards-based, rigorous and relevant curriculum that is aligned to digital tools and resources.

*Note: Teachers retain professional discretion in how the learning is presented based on the needs and interests of their students.*

#### **Course Description**

Introduction to Computer Programming B

(Concentration in HTML & CSS)

1st or 2nd semester

027215/027216

6 Blocks

.5 Credit

Prerequisites: C or better in Algebra 1, Extended Algebra, or Algebra/Geometry Course 2.

This semester course is designed to introduce the most fundamental web design concepts using HTML and CSS. Topics include how to structure and style web pages through a project-based learning environment. Emphasis is placed on real-world understanding.

#### **Unit Guide**

Unit 1: Introduction to HTML and CSS

Unit 2: Display and Positioning

Unit 3: SVG, Gradients, Transformations and Animations

Unit 4: Semantic Elements and Responsive Page Design

Unit 5: FlexBox Layout

Unit 5: Grid Layout

Unit 7: Final Project

#### **Computational Thinking Practices**

- Code Implementation
- Code Testing
- Documentation

#### **Mathematical Practices**

- Make sense of problems and persevere in solving them.
- Reason abstractly.
- Use appropriate tools strategically.
- Look for and make use of structure.

#### **Enduring Understandings**

- Code developers create and innovate using an iterative design process that is user-focused, that incorporates implementation/feedback cycles, and that leaves ample room for experimentation and risk-taking.

- The way a computer represents data internally is different from the way the data are interpreted and displayed for the user. Programs are used to translate data into a representation more easily understood by people.
- The way statements are sequenced and combined in a program determines the result.

### **Essential Questions**

- How does one use an IDE and event-driven programming to build an app?
- How do multiple programming languages work together in a computer application? What are the roles of HTML, CSS and JavaScript in a browser-based application? What are the specific syntax rules of each language?
- How does a web page meet the needs of the user? What is the purpose of the page itself?
- How does the desire for page simplicity inform the use of layout, color, imagery and type?
- How does the need for page responsiveness drive design and content?
- Why is there a need to debug?
- Why is it important to test code on a variety of test cases?
- How does testing the program with a wide group of users help confirm its effectiveness?

### **Resources and Assured Experiences**

Online resources:

[W3schools.com](http://W3schools.com)

Mozilla Development Organization

repl.it

Summative Assessments

Formative Assessments

Classwork

Preparation

**GHS Capstone Task:** Capstone Vision of the Graduate Capacity: #6 - *Generates innovative, creative ideas and products*

**Quarterly Grading** - Quarter Grades will be determined using the following components:

- Participation (includes Classwork) = 20%
- Preparation (includes Homework) = 20%
- Assessments (both Summative & Formative) = 60%

### **CSTA Computer Standards:**

2-AP-15      Seek and incorporate feedback from team members and users to refine a solution that meets user needs.

2-AP-16      Incorporate existing code, media, and libraries into original programs, and give attribution.

3A-AP-19      Systematically design and develop programs for broad audiences by incorporating feedback from users.

3A-AP-21      Evaluate and refine computational artifacts to make them more usable and accessible.

3A-AP-22 Design and develop computational artifacts working in team roles using collaborative tools.

3A-AP-23 Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.

3B-AP-22 Modify an existing program to add additional functionality and discuss intended and unintended implications (e.g., breaking other functionality).

**[Connecticut Common Core State Standards](#)**