

CMS Technology & Engineering Overview 2022-2023

Digital Literacy (6th Grade)

Instructor: Barbara Peskin

Class time: Typically twice per six day rotation, for the whole year

Course Description: This introductory course for 6th graders is designed to instill sound digital citizenship habits, teach skills and strategies for effective computer use, and explore computational thinking and systems at a basic level. Students will use Scratch to explore programming concepts and a variety of tools to understand how computers work and the connection to programming. The curriculum follows the Digital Literacy and Computer Science state frameworks. The skills and strategies taught are planned to be used and reinforced in most, if not all, of the students' core academic classes.

Creating with Scratch (6th Grade)

Instructor: Barbara Peskin

Class time: Three classes per six day rotation, for one trimester

Course Description: The purpose of this trimester long enrichment course is to introduce students to Scratch as a beginner coding language. The four components of the class build skills as students develop confidence with their coding via: CS First Storytelling; DeBug It!; Creating sprites and background with Pixelmator; and ending with Challenges!

Coding (7th Grade)

Instructor: Elizabeth Rose

Class time: Three classes per six day rotation, for one trimester

Course Description: Based on Code.org's Computer Science Discoveries curriculum, this course for 7th graders is designed to create and share the content on your own web pages. After deciding what content you want to share with the world, you'll learn how to structure and style your pages using HTML and CSS. You'll also practice valuable programming skills such as debugging and commenting. By the end of the unit, you'll have a personal website that you can publish to the Internet with your own unique URL!

Interactive Animations and Games (8th Grade)

Instructor: Elizabeth Rose

Class time: Three classes per six day rotation, for one trimester

Course Description: Based on Code.org's Computer Science Discoveries curriculum, this course for 8th graders is designed for students to build on your (7th grade) coding experience as you program animations, interactive art, and games in Game Lab. The unit starts off with simple shapes and builds up to more sophisticated sprite-based games, using the same programming concepts and the design process computer scientists use daily. In the final project, you'll develop a personalized, interactive game!

Makerspace (all grades)

Facilitators: Elizabeth Stockwood, Sara Porth

Locations: Makerspaces are found in the libraries of both CMS buildings

Description: Facilitated by the CMS library staff, our Makerspaces are the newest additions to our middle school STEM offerings and provide an opportunity for student “tinkering” that can be hard to fit into the confines of more formal class structure. Access to the makerspace can happen during after-school club time, elective blocks, and on a drop-in sign-up basis. For an idea of some of the fun projects taking place in these spaces, check out the [Makerspace webpage](#).

Introduction to Engineering & Design (7th & 8th Grade)

Instructors: Alex Doig (7th) and Dave Davidson (8th)

Class time: Three classes per six day rotation, for one trimester

Course Description: The purpose of this trimester long enrichment course is to understand the role engineering design plays in everyday life by exploring 4-5 engineering building challenges. Students create and present working models to demonstrate their understanding. Each project area will address a different essential question:

1. How do rockets fly?
2. How many ways can a puzzle cube be designed?
3. How can you design a bionic hand?
4. How can you build a structurally sound bridge?

As a capstone project, students will be asked to choose one of the subject areas investigated and build a working model to demonstrate the engineering principles involved. Students will then present and demonstrate their model to the class.

Rockin' and Rollin' with Spheros (7th & 8th Grade)

Instructors: Hiral Shah (7th) and Sharon Staggers-Moss (8th)

Class time: Three classes per six day rotation, for one trimester

Course Description: The purpose of these trimester long enrichment courses is to have students learn the basics of programming robots and develop their understanding through a series of robotic challenges. They will be introduced to programming via lines and blocks. The ultimate outcome is that students will learn to program a game using JavaScript. The 8th grade course is an extension of the 7th grade course curriculum, but it is not necessary to have taken the 7th grade course in order to effectively participate.