Introduction to Computing (Pilot)

Overview: Students practice basic computer skills and learn about effective use of computer applications through fun and engaging activities. Students are also exposed to age-appropriate computational thinking principles and problem-solving. Students have opportunities to design websites and develop animations, games, art, and stories, and program simple physical devices while learning the basics of programming in several kid-friendly platforms.

Objectives:

- Develop proficiency in basic computing applications, such as word processors, presentations, and spreadsheets
- Learn correct online behaviors
- Utilize organizational tools with folders, files, drives and other resources
- Identify Computer parts and their functions
- Develop problem-solving and computational thinking skills and apply them to computing problems.
- Create Web pages using HTML and CSS
- Apply basic programming constructs to develop projects such as games, animations, art and stories
- Manipulate physical devices to add interactive features through programming

Assessments: Project rubrics, pre-post test, mini-quizzes and/ or exit tickets

Course Essentials:

Equipment	**Cost/Unit**
	TBD
Computer or laptop	
Other Materials	Reusable: $1200 Consumable: (up to $300 per year, replace as needed)

First Semester Course Outline

Unit 1: How to Use Computers Effectively	Introductory class activities, What are computers, How are computers used in society, Correct online behavior , How to organize files, folders. Learning where to save at and how/ to save to thumb drives, cloud, and local computer drives, storage- differences in sizes (mb, gb) and cost!!
Unit 2: How to use common computer applications	Spreadsheets, presentations, and documents, recommended image use

Unit 3: Problem-solving (Code.org)	Intro to Problem-solving, problem-solving process, exploring problem-solving, input and output, processing and storage to design an app project. Unplugged activities included.

Second Semester Course Outline

Unit 4: Web development	+Explore web pages. Intro to html, headings, web page projects, digital footprint Styling with CSS, Styling project, intellectual property, using images, websites for expression, advanced styling elements, Project- Personal webpage development.
Unit 5: Interactive animations and games	Programming for entertainment, shapes, and drawing in game lab , variables, random numbers, sprite properties, text, Project, Loops and movements and animation project, conditionals, and interactions, game design process and project
Unit 6: Physical computing	Physical inputs and outputs, algorithms and processing of signals, debugging, effective simulation use for debugging, power and safety, inter-device communication, Project