



## Coding and Foundational Computer Skills

### Course Description

Foundation of computer disciplines: Coding concepts, terminology, and structure. File and Directory management. Defining a goal/problem, planning for a solution, implementing the solution, testing, and documentation. A small amount of typing practice. Exposure to computer hardware and rudimentary networking. Focus will be placed on logic, breaking items into smaller parts, and see the relationship between concepts. Students will have a wide exposure to keep their interest, enforce concepts, and provide a broad foundation. The goal is learning a wide range of rudimentary knowledge, vocabulary, and having fun. How much exposure a student will receive on topics below will be dictated by Grade, advancement, and class interest in a subject. Code.org and Scratch

### Course Topics

#### Coding concepts

- Algorithm
- Pseudo code
- Program
- Variable
- Hash Table
- Array
- Loop
- Conditional Constructs
- Function
- String
- Integer
- Scripting
- Structure
- Object

#### Vocabulary Examples

- Declarative
- Imperative
- Shell
- Backus-Naur Form
- Host Name
- Server/Client
- IP Address
- DNS
- PING
- Directory
- File Formats
- DOC
- CSV
- HTML
- Application
- GUI
- UI User Interface
- Authentication
- Permission
- Interpreter
- CPU & GPU
- Storage
- GPU
- RAM & ROM
- Operating System
- RISC
- CISC

#### What did kids learn before the Internet?

- Same coding concepts as today with.
- LOGO Programing
- BASIC Programing
- Files and directories
- Typing

#### Parts of a computer

- Viewing
- Touching
- Possibly building and install the OS.
- ESD

#### Basic understanding of the Internet

- HOST Name
- DNS
- IP Address
- Gateway
- HTML
- SSL

### Websites, Applications used or demonstrated.

<https://code.org/>

<http://www.calormen.com/jslogo/>

<https://www.turtleacademy.com/>

<https://docs.google.com>

<https://www.draw.io>

<https://scratch.mit.edu/>

Upper grade levels will use the local application and website to practice file management.

<https://docs.google.com>

PowerShell & the Mac Shell Terminal