Department: Science
Course Name: Computer Science

Course Description:
This year-long course introduces students to practical problem solving and computational thinking using the Python programming language. This course is designed for varied levels of prior programming experience and is taught through unified instruction and shared learning objectives. Students will learn to design, implement, test, and refine programs that model real-world situations and applications. Core topics include variables, control structures, functions, data structure, file processing, and object-oriented programming. Emphasis is placed on applying programming concepts through hands-on activities and projects, with built-in opportunities for deeper exploration, optimization, and extension. Students are expected to spend time both in class and outside the class practicing programming skills and completing assignments. Student performance is assessed through projects, quizzes, tests, and classroom work. Class is offered as a non-lab science elective.

Content:
Programming as a Problem-Solving Tool (Introduction to Python)
Decision Making in Programs
Program Structure and Functions
Working with Data
Modeling with Objects
Applications Project

Skills:
Apply computational thinking to analyze problems and design algorithmic solutions.
Write, test, debug Python programs to solve real-world problems.
Design modular programs using functions and appropriate data structures.
Develop and refine applications through iterative testing, problem solving, and improvement.

Text and Materials:
Starting Out with Python by Tony Gaddis. Available online resources will be utilized as needed.

Methods of Instruction:
The primary language for the course is Python. The course will consist of teacher-led lectures, hands-on programming activities, longer coding assignments, regular quizzes, projects and exams. Regular quizzes and tests give them feedback on progress.

Methods of Evaluation:
Tests
Quizzes
Class projects
Classwork