Fundamentals of Computer Science Syllabus

Course Description/Goals:

Students in this course will design, implement and present solutions to real-world problems using computer science concepts. Coursework will include creating interactive games, animations, stories, debugging and designing algorithms using the programming language Python. Skills such as problem solving, communication, portfolio building and digital citizenship will be part of each student activity/project. This course will utilize TechSmart and PLTW Computer Science for Innovators and Makers as a curriculum framework.

Course TEKS/Objectives:

Fundamentals of Computer Science is an introductory course designed for students beginning their computer science journey. It covers essential computing tools, problem-solving, and reasoning skills. Students will explore real-world challenges through creativity, collaboration, and technology. The course promotes digital citizenship and responsible technology use while helping students select appropriate tools, create solutions, and evaluate outcomes. The TEKS are organized into six strands: Creativity & Innovation, Communication & Collaboration, Research & Information Fluency, Critical Thinking, Problem Solving & Decision Making, Digital Citizenship, and Technology Operations & Concepts. Each strand includes specific standards students are expected to master.

https://tea.texas.gov/about-tea/laws-and-rules/sboe-rules-tac/sboe-tac-currently-in-effect/ch130o.pdf

Course Outline:

Semester 1	Semester 2
-How do computers think? -Programming the Microbit -Input -Output -Bluetooth -Interactions -Demo Codes -Statement and Variables -Concentrating Numbers -Expressions -Conditionals	-Animating Shapes -Framerate -Timers -Lists -Range -Functions -Return Values -Complex Parameters