Course Syllabus for:
Computer Science Grade 8-12

Nay Ah Shing High School

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What is Computer Science?

Computer Science is an introductory **computer programming** class for 8th - 12th graders. Students will learn about the basics of what makes a computer program and will write many of their own programs.

Textbook?

There is no textbook but instead an extensive on-line curriculum that is self-paced by each student. The course is offered by **Code.org.** Code.org is a free course supported by all the major tech companies of the world with the goal to get more students into programming.

TOPICS COVERED:

Unit 1:Problem solving process, What is a computer, Input-Output, Processing, Apps & storage, Propose your own App.

Unit 2:Exploring web sites, Intro to HTML, headings, digital foot print, lists, intellectual property rights, clean code & debugging, styling text with CSS(cascading style sheets), sources & search engines, RGB colors and classes, personal portfolio website.

Unit 3: **Animation& Games**: Programming for entertainment, plotting shapes, drawing in game Lab, shapes & randomization, variables, sprites, draw Lab, sprite movement, Boolean, conditionals, Keyboard and other inputs, interactive card, velocity, collision detection, functions, the game design process, design a game.

Unit 4: The Design Process: Understanding your user, user interfaces, feedback & testing, identifying user needs, prototype, Designing Apps for good, Market research, more prototyping, prototype testing, digital design, linking screens, Testing apps, improving & iteration, app presentation.

Unit 5: Data & Society: ASCII & Binary representations, representing Images/Numbers, keeping data secret, problem solving and data, making decisions with data

Unit 6: Physical Computing: Designing screens with code, the electronic circuit playground, input, board events, getting properties, analog input, arrays and color LED's, making music, arrays & For loops, accelerometer, functions & parameters, circuits & physical prototypes.

What work will be required of students?

The student's progress is showed on the instructors screen as well as a log of how many lines of code the student has written.

Work required of students:

- Tests, Quizzes **25 % of grade**
- Attendance **40 % of grade**
- Effort/progress **35 % of grade**

Late work will be accepted up until the chapter test has been taken.

Grading:

A= performance above grade level	A = 90-100%,
B= performance at or near grade level	B = 80-89 %
C= performance at grade level	C = 70-79%
D= performance below grade level	D = 60-69 %