



AP Computer Science A (Java)

Fairfield Warde High School
Fairfield Ludlowe High School

Full Year
Grades 10 - 12

Prerequisite: APCS Principles (B or better) or Programming and Game Design (B or better)

COURSE DESCRIPTION

The Advanced Placement Computer Science Course offers advanced students an opportunity to complete college-level work in high school. Utilizing the Java programming language, the course provides an introduction to the fundamental concepts of object-based analysis (OOA), design (OOD), and programming (OOP), and how object-oriented languages differ from procedural languages. Students will work on a wide variety of interesting and challenging problems that will be used as a context to focus on problem-solving skills and higher-level thinking. The topics covered include the concepts of abstraction, encapsulation, modularity, inheritance, analysis of algorithms, and polymorphism. The course will focus on CS-1 material (A curriculum). Students are expected to take the AP test in May.

COURSE OBJECTIVES

By the end of this course, students will be able to: Design and implement computer-based solutions to problems. Use and implement commonly used algorithms and data structures. Develop and select appropriate algorithms and data structures to solve new problems. Write solutions fluently in an object-oriented paradigm. Write, run, test and debug solutions in the Java programming language. Read and understand programs consisting of several classes and interacting objects. Read and understand a description of the design and development process. Understand the ethical and social implications of computer use.

UNITS OF STUDY

- Unit 1: Introduction to Computer Careers
- Unit 2: Primitive Types
- Unit 3: Using Objects
- Unit 4: Boolean Expressions and if Statements
- Unit 5: Iteration
- Unit 6: Writing Classes
- Unit 7: Array
- Unit 8: ArrayList
- Unit 9: 2D Array
- Unit 10: Inheritance
- Unit 11: Recursion

AP EXAM

AP EXAM DATE: **May**

COURSE POLICIES AND REQUIREMENTS

GRADING

Cumulative / In-Progress Grade:

- 90% will reflect the student's mastery of course content and skills on summative assessments
- 10% will reflect the student's progress on formative assessments, homework, and behavior

End-of-the-Year Grade:

- 90% will reflect the student's cumulative course grade through summative and formative assessments as described above
- 10% of the end-of-the-course grade will reflect the student's performance on the course final assessment

MATERIALS:

Access to College Board account

Access to PC/Laptops that support Java SDK

EXPECTATIONS OF STUDENTS:

The Fairfield Public Schools provide a safe learning environment. Our high school community, in collaboration with parents and other townspeople, fosters a society that recognizes and promotes the dignity and worth of the individual. We believe that meeting the diverse needs of all students will encourage lifelong learning and responsible citizenship.

EXTRA HELP:

Appointments for extra help or individual conferences can be prearranged during a mutual common free period or after school.