



GREAT NECK PUBLIC SCHOOLS

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Curriculum Profile: Introduction to Programming

<u>Department</u>	Mathematics		
<u>Course Name</u>	Introduction to Programming and Java		
<u>Course Length</u>	1 year (two semesters)		
<u>High School Credits</u>	1		
<u>Description</u>	The Java programming language will be introduced. Topics covered will be strings, arrays, graphics, loops, methods, and libraries. Standard programming syntax will be covered: variables, conditional statements, loops, functions, events, and concepts of object-oriented programming. Java's Swing package for applets will be used.		
<u>Target/eligible students</u>	Prerequisite of Algebra 1		
<u>State Learning Standards Link(s)</u>	Not applicable		
<u>Primary texts and materials</u>	Computers with a Java IDE and JDK installed		
<u>Scope/Sequence</u>	1. Basic Computer Hardware 2. Purpose and Evolution of Programming 3. Base Conversions 4. Program Development Cycle 5. Program Design Technique 6. Intro to Java 7. Variables, Assignments, and Declarations 8. Data in Java 9. String Literals 10. Using Returned Values 11. Classes of the JDK 12. Conditionals 13. Logical Operators 14. "While" loops 15. "For" loops 16. Anatomy of a Method 17. J-Option Pane 18. The Anatomy of a Class 19. Method Practice	20. Visibility Modifiers and Encapsulation 21. Method Overloading 22. Applications of Method Overloading 23. Association between Objects of Classes 24. Null, this, aliases 25. Objects as Parameters 26. Static methods and variables, and Exceptions 27. Intro to Arrays 28. Using Arrays 29. Arrays of Objects 30. Using Arrays of Objects 31. More Array Practice 32. 2D Arrays 33. Intro to GUIs 34. Buttons, Texts, Fields, Events 35. Layout Managers	
<u>Additional Notes</u>	Class is project-based with smaller assignments for each lesson. Each quarter includes 2-4 larger, long-term programming assignments.		