

Prime Factor Math Circle and School of Programming  
Java Honors Curriculum

Lesson	Topic
Trimester 1	
Lesson 1	Coding environment overview. Java program framework. Variables, primitive types. Methods, methods that return values Operations. Integer arithmetic.
Lesson 2	Conditionals More of integer arithmetic
Lesson 3	While Loop
Lesson 4	Strings in Java
Lesson 5	Booleans, logical operators
Lesson 6	For-loops
Lesson 7	Character data type in .Java. Characters vs. Strings, ASCII codes.
Lesson 8	Arrays
Lesson 9	Chess board problems
Lesson 10	End-of-trimester test
Trimester 2	
Lesson 11	File reading
Lesson 12	Reading from a console. Writing to a file
Lesson 13	2D Arrays
Lesson 14	Lists in Java
Lesson 15	Lists advanced, lists pitfalls.
Lesson 16	Object-oriented. Classes in Java
Lesson 17	Object-oriented. Base classes and derived classes. Constructors
Lesson 18	Object-oriented. Private, public, static.
Lesson 19	Object-oriented. "Vessels" project
Lesson 20	Sets in Java
Trimester 3	
Lesson 21	Switch operator, ternary operator
Lesson 22	Maps in Java
Lesson 23	Hangman project
Lesson 24	Recursion 1
Lesson 25	Minesweeper project 1
Lesson 26	Minesweeper project 2
Lesson 27	Writing solid code. Parameters: passing by value and reference.
Lesson 28	Complexity
Lesson 29	Sorting Algorithms
Lesson 30	Final test