Unit 1 Topics: **Primitive Types**

In this unit you will learn how to write simple programs using only variables of type int and double. Topics covered include:

- Variables
- Data types: int, double, and boolean
- Assignment statements
- Numeric Literals
- Integer Division
- Creating and Using Scanner Objects
- Casting to an Int
- Increment and Decrement Operators
- Modulus Operator %

Unit 2 Topics: **Objects – a beginning**

In this unit you will learn how to use objects. Specific topics include.

- The difference between classes and objects
- Constructors and the keyword *new*
- Methods with and without parameters
- Methods that return a value and those that do not
- Strings
- Static methods and the Math class

Unit 3 Topics: **Boolean Expressions**

The main focus of this unit is Boolean expressions and if statements. Topics covered include:

- Comments
- Types of Errors
- Boolean Expressions
- And (&&), Or (||), and Not (!) operators
- if, if-else, and if-else if statements.
- Comparing Strings

Unit 4 Topics: **Iteration**

The main focus of this unit is:

- while loops
- for loops
- nested loops
- informal code analysis

Unit 5 Topics: **Writing our own Classes**

There will be two sub units because this is an important topic and not simple.

For Unit 5A, please complete the following methods at codingbat.com.
Any five of the Logic 1 Problems
Any five of the String 2 Problems.

For Unit 5B, please complete the following methods at codingbat.com
Logic 2: noTeenSum (write a helper method as suggested)
Logic 2: roundSum (write a helper method as suggested)
String 3: equalIsNot (write a helper method that returns the number of times a string appears in another string)
String 3: gHappy (write a helper method similar to something on page 3 of the notes)
String 3: mirrorEnds (write a helper method that has a string parameter and returns the string in reversed order)

Unit 6 Topics: **Arrays**

This unit covers one-dimensional arrays of primitives and objects.

Unit 7 Topics: **ArrayLists**

Here are the main topics of this unit:
- ArrayLists
- Linear and Binary Search Algorithms
- Selection Sort and Insertion Sort Algorithms

Unit 8 Topics: **2D Arrays**

This short unit is about 2D arrays of primitives and objects.

Unit 9 Topics: **Inheritance**

Unit 10 Topics: **Recursion**

In addition to learning how to read (but not write) recursive methods, students will learn how the MergeSort algorithm works.

Last Topis: **Review for AP Exam**