

Software and App Development - AP Computer Science A 5 & 6
Scope & Sequence: Year 3

Semester 1		Semester 2	
Quarter 1	Quarter 2	Quarter 3	Quarter 4
<p>Technical Standards: 1, 4, 5, 13 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8</p> <p><u>Unit 1</u> Primitive Types (8-10)</p> <ul style="list-style-type: none"> • Why Programming? Why Java? • Variables and Data Types • Expressions and Assignment Statements • Compound Assignment Operators • Casting and Ranges of Variables <p>Technical Standards: 1, 4, 13, 18 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8</p> <p><u>Unit 2</u> Using Objects (13-15)</p> <ul style="list-style-type: none"> • Objects: Instances of Classes • Creating and Storing Objects (Instantiation) • Calling a Void Method with Parameters • Calling a Non-void Method • String Objects: Concatenation, Literals, and More • String Methods • Wrapper Classes: Integer and Double • Using the Math Class 	<p>Technical Standards: 1, 6, 7, 13 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8</p> <p><u>Unit 4</u> Iteration (14-16)</p> <ul style="list-style-type: none"> • While Loops • For Loops • Developing Algorithms Using Strings • Nested Iteration • Informal Code Analysis <p>Technical Standards: 1, 11, 13, 18 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8</p> <p><u>Unit 5</u> Writing Classes (12-14)</p> <ul style="list-style-type: none"> • Anatomy of a Class • Constructors • Documentation with Comments • Accessor Methods • Mutator Methods • Writing Methods • Static Variables and Methods • Scope and Access • This Keyword • Ethical and Social Implications of Computing Systems 	<p>Technical Standards: 1, 3, 7, 8, 13, 17, 19 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8</p> <p><u>Unit 7</u> ArrayList (10-12)</p> <ul style="list-style-type: none"> • Introduction to ArrayList • ArrayList Methods • Traversing ArrayLists • Developing Algorithms Using ArrayLists • Searching • Sorting • Ethical Issues Around Data Collection <p>Technical Standards: 1, 7, 8, 13 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8</p> <p><u>Unit 8</u> 2D Array (10-12)</p> <ul style="list-style-type: none"> • 2D Arrays • Traversing 2D Arrays <p>*Technical Skills Assessment Industry Certification Testing</p>	<p>Technical Standards: 1, 11, 13, 18 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8</p> <p><u>Unit 9</u> Inheritance (13-15)</p> <ul style="list-style-type: none"> • Creating Superclasses and Subclasses • Writing Constructors for Subclasses • Overriding Methods • Super Keyword • Creating References Using Inheritance Hierarchies • Polymorphism • Object Superclass <p>Technical Standards: 1, 6, 13 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8</p> <p><u>Unit 10</u> Recursion (3-5)</p> <ul style="list-style-type: none"> • Recursion • Recursive Searching and Sorting <p>* Java Certification * AP Exam</p>

Software and App Development - AP Computer Science A 5 &6
Scope & Sequence: Year 3

Semester 1		Semester 2	
Quarter 1	Quarter 2	Quarter 3	Quarter 4
Technical Standards: 1, 6, 13 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8 <u>Unit 3</u> Boolean Expressions and If Statements (11-13) <ul style="list-style-type: none"> • Boolean Expressions • If Statements and Control Flow • If-Else Statements • Else If Statements • Compound Boolean Expressions • Equivalent Boolean Expressions • Comparing Objects 	Technical Standards: 1, 7, 8, 13 Pro. Standards: 1, 2, 3, 4, 5, 6, 7, 8 <u>Unit 6</u> Array (6-8) <ul style="list-style-type: none"> • Array Creation and Access • Traversing Arrays • Enhanced for Loop for Arrays • Developing Algorithms Using Arrays 		