TEALS Program

1 AP CS A

- Video Tutorials
- Curriculum Assets

1.1 Part I - College Board Ordering (See Part II below for order that follows the textbook order)

1.2 Curriculum Maps College Board

- CB Unit 1: Primitive Types
- CB Unit 2: Using Objects
- CB Unit 3: Boolean Expressions and if Statements
- CB Unit 4: Iteration
- CB Unit 5: Writing Classes
- CB Unit 6: Array
- CB Unit 7: ArrayList
- CB Unit 8: 2D Array
- CB Unit 9: Inheritance
- CB Unit 10: Recursion
- Test Review (3 weeks)
- Post-AP Exam Projects (4–5 weeks)

1.3 CB Unit 1: Primitive Types

- Lesson 1.01: Using IDE/Code Editor
- Lesson 1.02: Algorithms & Computational Thinking
- Lesson 1.03: String & Console Output
- Lesson 1.04: Common Errors & Comments
- Lesson 1.05: Static Methods & Method Calls (1/2)
- Lesson 1.06: Static Methods & Method Calls (2/2)
- Lesson 1.07: Programming Project
- Lesson 1.08: Finding & Fixing Errors
- Lesson 1.09: Review
- Lesson 1.99: (Unit 1 Test)
- Lesson 1.XX: Open Ended Programming Project
- Lesson 2.00: Test Review & Reteach
- Lesson 2.01: Basic Data Concepts
- Lesson 2.02: Declaring & Assigning Variables
- Lesson 2.03: String Concatenation & Increment Decrement Operators
- Lesson 2.04: Mixing Types & Casting

1.4 CB Unit 2: Using Objects

- Lesson 3.00: Test Review & Reteach
- Lesson 3.01: Parameters
- Lesson 3.02: Limitations of Parameters & Multiple Parameters
- Lesson 3.03: Return Values
- Lesson 3.04: Programming Project
- Lesson 3.05: Using Objects & String Processing
- Lesson 3.06: Interactive Programs & Scanner Objects
- Lesson 3.07: Pokémon Battle Programming Project
- Lesson 3.08: Finding & Fixing Errors

1.5 CB Unit 3: Boolean Expressions and if Statements

- Lesson 3.09: Relational Operators & if/else
- Lesson 3.10: Nested if/else Statements
- Lesson 3.11: Reducing Redundancy
- Lesson 3.16: Boolean Logic (2 Days)

1.6 CB Unit 4: Iteration

- Lesson 2.05: for Loops
- Lesson 2.06: nested for Loops
- Lesson 2.07: Scope & Pseudocode
- Lesson 2.08: Programming Project
- Lesson 2.08a: Programming Project
- Lesson 2.09: Programming Project
- Lesson 2.10: Finding & Fixing Errors
- Lesson 2.11: Review
- Lesson 2.99: (Unit 2 Test)
- Lesson 3.12: Cumulative Algorithms
- Lesson 3.13: while Loops
- Lesson 3.14: Random Numbers
- Lesson 3.15: Fencepost & Sentinel Loops
- Lesson 3.17: Finding & Fixing Errors
- Lesson 3.18: Consumer Lab
- Lesson 3.19: Review
- Lesson 3.99: (Unit 3 test)
    - Test 2 Guide
- Lesson 3.XX: Frac Calc
- Lesson 3.XX1: Programming Project(FracCalc Alternative)

1.7 CB Unit 5: Writing Classes

- Lesson 4.00: Test Review & Reteach
- Lesson 5.01: Object Oriented Programming
- Lesson 5.02: Object State & Behavior
- Lesson 5.03: Object Initialization: Constructors
- Lesson 5.04: Encapsulation
- Lesson 5.05: Finding & Fixing Errors
- Lesson 5.06a: Data Lab
- Lesson 5.07: Review
- Lesson 5.99: (Unit 5 test)
- Lesson 5.XX: Programming Project(Picture Lab Alternative)

1.8 CB Unit 6: Array

- Lesson 6.00: Test Review & Reteach

- Lesson 4.01: Array Basics
- Lesson 4.02: For-Each Loop & Arrays Class
- Lesson 4.03: Printing, Searching, & Testing for Equality (2 Days)
- Lesson 4.04: Reference Semantics
- Lesson 4.05: Shifting Values & Arrays of Objects

1.9 CB Unit 7: ArrayList

- Lesson 4.07: ArrayList
- Lesson 7.01: Searching Algorithms
- Lesson 7.02: Sorting Algorithms
- Lesson 7.03: Elevens Lab (16 Days)
- Lesson 7.04: Review
- Lesson 7.99: (Unit 7 test)
    - Test 6 Guide

1.10 CB Unit 8: 2D Array

- Lesson 8.00: Test Review & Reteach
- Lesson 4.06: Nested Loop Algorithms & Rectangular Arrays
- Lesson 4.08: Finding & Fixing Errors
- Lesson 4.09: Magpie Lab (5 Days)
- Lesson 4.09a: Steganography Lab
- Lesson 5.06: Picture Lab (9 Days)
- Lesson 4.10: Review
- Lesson 4.99: (Unit 4 test)
- Lesson 4.XX: Programming Project(Magpie Alternative)
- Lesson 5.00: Test Review & Reteach

1.11 CB Unit 9: Inheritance

- Lesson 6.01: Inheritance Basics (2 Days)
- Lesson 6.02: Overriding Methods & Accessing Inherited Code
- Lesson 6.03: Interacting with the Object Superclass
- Lesson 6.04: Polymorphism
- Lesson 6.05: Has-a Relationships
- Lesson 6.06: Interfaces
- Lesson 6.07: Programming Project (5 Days)
- Lesson 6.07a: Celebrity Lab
- Lesson 6.08: Finding & Fixing Errors
- Lesson 6.09: Review
- Lesson 6.99: (Unit 6 test)
    - Test 5 Guide
- Lesson 6.XX: Text Excel

1.12 CB Unit 10: Recursion

- Lesson 7.00: Test Review & Reteach
- Lesson 8.01: Thinking Recursively
- Lesson 8.02: Writing Recursive Solutions
- Lesson 8.03: Mechanics of Recursion
- Lesson 8.04: MergeSort
- Lesson 8.05: Finding & Fixing Errors
- Lesson 8.06: Review
- Lesson 8.07: (Unit 8 quiz)
- Lesson 8.08: Quiz Review & Reteach

1.13 AP Test Review (3 weeks)

- Lesson 9.00: Reviewing for the AP Exam

1.14 Post-AP Exam Projects (4–5 weeks)

- Character Clash
- SpaceBattleArena
- TEALS Minecraft Modding

1.15 Culture Days (4 days)

- Culture Day Lesson A: Video/Reading
- Culture Day Lesson B: Student Research Project/Presentation
- Culture Day Lesson C: My Skills and Interests Journal
- Culture Day Lesson D: Interview with People in Technology

1.16 Appendix

- About This Curriculum
- Changelog
- Learning Objectives
- Contributing
- Acknowledgements

1.17 Curriculum Maps

- Unit 1: Programming & Java (2 weeks)
- Unit 2: Working with Data & Basic Control Flow (3 weeks)
- Unit 3: Advanced Data & Control Flow (4 weeks)
- Unit 4: Arrays, Lists, & Files (4 weeks)
- Unit 5: Object-Oriented Programming (4 weeks)
- Unit 6: Inheritance & Polymorphism (4 weeks)
- Unit 7: Searching & Sorting (3 weeks)
- Unit 8: Recursion (2 weeks)
- Unit 9: AP Test Review (3 weeks)
- Unit 10: Post-AP Exam Projects (4–5 weeks)

2 Part II - Building Java Programs TextBook Ordering

2.1 Unit 1: Programming & Java (2 weeks)

- Lesson 1.01: Using IDE/Code Editor
- Lesson 1.02: Algorithms & Computational Thinking
- Lesson 1.03: String & Console Output
- Lesson 1.04: Common Errors & Comments
- Lesson 1.05: Static Methods & Method Calls (1/2)
- Lesson 1.06: Static Methods & Method Calls (2/2)
- Lesson 1.07: Programming Project
- Lesson 1.08: Finding & Fixing Errors

- Lesson 1.09: Review
- Lesson 1.99: (Unit 1 Test)
- Lesson 1.XX: Open Ended Programming Project

2.2 Unit 2: Working with Data & Basic Control Flow (3 weeks)

- Lesson 2.00: Test Review & Reteach
- Lesson 2.01: Basic Data Concepts
- Lesson 2.02: Declaring & Assigning Variables
- Lesson 2.03: String Concatenation & Increment Decrement Operators
- Lesson 2.04: Mixing Types & Casting
- Lesson 2.05: for Loops
- Lesson 2.06: nested for Loops
- Lesson 2.07: Scope & Pseudocode
- Lesson 2.08: Programming Project
- Lesson 2.09: Programming Project
- Lesson 2.10: Finding & Fixing Errors
- Lesson 2.11: Review
- Lesson 2.99: (Unit 2 Test)

2.3 Unit 3: Advanced Data & Control Flow (4 weeks)

- Lesson 3.00: Test Review & Reteach
- Lesson 3.01: Parameters
- Lesson 3.02: Limitations of Parameters & Multiple Parameters
- Lesson 3.03: Return Values
- Lesson 3.04: Programming Project
- Lesson 3.05: Using Objects & String Processing
- Lesson 3.06: Interactive Programs & Scanner Objects
- Lesson 3.07: Pokémon Battle Programming Project
- Lesson 3.08: Finding & Fixing Errors
- Lesson 3.09: Relational Operators & if/else
- Lesson 3.10: Nested if/else Statements
- Lesson 3.11: Reducing Redundancy
- Lesson 3.12: Cumulative Algorithms
- Lesson 3.13: while Loops
- Lesson 3.14: Random Numbers
- Lesson 3.15: Fencepost & Sentinel Loops
- Lesson 3.16: Boolean Logic (2 Days)
- Lesson 3.17: Finding & Fixing Errors
- Lesson 3.18: Consumer Lab
- Lesson 3.19: Review
- Lesson 3.99: (Unit 3 test)
    - Test 2 Guide
- Lesson 3.XX: Frac Calc
- Lesson 3.XX1: Programming Project(FracCalc Alternative)

2.4 Unit 4: Arrays, Lists, & Files (4 weeks)

- Lesson 4.00: Test Review & Reteach
- Lesson 4.01: Array Basics
- Lesson 4.02: For-Each Loop & Arrays Class
- Lesson 4.03: Printing, Searching, & Testing for Equality (2 Days)
- Lesson 4.04: Reference Semantics
- Lesson 4.05: Shifting Values & Arrays of Objects
- Lesson 4.06: Nested Loop Algorithms & Rectangular Arrays
- Lesson 4.07: ArrayList
- Lesson 4.08: Finding & Fixing Errors

- Lesson 4.09: Magpie Lab (5 Days)
- Lesson 4.09a: Steganography Lab
- Lesson 4.10: Review
- Lesson 4.99: (Unit 4 test)
- Lesson 4.XX: Programming Project(Magpie Alternative)

2.5 Unit 5: Object-Oriented Programming (4 weeks)

- Lesson 5.00: Test Review & Reteach
- Lesson 5.01: Object Oriented Programming
- Lesson 5.02: Object State & Behavior
- Lesson 5.03: Object Initialization: Constructors
- Lesson 5.04: Encapsulation
- Lesson 5.05: Finding & Fixing Errors
- Lesson 5.06: Picture Lab (9 Days)
- Lesson 5.06a: Data Lab
- Lesson 5.07: Review
- Lesson 5.99: (Unit 5 test)
- Lesson 5.XX: Programming Project(Picture Lab Alternative)

2.6 Unit 6: Inheritance & Polymorphism (4 weeks)

- Lesson 6.00: Test Review & Reteach
- Lesson 6.01: Inheritance Basics (2 Days)
- Lesson 6.02: Overriding Methods & Accessing Inherited Code
- Lesson 6.03: Interacting with the Object Superclass
- Lesson 6.04: Polymorphism
- Lesson 6.05: Has-a Relationships
- Lesson 6.06: Interfaces
- Lesson 6.07: Programming Project (5 Days)
- Lesson 6.07a: Celebrity Lab
- Lesson 6.08: Finding & Fixing Errors
- Lesson 6.09: Review
- Lesson 6.99: (Unit 6 test)
    - Test 5 Guide
- Lesson 6.XX: Text Excel

2.7 Unit 7: Searching & Sorting (3 weeks)

- Lesson 7.00: Test Review & Reteach
- Lesson 7.01: Searching Algorithms
- Lesson 7.02: Sorting Algorithms
- Lesson 7.03: Elevens Lab (16 Days)
- Lesson 7.04: Review
- Lesson 7.99: (Unit 7 test)
    - Test 6 Guide

2.8 Unit 8: Recursion (2 weeks)

- Lesson 8.00: Test Review & Reteach
- Lesson 8.01: Thinking Recursively
- Lesson 8.02: Writing Recursive Solutions
- Lesson 8.03: Mechanics of Recursion
- Lesson 8.04: MergeSort
- Lesson 8.05: Finding & Fixing Errors
- Lesson 8.06: Review

- Lesson 8.07: (Unit 8 quiz)
- Lesson 8.08: Quiz Review & Reteach

2.9 Unit 9: AP Test Review (3 weeks)

- Lesson 9.00: Reviewing for the AP Exam

2.10 Unit 10: Post-AP Exam Projects (4–5 weeks)

- Character Clash
- SpaceBattleArena
- TEALS Minecraft Modding

2.11 Culture Days (4 days)

- Culture Day Lesson A: Video/Reading
- Culture Day Lesson B: Student Research Project/Presentation
- Culture Day Lesson C: My Skills and Interests Journal
- Culture Day Lesson D: Interview with People in Technology

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