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

The following curriculum map is a day-by-day listing of the AP Computer Science course in chronological order. Each row represents one day of class, based on a medium-paced class. Readings from the textbook and homework assignments are included on the day when they should be assigned. Refer to the Introduction document for information about how to adjust this pacing for your specific classroom.

- Unit 2 Slides
- Unit 2 Word Bank
- Curriculum Assets

LP	Title	In Class	Reading	Homework
2.00	Test Review & Reteach	Review test	2.1 except for "Mixing types and Casting"	Test corrections
2.01	Basic Data Concept	WS 2.1	2.2 up to "String Concatenation"	SC 2.1-2.3 (4th, 5th : 2.1,2.3,2.4)
2.02	Declaring & Assigning Variable	WS 2.2 Practice SC 2.7, 2.11 (4th, 5th: 2.8, 2.13) E 2.1	Rest of 2.2	SC 2.5,2.6,2.9, 2.12-2.15 (4th, 5th: 2.6,2.7,2.1,2.14-2.17)
2.03	String Concatenation & Increment Decrement Operators	Grudgeball	Rest of 2.2	SC 2.4 (4th, 5th: 2.5)
2.04	Mixing Types & Casting	WS 2.4 Poster 2.4	2.3 up to "Nested for Loops"	finish WS 2.4
2.05	for Loops	WS 2.5 Practice SC 2.18,2.23, 2.24 (4th, 5th: 2.21,2.26,2.27)	2.3 "Nested for Loops"	SC 2.19-2.21 (4th, 5th: 2.22-2.24)
2.06	nested for Loops	Practice SC 2.28-2.30 (4th, 5th: 2.31-2.33), E 2.5	2.4 "Scope" and "Pseudocode"	SC 2.26, 2.27 (4th, 5th: 2.29, 2.30),E 2.4
2.07	Scope & Pseudocode	WS 2.7 Discuss PP 2.1	Read 2.4 "Class Constants"	SC 2.31-2.33 (4th, 5th: 2.34-2.36)
2.08	Programming Project	Start PP 2.4		Outline Ch. 2 (omit 2.5)
2.08a	Programming Project	Start PP 2.4		Outline Ch. 2 (omit 2.5)
2.09	Programming Project	Complete PP 2.4		[*TBD practice question*][]
2.10	Finding & Fixing Errors	Fix HW	Review Ch. 2 (omit 2.5)	Submit questions for review
2.11	Review (Review questions)	WS 2.11 practice test		Study
2.99	(Unit 2 Test)	Test 1 Section I Test 1 Section II		

2.00

Lesson 2.00	*Test Review & Reteach*
Objectives	Students will re-learn or strengthen content knowledge and skills from Unit 1.
Assessments	Students will re-submit test answers with updated corrections for partial or full credit, depending on instructor preference.
In Class	Review test
Reading	2.1 except for "*Mixing Types and Casting*"
Homework	Test corrections

2.01

Lesson 2.01	*Basic Data Concepts*
Objectives	Students will be able to identify and categorize data types. Students will identify operators and operands, and will correctly apply rules or precedence.
Assessments	Using operator/operand expression sets, students will use rules of precedence to correctly write code that yields a given answer. Using operator/operand expression sets, students will create their own expressions and predict the output.
In Class	WS 2.1
Reading	2.2 up to "*String Concatenation*"
Homework	SC 2.1–3 (4th: 2.1, 2.3, 2.4)

2.02

Lesson 2.02	*Declaring & Assigning Variables*
Objectives	Students will be able to identify, declare, and assign variables.
Assessments	Students will write a program that converts temperature from Fahrenheit to Celsius.
In Class	WS 2.2 Practice SC 2.7, 2.11 (4th: 2.8, 2.13) E 2.1
Reading	Rest of 2.2
Homework	SC 2.5, 2.6, 2.9, 2.12–15 (4th: 2.6, 2.7, 2.10, 2.14–17)

2.03

Lesson 2.03	*String Concatenation & Increment Decrement Operators*
Objectives	Students will apply the rules of string concatenation, students will correctly interpret incrementing and decrementing statements.
Assessments	Students will evaluate statements and predict output during a game of grudgeball.
In Class	Grudgeball
Reading	Rest of 2.2
Homework	SC 2.4 (4th: 2.5)

2.04

Lesson 2.04	*Mixing Types & Casting*
Objectives	Students will be able to describe which types automatically convert into others when appearing together in expressions, and predict how an expression with mixed types will evaluate. Students will be able to convert types by casting.

Lesson 2.04	*Mixing Types & Casting*
Assessments	Students will use "*Zombie Rules*" of precedence to correctly write code that yields a given answer Students will create their own expressions & predict output by completing and trading worksheets.
In Class	WS 2.4 Poster 2.4
Reading	2.3 up to "*Nested for Loops*"
Homework	Finish WS 2.4

2.05

Lesson 2.05	*for Loops*
Objectives	Students will trace loops to predict program behavior Students will construct loops to execute simple tasks.
Assessments	Students will trace and construct loops in Practice problems.
In Class	WS 2.5 Practice SC 2.18, 2.23, 2.24 (4th: 2.21, 2.26, 2.27)
Reading	2.3 "*Nested for Loops*"
Homework	SC 2.19–21 (4th: 2.22–24)

2.06

Lesson 2.06	*Nested for Loops*
Objectives	Students will trace nested loops to predict program behavior Students will construct loops to execute simple tasks.
Assessments	Students will trace and construct nested loops in Practice problems.
In Class	Practice SC 2.28–30 (4th: 2.31–33) E 2.5
Reading	2.4 "*Scope*" and "*Pseudocode*"
Homework	SC 2.26, 2.27 (4th: 2.29, 2.30) E 2.4

2.07

Lesson 2.07	*Scope & Pseudocode*
Objectives	Students will be able to identify the scope of a variable and identify common scope errors.
Assessments	Students will complete a worksheet.
In Class	WS 2.7 Discuss PP 2.1
Reading	Read 2.4 "*Class Constants*"
Homework	SC 2.31–33 (4th 2.34–36)

2.08

Lesson 2.08	*Programming Project*
Objectives	Students will plan and construct a structured program containing nested loops.

Lesson 2.08	*Programming Project*
Assessments	Students will submit a complete, functional program by the end of next class.
In Class	Start PP 2.4
Reading	
Homework	Outline Ch. 2 (omit 2.5)

2.08a

Lesson 2.08a	*Alternative Programming Project - Lyrics*
Objectives	Students will plan and construct a structured program containing nested loops.
Assessments	Students will submit a complete, functional program by the end of next class.
In Class	Start PP 2.4
Reading	
Homework	Outline Ch. 2 (omit 2.5)

2.09

Lesson 2.09	*Programming Project*
Objectives	Students will plan and construct a structured program containing nested loops.
Assessments	Students will submit a complete, functional program by the end of next class.
In Class	Complete PP 2.4
Reading	
Homework	[*TBD practice question*][]

2.10

Lesson 2.10	*Finding & Fixing Errors*
Objectives	Students will find errors in their returned homework assignments, and correct their code.
Assessments	Students will re-submit all homework assignments with corrected answers.
In Class	Fix homework
Reading	Review Ch. 2 (omit 2.5)
Homework	Submit questions for review

2.11

Lesson 2.11	*Review*
Objectives	Students will identify weaknesses in their Unit 1 knowledge.
Assessments	Students will create a personalized list of review topics to guide tonight's study session.
In Class	Review questions WS 2.11 Practice test

Reading	
Homework	Study

2.99

Unit 2 Test	*Working with Data & Basic Control Flow*
In Class	Test 1 Section I Test 1 Section II

Abbreviations

- **WS** — Worksheet
- **SC** — Self-Check problem (in the textbook)
- **EX** — Exercise (in the textbook)
- **PP** — Programming Project (in the textbook)