Unit 8: Recursion (2 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 8 Slides
- Unit 8 Word Bank
- Curriculum Assets

LP	Title	In Class	Reading	Homework
8.00	Test Review & Reteach	Review test	12.1 up to "Structure of recursive solutions"	Test corrections
8.01	Thinking Recursively	Tower of Hanoi game	Rest of 12.1	
8.02	Writing Recursive Solutions	Grudgeball SC 12.1 - 12.4	12.2	SC 12.5, 12.7-12.9, E 12.1
8.03	Mechanics of Recursion	WS 8.3 Teacher Demo 8.3	13.4?	SC 12.6, 12.10, E 12.3
8.04	MergeSort	Implement mergeSort		SC 13.27-13.30 Notebook Check
8.05	Finding & Fixing Errors	Fix HW	Review Ch. 12.1, 12.2	Submit questions for review
8.06	Review		Study	
8.07	Quiz	Quiz 8.5	Barron's Ch. 7 (8th or later: Ch. 8)	
8.08	Quiz Review & Reteach	Review quiz		Barron's Ch. 7 (8th or later: Ch. 8)

8.00

Lesson 8.00	*Test Review & Reteach*
Objectives	Students will re-learn or strengthen content knowledge and skills from Unit 7.
Assessments	Students will re-submit test answers with updated corrections for partial or full credit, depending on instructor preference.
In Class	Review test
Reading	12.1 up to "*Structure of Recursive Solutions*"
Homework	Test corrections

8.01

Lesson 8.01	*Thinking Recursively*
Objectives	Students will be able to define recursion.
Assessments	Students will describe recursive methods and compare iterative and recursive methods during a class discussion.
In Class	Tower of Hanoi game
Reading	Rest of 12.1

Lesson 8.01	*Thinking Recursively*
Homework	

8.02

Lesson 8.02	*Writing Recursive Solutions*
Objectives	Students will be able to identify recursive methods and predict the output (or return value) of recursive methods.
Assessments	Students will evaluate statements and predict output during a game of Grudgeball.
In Class	Grudgeball SC 12.1–4
Reading	12.2
Homework	SC 12.5,7–9 E 12.1

8.03

Lesson 8.03	*Mechanics of Recursion*
Objectives	Students will be able to model how recursive methods execute.
Assessments	Students will write a recursive method, then model the execution of that method for the instructor. Students will also model a method written by their peers.
In Class	WS 8.3 Teacher Demo 8.3
Reading	13.4
Homework	SC 12.6,10 E 12.3

8.04

Lesson 8.04	*MergeSort*
Objectives	Students will use mergeSort to sort an ArrayList.
Assessments	Students will be able to use recursion to sort a list.
In Class	Implement mergeSort
Reading	
Homework	SC 13.27–30 Notebook Check

8.05

Lesson 8.05	*Finding & Fixing Errors*
Objectives	Students will find errors in their returned homework and classwork.
Assessments	Students will re-submit all homework and classwork assignments with corrected answers.
In Class	Fix homework
Reading	Review Ch. 12.1–2
Homework	Submit questions for review

8.06

Lesson 8.06	*Review*
Objectives	Students will identify weaknesses in their Unit 8 knowledge.
Assessments	Students will create a personalized list of review topics to guide tonight's study session.
In Class	Review Questions
Reading	
Homework	Study

8.07

Lesson 8.07	*Review & Quiz*
In Class	Quiz 8.5
Reading	Barron's Ch. 7 (8th or later: Ch. 8)

8.08

Lesson 8.08	*Quiz Review & Reteach*
Objectives	Students will re-learn or strengthen content knowledge and skills from Unit 8.
Assessments	Re-submit quiz answers with updated corrections for partial or full credit.
In Class	Review quiz
Reading	
Homework	Barron's Ch. 7 (8th or later: Ch. 8)

Abbreviations

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