

Advanced Placement Computer Science Principles

Unit 1 - The Internet

Ch. 1: Representing and Transmitting Information

- wk 1
 - Personal Innovations
 - Sending Binary Messages
 - Sending Messages with the Internet Simulator
 - 2
 - Number Systems
 - Binary Numbers
 - Sending Numbers
 - Sending Text
- Unit 1, Chapter 1 Assessment**

Ch. 2: Inventing The Internet

- 3
 - The Internet is for Everyone
 - The Need for Addressing Routers and Redundancy
 - 4
 - Packets and Making a Reliable Internet
 - The Need for DNS
 - HTTP and Abstraction
 - 5
 - Practice PT - The Internet and Society
- Unit 1, Chapter 2 Assessment**

Unit 2 - Digital Information

- wk 1
 - Bytes and File Sizes
 - Text Compression
 - Encoding B&W Images
 - 2
 - Encoding Color Images
 - Lossy Compression and File Formats
 - Rapid Research - Format Showdown
- Unit 2, Chapter 1 Assessment**

Unit 3 - Intro to Programming

- wk 1
 - The Need For Programming Languages
 - The Need for Algorithms
 - Creativity in Algorithms
 - 2
 - Using Simple Commands
 - Creating Functions
 - Functions and Top-Down Design
 - 3
 - APIs and Function Parameters
 - Creating Functions with Parameters
 - Looping and Random Numbers
 - 4
 - Practice PT - Design a Digital Scene
- Unit 3, Chapter 1 Assessment**

Unit 4 - Big Data and Privacy

- wk 1
 - What is Big Data?
 - Finding Trends with Visualizations
 - Check Your Assumptions
- 2
 - Rapid Research - Data Innovations
 - Identifying People with Data
- 3
 - The Cost of Free
 - Simple Encryption
 - Encryption with Keys and Passwords
- 4
 - Public Key Crypto
 - Rapid Research - Cybercrime

Explore PT Prep

- wk 1
 - Explore PT - Review the Task
 - Explore PT - Make a Plan
 - Explore PT - Complete the Task (8 total class hours)
- 2
 - Explore PT - Complete the Task (continued)

Unit 5 -Building Apps

Ch. 1: Event-Driven Programming

- wk 1
 - Buttons and Events
 - Multi-screen Apps
 - Building an App - Multi-Screen App
 - 2
 - Controlling Memory with Variables
 - Building an App - Clicker Game
- Unit 5, Assessment 1**
- 3
 - User Input and Strings
 - 3
 - If-Statements Unplugged
 - Boolean Expressions and if-Statements
 - 4
 - "if-else-if" and Conditional Logic
 - Building an App - Color Sleuth
- Unit 5, Assessment 2**

Ch. 2: Programming with Data Structures

- 5
 - While Loops
 - Loops and Simulations
 - Introduction to Arrays
 - 6
 - Building an App - Image Scroller
- Unit 5, Assessment 3**
- 6
 - Processing Arrays
 - Functions with Return Values
 - 7
 - Building an App- Canvas Painter
- Unit 5, Assessment 4**
- Unit 5, Assessment 5 - AP Pseudocode Practice**

Create PT Prep

- wk 1
 - Create PT - Review the Task
 - Create PT - Make a Plan
 - Create PT - Complete the Task (12 total class hours)
- 2
 - Create PT - Complete the Task (continued)
- 3
 - Create PT - Complete the Task (continued)

Unit 4, Chapter 1 Assessment
(optional) Data Questions