



Computer Science Discoveries - Level 7

Computer Science Discoveries (CS Discoveries) is an introductory computer science course that empowers students to create authentic artifacts and engage with computer science as a medium for creativity, communication, problem solving, and fun.

- Audience: Middle and high school students, grades 6 - 10
- Curriculum length: 40 Hours
- Prior knowledge: None! Just bring your curiosity.

CSD Unit 3 - Interactive Animations and Games

CSD Unit 4 - The Design Process

CSD Unit 3 - Interactive Animations and Games

Chapter 1: Images and Animations

Lesson 1: Programming for Entertainment
Lesson 2: Plotting Shapes
Lesson 3: Drawing in Game Lab
Lesson 4: Shapes and Parameters
Lesson 5: Variables
Lesson 6: Random Numbers
Lesson 7: Sprites
Lesson 8: Sprite Properties
Lesson 9: Text
Lesson 10: Mini-Project - Captioned Scenes
Lesson 11: The Draw Loop
Lesson 12: Sprite Movement
Lesson 13: Mini-Project - Animation
Lesson 14: Conditionals
Lesson 15: Keyboard Input
Lesson 16: Mouse Input
Lesson 17: Project - Interactive Card

Chapter 2: Building Games

Lesson 18: Velocity
Lesson 19: Collision Detection
Lesson 20: Mini-Project - Side Scroller
Lesson 21: Complex Sprite Movement
Lesson 22: Collisions
Lesson 23: Mini-Project - Flyer Game
Lesson 24: Functions
Lesson 25: The Game Design Process
Lesson 26: Using the Game Design Process
Lesson 27: Project - Design a Game



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CSD Unit 4 - The Design Process

Chapter 1: User Centered Design

- Lesson 1: Analysis of Design
- Lesson 2: Understanding Your User
- Lesson 3: User-Centered Design Micro Activity
- Lesson 4: User Interfaces
- Lesson 5: Feedback and Testing
- Lesson 6: Identifying User Needs
- Lesson 7: Project - Paper Prototype

Chapter 2: App Prototyping

- Lesson 1: Designing Apps for Good
- Lesson 2: Market Research
- Lesson 3: Paper Prototypes
- Lesson 4: Prototype Testing
- Lesson 5: Digital Design
- Lesson 6: Linking Screens
- Lesson 7: Testing the App
- Lesson 8: Improving and Iterating