

Unit 3 - Interactive Animations and Games ('21-'22) Resources

Lesson 1: Programming for Entertainment

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

For the students

- [CS in Entertainment](#) - Activity Guide

Prep

- Review the research resources linked in Code Studio
- Print a copy of the activity guide for each group of three students

Lesson 2: Plotting Shapes

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

For the students

- [Drawing Shapes \(Version A\)](#) - Activity Guide
- [Drawing Shapes \(Version B\)](#) - Activity Guide

Prep

There is no prep for this lesson.

Lesson 3: Drawing in Game Lab

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Drawing Shapes](#) - Resource

For the students

- [Drawing in Game Lab - Part 1](#) - Video ([Download](#))
- [Drawing in Game Lab - Part 2](#) - Video ([Download](#))

Prep

- Read the Forum
- Prepare projector or other means of showing videos if you wish to watch as a class

Lesson 4: Shapes and Parameters

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Shapes and Parameters](#) - Resource ([Download](#))
- [Shapes and Parameters](#) - Resource

Prep

- Review the level sequence in Code Studio

Lesson 5: Variables

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Naming Variables](#) - Resource
- [Variables](#) - Resource

For the students

- [Introduction to Variables](#) - Video ([Download](#))

Prep

- Review the level progression in Code Studio

Lesson 6: Random Numbers

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Random Numbers](#) - Resource

Prep

Review the level progression in Code Studio

Lesson 7: Sprites

Resources

For the teachers

- [Animation Tab](#) - Resource
- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Sprites](#) - Resource

For the students

- [Introduction to Sprites](#) - Video ([Download](#))
- [The Animation Tab](#) - Video ([Download](#))

Prep

- (Optional) Print a copy of the activity guide for each student

Lesson 8: Sprite Properties

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Sprite Properties](#) - Resource

Prep

There is no prep for this lesson.

Lesson 9: Text

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

Prep

There is no prep for this lesson.

Lesson 10: Mini-Project - Captioned Scenes

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

For the students

- [Captioned Scenes](#) - Rubric
- [Sprite Scene Planning](#) - Activity Guide

Prep

There is no prep for this lesson.

Lesson 11: The Draw Loop

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Flipbook Example - by Marnic Bos](#) - Video
- [Random Dot Flipbook](#)
- [Random Sprite Flipbook](#)
- [The Draw Loop](#) - Resource

For the students

- [Introduction to the Draw Loop](#) - Video ([Download](#))

Prep

- Print and assemble the manipulatives
- Prepare the video

Lesson 12: Sprite Movement

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [The Counter Pattern](#) - Resource

For the students

- [Sprite Movement](#) - Video ([Download](#))

Prep

There is no prep for this lesson.

Lesson 13: Mini-Project - Animation

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

For the students

- [Animated Scene](#) - Rubric
- [Animated Scene](#) - Activity Guide

Prep

There is no prep for this lesson.

Lesson 14: Conditionals

Resources

For the teachers

- [Booleans and Comparison Operators](#) - Resource
- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [If Statements](#) - Resource

For the students

- [Boolean Expressions](#) - Video ([Download](#))
- [Conditional Statements](#) - Video ([Download](#))

Prep

There is no prep for this lesson.

Lesson 15: Keyboard Input

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

Prep

There is no prep for this lesson.

Lesson 16: Mouse Input

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [If-Else Statements](#) - Resource

For the students

- [If/Else Statements](#) - Video ([Download](#))

Prep

There is no prep for this lesson.

Lesson 17: Project - Interactive Card

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Extra Code in Challenge Levels](#) - Resource

For the students

- [Computer Science Practices](#) - Reflection
- [Interactive Card](#) - Project Guide
- [Interactive Card](#) - Peer Review
- [Interactive Card](#) - Rubric
- [Interactive Card - Student Checklist](#)

Prep

- Read the Forum
- Print out a copy of the project guide for each student

Lesson 18: Velocity

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Velocity](#) - Resource

For the students

- [Velocity](#) - Video ([Download](#))

Prep

There is no prep for this lesson.

Lesson 19: Collision Detection

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Collision Detection](#) - Resource

For the students

- [Collision Detection \(Version A\)](#) - Activity Guide
- [Collision Detection \(Version B\)](#) - Activity Guide

Prep

- Print copies of the activity guide such that each pair of students has a part A and a part B

Lesson 20: Mini-Project - Side Scroller

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

For the students

- [Side Scroller](#) - Rubric
- [Side Scroller](#) - Project Guide

Prep

There is no prep for this lesson.

Lesson 21: Complex Sprite Movement

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Velocity and the Counter Pattern](#) - Resource

Prep

There is no prep for this lesson.

Lesson 22: Collisions

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

Prep

There is no prep for this lesson.

Lesson 23: Mini-Project - Flyer Game

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

For the students

- [Flyer Game](#) - Rubric
- [Flyer Game](#) - Project Guide

Prep

There is no prep for this lesson.

Lesson 24: Functions

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Functions](#) - Resource

For the students

- [Functions](#) - Video ([Download](#))

Prep

There is no prep for this lesson.

Lesson 25: The Game Design Process

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

For the students

- [Defender Game](#)

Prep

- Print copies of the the project guide if you will be giving students physical copies. Please note that this project guide is intentionally filled out. (See notes in Lesson Plan.)

Lesson 26: Using the Game Design Process

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides

For the students

- [Planning Your Platform Game](#)

Prep

- Print one copy of the project guide for each student or pair of students

Lesson 27: Project - Design a Game

Resources

For the teachers

- [CSD Unit 3 - Interactive Animations and Games](#) - Slides
- [Extra Code in Challenge Levels](#) - Resource

For the students

- [Computer Science Practices](#) - Reflection
- [Make Your Own Game](#) - Project Guide
- [Make Your Own Game](#) - Peer Review
- [Make Your Own Game](#) - Rubric
- [Make Your Own Game - Student Checklist](#)

Prep

- Print copies of the project guide, one for each student / pair of students
- Print copies of the rubric, one for each student / pair of students
- Print copies of the peer review guide, one for each student / pair of students
- Review sample games in Code Studio

Lesson 28: CS Discoveries Post-Course Survey

Resources

There are no resources for this lesson.

Prep

There is no prep for this lesson.