

Lesson 8: Sprite Properties

Overview

Question of the Day: How can we use sprite properties to change their appearance on the screen?

Students extend their understanding of sprites by interacting with sprite properties. Students start with a review of what a sprite is, then move on to Game Lab to practice more with sprites, using their properties to change their appearance. They then reflect on the connections between properties and variables.

Purpose

In the last lesson, when students were introduced to sprites, they focused mainly on creating a sprite and assigning it an animation. This lesson starts to dig into what makes sprites such a powerful programming construct--that they have properties that can be modified as a program is running. This lays the foundation for much of what students will be doing in the rest of the unit in terms of accessing and manipulating sprite properties to create interesting behaviors in their programs.

Assessment Opportunities

Use dot notation to update a sprite's properties

See Code Studio level 5.

Standards

Full Course Alignment

CSTA K-12 Computer Science Standards (2017)

► **AP** - Algorithms & Programming

Agenda

Lesson Modifications

Warm Up (5 minutes)

Activity (35 minutes)

Wrap Up (5 minutes)

Teaching Guide

Objectives

Students will be able to:

- Use dot notation to update a sprite's properties

Links

Heads Up! Please make a copy of any documents you plan to share with students.

For the teachers

- **CSD Unit 3 - Interactive Animations and Games** - Slides
- **Sprite Properties** - Resource

Vocabulary

- **Property** - A label for a characteristic of a sprite, such as its location and appearance

Introduced Code

- `rotation`
- `scale`
- `x`
- `y`

Lesson Modifications



Attention, teachers! If you are teaching virtually or in a socially-distanced classroom, please **click here** to access modifications that can be used during this lesson.

Warm Up (5 minutes)

Prompt: What is your definition of a sprite? What sprite properties do you know how to use? What other sprite properties might be useful?

Allow students time to reflect on their own and then with a partner before sharing out to the entire group. It's okay if students do not have a canonical definition of a sprite, but they should recognize that a sprite is a part of the program that has several different properties that control its location and appearance.

Remarks

So far, we've only been able to control our sprite's location and animation, but today, we're going to learn how to update other sprite properties so we can make even better programs.

Question of the Day: How can we use sprite properties to change their appearance on the screen?

Activity (35 minutes)

Group: Put students in pairs.

Transition: Send students to Code Studio.

 1

Prediction

 2-3

Skill Building

2

3

 4

Practice

 5

Assessment

✓ Assessment Opportunity ▲

You can use this level as a formative assessment for students. Click inside the level to view a rubric and leave feedback to your students

Wrap Up (5 minutes)

Question of the Day: How can we use sprite properties to change their appearance on the screen?

Journal Prompt: What is one way sprite properties are the same as variables? What's one way that sprite properties are different from variables?

Discuss: Allow students to discuss in pairs or small groups before sharing out to the entire group.

Discussion Goal

Students may note that sprite properties and variables are similar in that they both store information. They are different in that variables can be anything, but sprites have particular properties that are used in certain ways on the screen.