

Lesson 1: Programming for Entertainment

Overview

Question of the Day: How is computer science used in entertainment?

Students are asked to consider the "problems" of boredom and self expression, and to reflect on how they approach those problems in their own lives. From there, students will explore how computer science in general, and programming specifically, plays a role in either a specific form of entertainment or as a vehicle for self expression.

Purpose

This lesson is intended to kick off this programming unit in a way that engages students of all backgrounds and interests. Though the end point of this unit asks students to develop a game, you should avoid starting out with a strong emphasis on *video* games. Instead, we attempt to broaden students' perspective about how programming is relevant to a form of entertainment or self expression that is personally engaging. This will provide an anchor for students to come back to throughout the unit as they consider the potential applications of the various programming skills that they learn.

Assessment Opportunities

1. Identify how computer science is used in a field of entertainment

In the activity guide, look at the "Interesting Fact or Use" section of the second page and make sure students have identified a use of computer science in their chosen fields.

Standards

Full Course Alignment

CSTA K-12 Computer Science Standards (2017)

- **IC** - Impacts of Computing

Agenda

Lesson Modifications

Objectives

Students will be able to:

- Identify how computer science is used in a field of entertainment

Preparation

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

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

For the students

- **CS in Entertainment** - Activity Guide

Warm Up (5 minutes)

The Entertainment Problem

Activity (35 minutes)

CS in Entertainment

Researching your Topic

Research Notes

Exploring Games with Game Lab

Wrap Up (5 minutes)

Looking Forward

Teaching Guide

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)

The Entertainment Problem

Prompt: What is your favorite form of entertainment, and what problem does it solve for you?

Discuss: Allow students to share out their ideas with the group.

Discussion Goal

The goal here is to get students to reflect more critically on *why* people seek out entertainment. Students are likely to come up with "boredom" as a common answer, but push them to think more deeply about what their chosen form of entertainment actually does for them - what problem does it solve. Potential answers include:

- Connection with others
- Learning or experiencing new things
- Sparking creativity
- An escape from reality

Question of the Day: How is computer science used in entertainment?

Activity (35 minutes)

CS in Entertainment

Remarks

Whether it's movies, music, art, games, or any number of other options, we have many types of entertainment open to us. Today, we're going to look at how computer science plays a role in some of

these different fields.

Group: Place students in groups of three. Consider allowing students to group based on common interest as each group will be exploring a field of entertainment together.

Distribute: Give each group a copy of the activity guide.

Entertainment Exploration

During this activity student groups will do some light research into the role that CS and programming play in various fields of entertainment. The primary goal of this activity is to broaden students' perspectives about how programming can be used to make fun or entertaining things. Some of the fields that students could research (such as art, animation, and games) can be directly connected to programs they will write later in this unit, while others may serve more as an inspiration for how the skills that they learn here may be applied in different domains.

Topics

In the activity guide there are a number of potential fields for research. These specific fields were chosen to go along with resources that are provided on Code Studio, but you can have students look into other fields if they wish.

Researching your Topic

Here are a few sites to get students started. These sites are generally appropriate for school, but the content with them changes frequently, so **we strongly suggest that you check each site for inappropriate content before sharing it with students.**

- **Inside the Magic - insidethemagic.net:** This site is focused on news about Disney, but you might be surprised by the large role that CS plays in all of their different forms of entertainment. Because this isn't a CS focused site, you'll need to use the search function to find relevant articles.
- **Critical Path Videos - criticalpathproject.com/explore/playlists/:** Videos featuring a range of people working in diverse areas of the game industry, talking about what they do.
- **Music Think Tank - musicthinktank.com:** Music Think Tank is a blog targeted at people working in the music industry. It's not a CS specific site, but searching for "computer science" or "programming" will reveal some interesting articles.
- **Creative Coding Podcast - creativecodingpodcast.com:** While this podcast doesn't feature much in the way of formal professional programming (as in, people who do this for a living), it is a great resource to see the varied ways in which amateurs are making entertainment with code.

Teaching Tip

Because many of these sites change their content daily, we have not shared them directly with students. We suggest that you check these links the morning before class to ensure that everything is still appropriate to be shared in school.

Research Notes

Circulate As students search the web, they may need support in staying focused on the research task. The goal of this exploration is twofold:

- First, develop a deeper understanding of how programming is used in the chosen field. How is computer technology changing this field, and what are some of the problems that people are trying to solve with technology?

- Second, identify some interesting applications of CS or facts to share. What are some cool things that people are doing in this field that make use of CS?

Interesting Information

Once groups have learned a bit about how CS is used in their chosen field, they can complete the second page of the activity guide, which asks them to do the following:

- **What Problem Does It Solve?:** "Problem" in this context can be fairly broad. It might be simplifying an otherwise laborious or complex task, doing things that wouldn't otherwise be possible, or any number of things that make this form of entertainment more accessible to end users.
- **How is it an Improvement?:** This could be tightly coupled with the answer to the previous question. Push students to consider how their form of entertainment was created before programming was prevalent.
- **An Interesting Fact or Use:** Share something fun or interesting about how CS is used in this field.
- **An Open Question:** It's likely that students come away with more questions than answers after just some quick research. Encourage them to reflect on what they don't yet know, and what questions they'd still like answered.

Share: Give groups a minute each to share their findings.

Exploring Games with Game Lab

Remarks

In this unit, we're going to have a chance to create our own entertainment through animations and games using a tool called Game Lab. Here are some samples of programs made using the Game Lab tool.

Display: Show either as a whole class, or let students explore independently, the example programs at the end of this lesson's Code Studio progression. These programs are designed to show a variety of different kinds of programs that it's possible to make in Game Lab.

Teaching Tip

While some of these examples are pulled directly from lessons that students will complete later in the unit, a few of them use commands or techniques that aren't explicitly covered in the course. You can view the source for all of these programs in order to support students who may want to incorporate some of these techniques later on.



1-4

Sample Programs

1

2

3

4

Wrap Up (5 minutes)

Looking Forward

Question of the Day: How is computer science used in entertainment?

Journal: Based on what you saw today, both in your research and the example apps, what kinds of programs are you most interested in learning to create?