Lesson 1: Dance Party: AI Edition

60 minutes

Overview

In this activity, learners of all ages get an introductory experience with coding and artificial intelligence in a safe and creative environment. This lesson has been designed for learners of all ages but does require reading. This activity requires students to play sound, as the tutorial was built to respond to music.

Purpose

Making coding an exciting and enjoyable experience is essential in cultivating interest in computer science. This lesson is filled with moments of joy, where students use code to choreograph a dance spectacle of color and movement using simple drag-and-drop coding blocks. Students will be introduced to an A.I. Bot that they will direct to help find the perfect effects to match the mood of their dance.

Agenda

Objectives

Students will be able to:

- Reflect on how computers can contribute to creative processes.
- Use core coding concepts to program interactive elements that respond to user input, such as keystrokes and timed events.
- Utilize A.I. to select and generate appropriate special effects based on chosen emojis to enhance the visual experience of their dance party.

Preparation

How to Plan Your Hour of Code

Find the resources you need to plan, implement, and celebrate the Hour of Code at your school **here**!

Vocabulary

- **Artificial Intelligence (A.I.)** - A computer program that takes in data, learns patterns from that data, and then makes decisions based on what it has learned.
- **Code** - (v) to write code, or to write instructions for a computer.
- **Event** - An action that causes something to happen.
- **Program** - An algorithm that has been coded into something that can be run by a machine.

Teaching Guide

Getting Started

Music Filtering

This tutorial features songs from popular artists. To get a preview of the song list in this tutorial, check out this Spotify Playlist (all ages) . We are using radio-safe versions of all songs and for students under 13.

General Support

As a teacher, your role is primarily to support students as they make their way through the tutorial. Here are a few tips that should help students regardless of the level they're working on.

- **Collaborate with Neighbors:** Encourage students to check in with a neighbor when they're getting stuck. Since this tutorial includes videos and students may be wearing headphones it can easily become isolating. Help break those barriers by actively pairing students if they seem like they need help. Depending on the age and ability of your students, you might consider formally breaking your class into pairs to complete the tutorial using pair programming.
- **Read the Instructions:** The instructions provide steps to complete the level. .
- **Stuck? Look for hints:** Each level includes a hint with further details about how to pass the level. If students are trying to pass levels as quickly as possible, they might find they just need to wait a certain amount of time for all of the code to play out before moving on.
- **Move On and Come Back:** Sometimes students will benefit more from coming back to a tricky level. All levels are independent of one another, though they sometimes rely on previously introduced concepts.
- **Take your time and experiment.** There are explicit instructions and hints to help students pass each level. In addition to passing, students should also feel free to try out their own ideas by experimenting with different dancers, dance moves, effects, and songs.

Teaching Tip

To build background knowledge about Artificial Intelligence and/or to extend learning, check out the videos, lessons, and professional learning opportunities on our **Creativity with AI page**.

If you have time and would like to prepare your students with an unplugged activity, consider delivering **Dance Party: Unplugged** before your Hour of Code event. This brief lesson introduces students to the idea of events triggering different dance moves.

Warm Up (5 minutes)

Remarks

> Today, we're going to do something really creative with code! “Code” is a set of directions that a computer can understand. Before we get started, what are some ways that you like to be creative or express yourself?

Encourage students to share the ways they express creativity, such as with art, dance, music, and writing.

Remarks

> Just like choosing which paint colors to use or words you write with are ways of expressing creativity. Choosing what code you write and how people interact with it can be an opportunity to express your creativity too! In this creative coding activity, you will be introduced to a new, helpful tool: Artificial Intelligence, also known as AI! AI is a computer program that works like a human's brain. The A.I. Bot in this activity can help you by making choices for the special effects very quickly.

Discuss: How do you think computers and robots can help us be more creative?

Discussion Goal: Students should start to think about ways that AI could be helpful in the creative process. Some ideas might include:

- **Idea generation:** AI can help come up with new and exciting ideas for stories, drawings, and other creative projects when you're feeling stuck.
- **Artistic Inspiration:** AI can suggest colors, styles, and themes for your artwork, giving you inspiration for your next masterpiece.
- **Collaboration:** AI can be a creative partner, helping you brainstorm and collaborate with others on projects.

Activity (50 minutes)

Intro to Dance Party

In this video, students will see an example of creative coding in the real world to help inspire them to code their own interactive dance party. This video also explains the different elements of their coding platform like the Instruction Panel, the Workspace, the Toolbox, and the Playspace.

1 **Intro Video**

Let's dance

This level requires students to make a new dancer with one block of code and make that dancer do a dance move with a second block of code. Encourage students to use the dropdown menus to explore different dancers, dance moves, and songs.

2 **Make Dancer & Dance Move**

Use AI to generate special effects

In these three levels, students are introduced to the new A.I. block. There are two videos that accompany these levels. Encourage students to re-watch these videos if they are feeling stuck. To pass these levels, students prompt AI to generate code for colorful effects to go with their dance party. Encourage students to choose three emojis that describe the mood they want to convey for their dance party.

3-5 **Use AI**

3 4 5

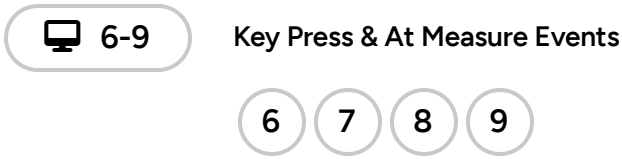
Teaching Tip

Embedded videos will overlay on the level the first time a user opens the level. Students can close out of it once they're done watching. If they would like to watch the video again, it will be available under the "run" button.

Code events to add interaction

Now, students are introduced to events. This is the trickiest coding concept in this tutorial. Events are special. They don't connect to the setup block, but instead are mini programs on their own. Think of an event as a listening ear that will execute whatever code is under it when it is triggered. The first events students use are `when arrow pressed` events that will allow students to trigger new chunks of code by pressing a key on their keyboard. The second event is the `at measure` event that works more like a timer on a clock. When the song has run for a specified amount of measures, the new code will be triggered.

Encourage students to rewatch the videos on events that accompany two of these levels.



Get creative!

This last level is meant to be a space for free play and exploration. Encourage students to get creative and to practice their new coding skills to make a dance party of their own!

Wrap Up (5 minutes)

Debrief

Build on their positive experience with coding.

Discuss:

If this is their first time coding, ask:

- What is something you enjoyed about today's activity? or
- "How did you usecreativity and computer science today?

If your students have coded before, ask:

- What is one new thing you coded today that you hadn't done before?

Then, **reflect on the process of using A.I.** to assist them in their coding:

- Do you think it's better to create things all by yourself, or is it more fun to work together with a computer or robot? Why?
- What are some cool ways A.I. could be used in schools to help students be more creative?
- Can you think of a fun story or drawing that you'd like a computer to help you create? How could it assist you?

After the Activity

Celebrate

Explain that you are spending one hour coding today because this week is CS Education Week, and millions of other students across the globe have also been learning one Hour of Code this week. Congratulate students on being part of this worldwide movement.

Give each student a **certificate** with his or her name on it.

Next Steps

Let students know that if they enjoyed today's activity, they have many options for continuing to code. Encourage students to visit code.org/learn for a list of options, or, if you're planning any of the extension activities that follow, tell students what's coming next in your classroom.

Go Viral

The Hour of Code is about creativity, and we can't wait to see what you create! Please share student creations, photos, and videos on social media! Teachers, record your classroom coding a dance, or dancing the dance.

Be sure to include #HourOfCode and tag us on Facebook, Twitter and Instagram. Bonus points for tagging the artist whose music your students used. Code.org will re-share our favorite posts to our millions of followers.

Of course, make sure to respect your school's social media policy.