Lesson Plan | Create your own Google Logo

Overview

In this activity, students program and design their own Google logo. This activity introduces students to computer science and the programming language Scratch. It is appropriate for students ages 9-14 and takes 15-60 minutes to run.

Prep	Topics Introduced
- Turn on computers. - Ensure computers have internet access to g.co/csfirst/logo and a Scratch starter project. - Place 1 pair of headphones at each computer. Students will need headphones to watch the videos.	- Events - Sequencing - Loops

Not enough computers? See the additional resources.

Schedule			
	Agenda	Duration	Description
1	Introduction	4 min	Learn about coding using Scratch.
2	Transition to Computers	2 min	Go to the website: g.co/csfirst/logo. Watch the introductory video. Open a starter project. Return to CS First to choose an add-on video.
3	Choose and Watch Videos	15-60 min	Watch as many videos as you like to create your logo.
4	Activity Wrap Up	4 min	Show off your work, and reflect on what you made.

Agenda
Introduction (4 minutes)

Directions

1. Introduce the activity, and present an [example project](). Consider showing a few Doodles from https://www.google.com/doodles to help inspire your students.

   > In this activity, you will program and design your own Google Doodle. Doodles are special logos that appear on the Google homepage. They celebrate: holidays, anniversaries, and the lives of famous artists, pioneers, and scientists. You could design and program a logo about your interests, like a favorite sport or activity, or create one about a famous person or holiday.

2. Describe the programming language Scratch.

   > To do this, you'll use the programming language Scratch. When you program, or code, you provide instructions for the computer to follow. Many programmers write code in text, meaning that they type it out on the keyboard. With the Scratch language, you code using blocks that snap together like puzzle pieces.

Transition to Computers (2 minutes)

Directions

1. Tell students to go to [g.co/csfirst/logo](), and begin watching the first video. After watching the first video, students should open a starter project, and return to CS First to select an add-on video.

   > To start, open an internet browser and go to [g.co/csfirst/logo](). Once there, plug in your headphones, and begin watching the "Create your own Google logo" introductory video. After you watch the introductory video, open one of the starter projects linked next to the video. This will open Scratch in a new tab. Then, return to CS First to select a video and follow the instructions to create your logo.

Choose and Watch Videos (15-60 minutes)

Directions

- After releasing students to work, walk around and ensure that students made it to [g.co/csfirst/logo]() and have begun to watch. At the conclusion of the video, students should open a starter project in a new tab, and sign in. Some students may move on to an add-on video without opening the Scratch project. If you notice that a student is watching any video other than the introduction and doesn't have a tab with Scratch open, instruct them to open the starter project. Then, they can return to the add-on video.
- Use the add-on solutions below to help students get unstuck.

Solutions

Change Color

1. Select a sprite to program.
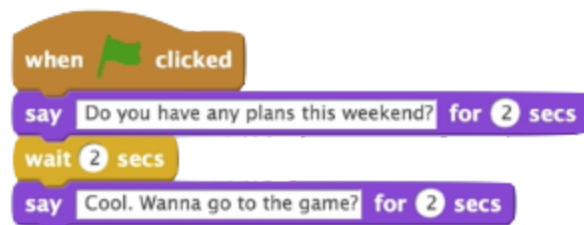2. Add "change effect" and "When key pressed" blocks.

For any sprite:

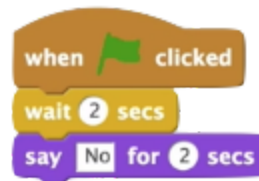when [o ▼] key pressed
change [color ▼] effect by (25)

Say Something

1. Select a sprite to begin talking.
2. Add a "say for 2 seconds" and "When Flag clicked" block.
3. Select a second sprite to talk, and add a "When flag clicked," "Wait," and "Say for 2 seconds" block.
4. Continue to add "say" and "wait" blocks to make the sprites talk to each other and continue the story.

For any sprite:

when 🚩 clicked
say [Do you have any plans this weekend?] for (2) secs
wait (2) secs
say [Cool. Wanna go to the game?] for (2) secs

For a different sprite:

when 🚩 clicked
wait (2) secs
say [No] for (2) secs

Switch Costume

1. Select a sprite to program.
2. Add "next costume," "repeat," and "wait" blocks.
3. Add an event, like "when this sprite clicked."
4. Copy this code to other sprites..

For any sprite:

when this sprite clicked
repeat (14)
    next costume
    wait (.25) secs
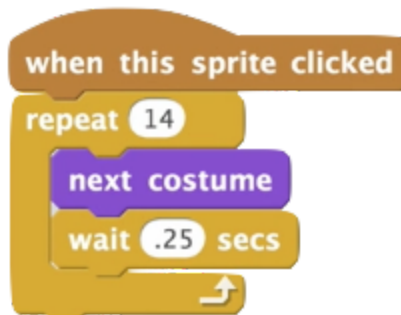
Add Backdrop

1. Select a backdrop from the library, or add an image from the internet.

No code for this add-on.

Edit, Draw, or Add Letters

1. Experiment with ways to edit, draw, and add sprites to the logo.

No code for this add-on.

Jumble Letters

1. Select a sprite.
2. Add "go to" and "when flag clicked" blocks to set an ending position.
3. Add "go to random position" and "wait" blocks to move the sprite.
4. Add a "repeat" block to repeat this action.
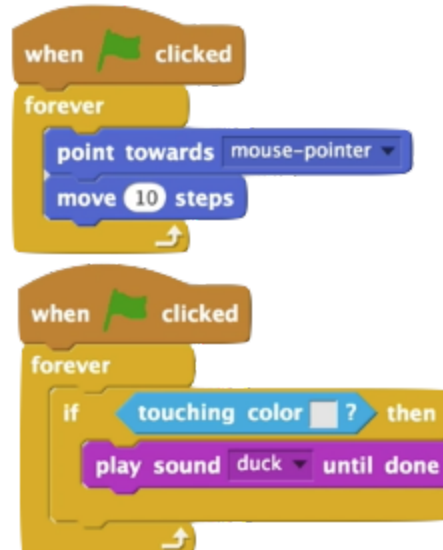5. Copy this code to the other sprites, and replace the "go to" blocks.

For any sprite:
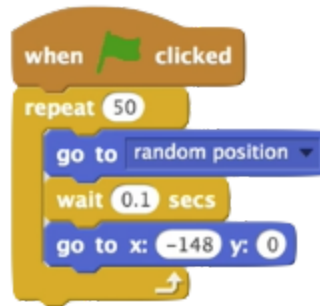
Chase

1. Select a sprite.
2. Inside a forever loop, add a "point towards" and "move" block.
3. Inside another forever loop, add an "if," "touching color," and "play sound until done" block.
4. Add a "when flag clicked" block to both block stacks.

For any sprite:

Spin

1. Select a sprite to program.
2. Add a "turn" and "repeat" block.
3. Add a "point in direction" block.
4. Add an event, like "when this sprite clicked."
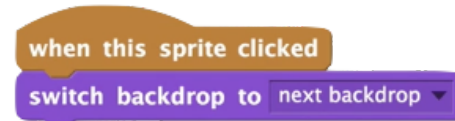5. Copy this code to other sprites.

For any sprite:

```
when this sprite clicked
repeat 24
    turn ↻ 30 degrees
point in direction 90▾
```

Change Scene

1. Add backdrops to the project.
2. Add a new sprite.
3. Add a "when sprite clicked" and "change backdrop to" block.
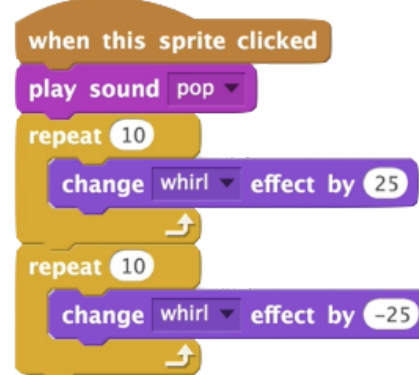4. Change the value to "next backdrop"

For any sprite:

```
when this sprite clicked
switch backdrop to next backdrop ▾
```

Dance Whirl

1. Select a sprite to program.
2. Select a sound from the "sounds" tab.
3. Add a "play sound" block.
4. Add two "repeat 10" blocks and two "change effect" blocks
5. Change the values to "whirl." Make one whirl a positive value, and one a negative value.
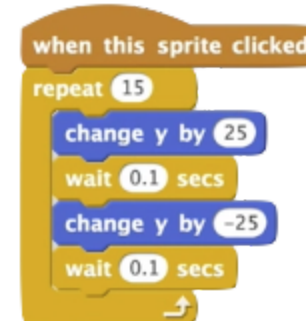6. Copy this code to other sprites.

For any sprite:

```
when this sprite clicked
play sound pop ▾
repeat 10
    change whirl ▾ effect by 25
repeat 10
    change whirl ▾ effect by -25
```

Bouncing Sprites

1. Select a sprite to program.
2. Add "change y by 10," "wait," and "change y by negative 10" blocks.
3. Add a "repeat" block around this stack.
4. Add an event, like "when this sprite clicked."
5. Copy this code to other sprites.

For any sprite:

```
when this sprite clicked
repeat 15
    change y by 25
    wait 0.1 secs
    change y by -25
    wait 0.1 secs
```

1. Select a sprite.
2. Add a "repeat" and "Change effect by" block. Change the value in the "change effect by" block to "ghost."
3. Add a "clear graphic effects" block.
4. Select a sound from the sounds tab, and add a "play sound" block to the top of the block stack.
5. Add an event, like "when key pressed."
6. Copy this code to other sprites.

For any sprite:
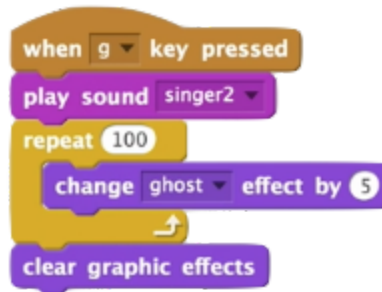
Create an Account to Save and Share Your Project

1. Click "remix" and "join Scratch."
2. To share a project, click "share" after verifying the account.

No code for this add-on.

Activity Wrap Up (4 minutes)

Directions

1. Ask students to share their projects with a neighbor, or do a whole class gallery walk. If you'd like students to save their projects, instruct them to watch the "Create an Account to Save and Share your Project" add-on.

2. Discuss the activity whole class.

   Let's discuss what you learned during this activity:
   - Tell me about the program you made today.
   - What was your favorite part of this activity?
   - What did you learn about coding?
   - What was the most challenging part of this activity?

Additional Resources (optional)

Don't have a computer for each student? Here are some ideas of how you can still use "Create your own Google logo" with your students:
- **Pair or group students**. Assign one student as the "driver" who controls the computer and one as the "instructor" who describes what to do. Switch roles every five minutes.
- **Whole class**. Project the activity and videos on a screen where all students can see. After watching the Introduction video, have the class vote on an add-on video to watch together. Then have a few student volunteers try out what they learned in front of the group while having others help. Repeat so that all students get a chance to code.

- **Station rotation**. If you have a computer station in your classroom, allow students to rotate to the computers to complete the activity. For the rest of the students, consider using resources such as the ones available on csunplugged.org.