CANADA LEARNING CODE

Doodle 4 Google

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Duration: 1 hour

LEVEL	SUBJECTS	PROVINCES / TERRITORIES	TOOL
Grades 1-3, 4-6	Art, Science and Technology	Across Canada	Scratch

Overview

In this lesson, learners will brainstorm and code a Canadian-themed Google Doodle. They will create paper doodles, then design their doodle in Scratch and program it to dance to a beat.

Prep Work

- Print the **Solution Sheet** for Activity 3: bit.ly/doodle4google-solution (see below)
- You will need some basic arts supplies to run the brainstorm activities including: markers, pencils, large paper, other drawing tools.

Lesson

This lesson was built in partnership with Google Canada.

Google

Create a Doodle 4 Google in celebration of Canada's 150th birthday!

Key Coding Concepts

- Events
- Sequence
- Loops

Terminology

Events
One thing causing another thing to happen i.e. 'when clicked' block

Sequence
Identifying a series of steps for a task. Computers and Scratch read and perform commands in order from top to bottom

Loops
Running the same sequence multiple times i.e. repeat or forever blocks

Curricular Connections

- Have students review past Google Doodles. (google.com/doodles)
- Think about design
    - Constraints
    - Inspiration
    - Opportunities

Students learn processes, materials, technologies, tools, and techniques to support creative works.

Activity 1

In groups of 6, have students brainstorm a theme that they will use across their team doodle. These themes could include: Canada's history, Canada today, Canadian foods, Canadian animals, Canadian technology, Canadian innovation, etc.

Students will play a game that is traditionally called 'Exquisite Corpse' where they will each add a letter drawing inspired by their theme to their doodle.

- Have students fold a sheet of paper into 6 even parts (a larger sheet of paper may be best).
- Students should decide the order they want to go in from 1-6.
- Students will draw a letter on the sheet then fold it to hide their letter from the next person.
- Have the first student draw their doodle just for the letter 'G', the second 'O', third 'O', fourth 'G', and so on until the group has drawn Google.
- Once every student has drawn a letter, have the group unfold the paper to look at their completed doodle.

Have the small groups reflect on what they liked about the activity, what they noticed (are there similarities in some of the drawings?), and what they think they will change when creating their own original doodles.

Activity 2

- Watch these two videos to get students inspired to doodle.
    - **Imagine:** bit.ly/doodle4google-imagine
    - **Create:** bit.ly/doodle4google-create
- Using any materials available have students individually create a doodle.
    - This could include: clay, paint, pencils, or any other materials that allow them to express their inner artist.

Activity 3: Scratch Code Along

- Open up a new Scratch project at scratch.mit.edu and click on “create” (top, left corner).
- Point out the main elements: Stage, Sprites, and Scripts (especially the “sounds” category). Demonstrate how to drag and connect blocks.
- Give learners a few minutes to click on blocks and explore.
- Go through 1-2 challenges with the group, where learners are tasked with trying to make something happen in Scratch. For example, “Try to make Scratch move” or “Try to make Scratch say something when the space key is pressed” (See the **Code-Along Challenges doc** (bit.ly/scratch-challenge-solutions-doc) for more examples and solutions)

Work Session

Open the **starter project** (bit.ly/google-doodle-starter) and review the Sprites and backgrounds.

Have learners open the starter project on their screens and click "REMIX." (The remix button will only be visible once they are signed into their accounts.)

Use the **Solution Sheet** (bit.ly/doodle4google-solution) to guide learners through the following steps:

- Design your letter
- Animate your letter
- Finish your design

Assessment

Hold a doodle gallery so students can take turns presenting their work to their peers and seeing the works of their classmates.

Have students explain why they chose the drawing technique they did, what inspired them, what theme they had in mind, how they made their letters fit/or differ in style.

Extensions

Extend the song the letters are dancing to or add in different layered instruments as the letters dance.

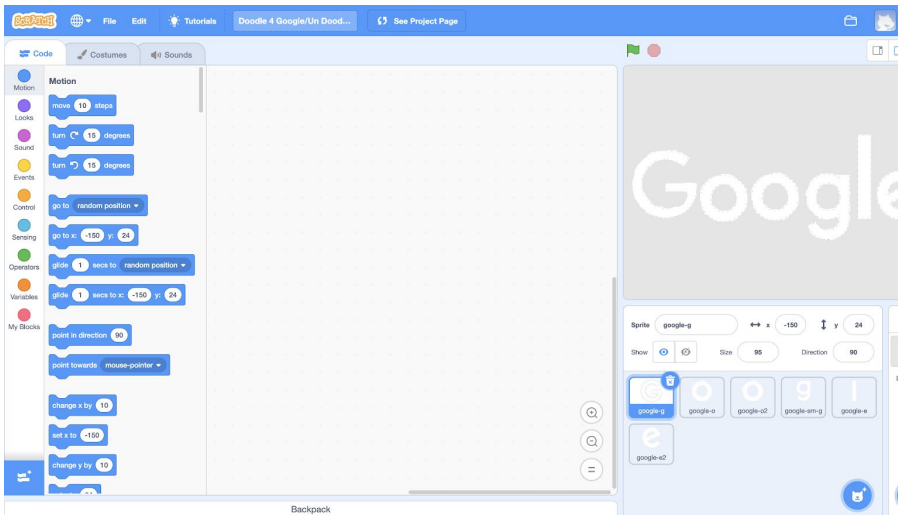
Have students extend their drawings by creating a custom background.

Create a “coding train” where learners complete part of the doodle, then share it with another student and have them remix + continue, then pass on to another student to do the same.

Doodle 4 Google

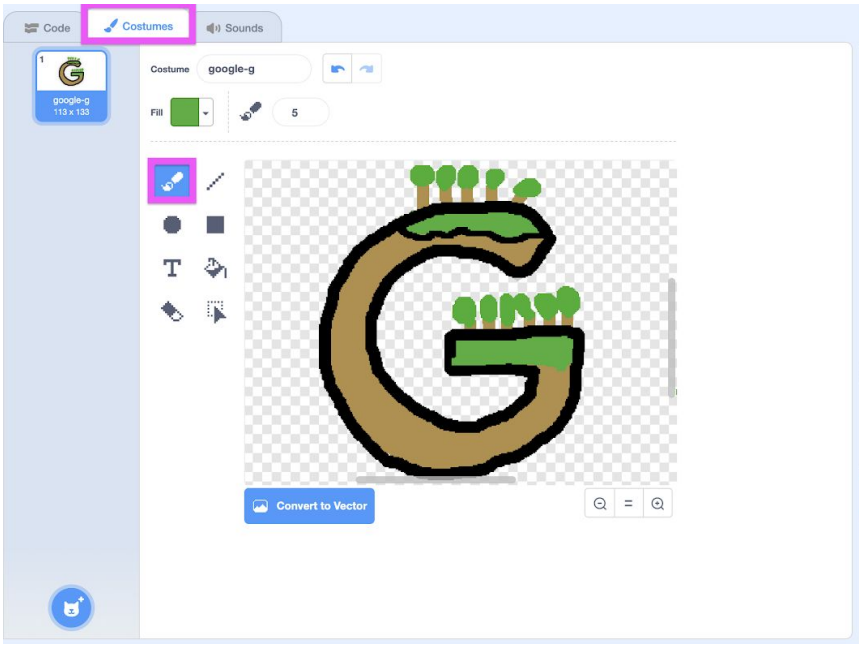
STEP 1: Open the Starter Project

1. Sign in to scratch: scratch.mit.edu
2. Open the starter project: bit.ly/google-doodle-starter
3. Remix the project & change the project name



STEP 2: Design your letter

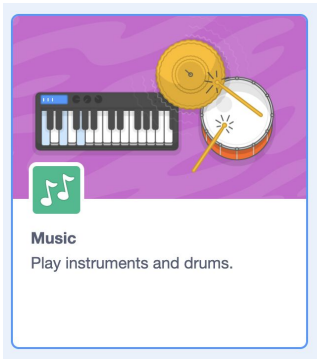
1. Select the letter “G” sprite
2. Open the “Costumes” tab to design the letter
3. Use the paintbrush, paint bucket, etc to design the first letter
4. Show learners how to zoom in using the magnifying glass in the bottom corner
5. Learners can undo mistakes by clicking on the “undo” icon (top, left)



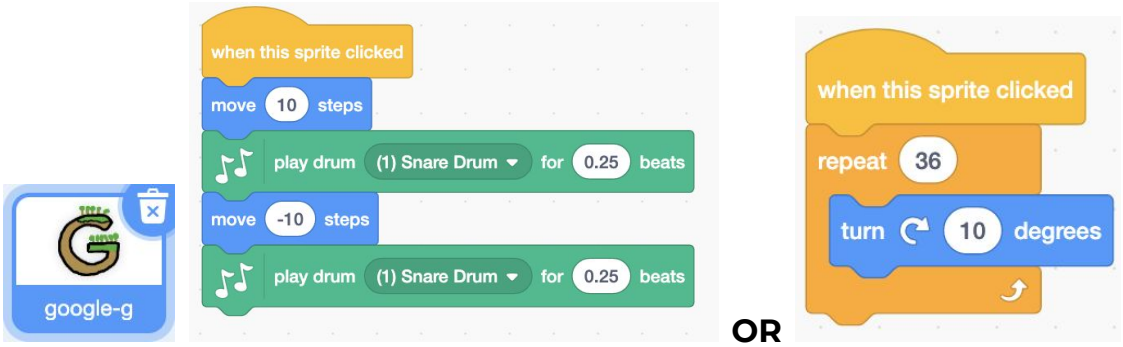
**Show learners how to animate their letters before they design their entire doodle (Designing the letters can take a very long time, so we don't want to run out of time and not get to the coding part!)

STEP 3: Animate your letter

1. Go back to the "Scripts" tab
2. Add the music extension to your project



3. Make your letter move using the blue motion scripts (eg. move 10 steps)
4. Make your letter make sounds using the purple sounds scripts (e.g. play drum)
5. Try to use loops to make things happen more than once
6. Make all of these animations happen when the sprite is clicked (or another event)



STEP 4: Finish your design

1. Give learners time to finish designing and animating their letters
2. Each letter needs its own instructions - learners can either add new animations, or copy instructions over by clicking and dragging the scripts to another letter in the Sprites area.

ADD-ON: Extra animations

- Try using broadcast messages, like this example: https://scratch.mit.edu/projects/152619693/
- Add background music and animate letters to dance to the song
- Make the letters say something and narrate the theme of the doodle
- Make letters change colours (try looping the “change color effect by” script)