Rock Band

Introduction

Learn how to code your own musical instruments!

What you will make

You will make a game where you can click on the singer or the drum to hear singing or drum sounds.

What you will learn:

- How to add sprites and backgrounds to a Scratch project
- How to change a sprite's costume
- How to make sprites react when they are clicked
- How to play sounds in Scratch

What you will need:

Hardware

- A computer capable of running Scratch 3

Software

- Scratch 3 (either online or offline)

Step 1: Sprites

Before you can start coding, you'll need to add in a 'thing' to code. In Scratch, these 'things' are called **sprites**.

✅ Activity Checklist

☐ Open a new Scratch project. **Online:** open a new online Scratch project at rpf.io/scratchon. **Offline:** open a new project in the offline editor. If you need to download and install the Scratch offline editor, you can find it at rpf.io/scratchoff. It looks like this:
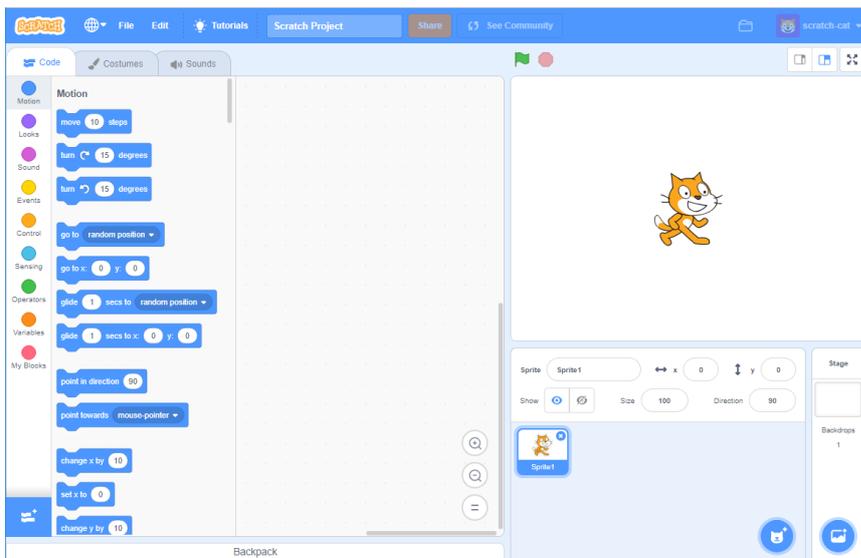
☐ The cat sprite that you can see is the Scratch mascot. You don't need it for this game, so get rid of it by right-clicking it and then clicking on **delete**.
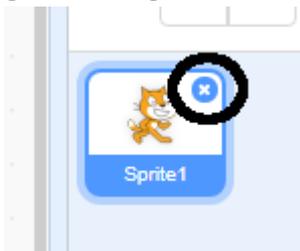
☐ Next, click on **Choose sprite from library** to open up a list of all the Scratch sprites.
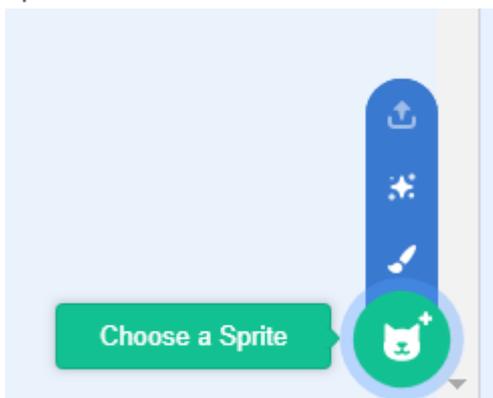
☐ Scroll down until you see a drum sprite. Click on a drum to add it to your project.
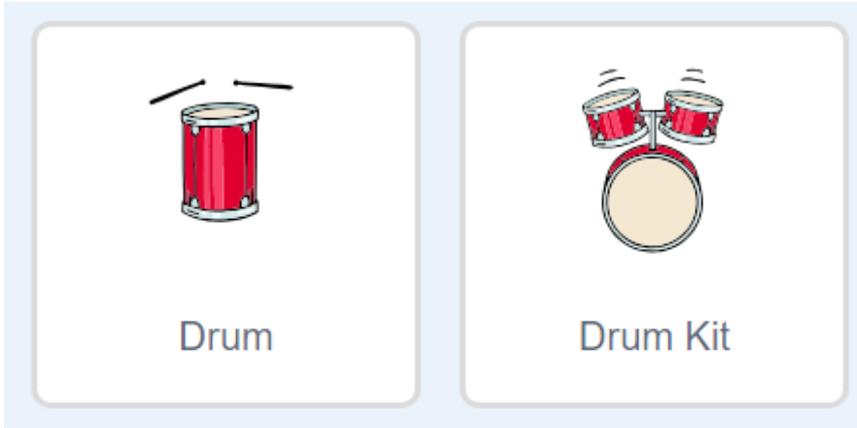
☐ Click and drag the drum to the bottom of the Stage.

☐ Give your program a name by typing into the text box at the top.

Then click on **File**, and then on **Save now** to save your project. If you are not online or don't have a Scratch account, you can save a copy of your project by clicking on **Save to your computer** instead.
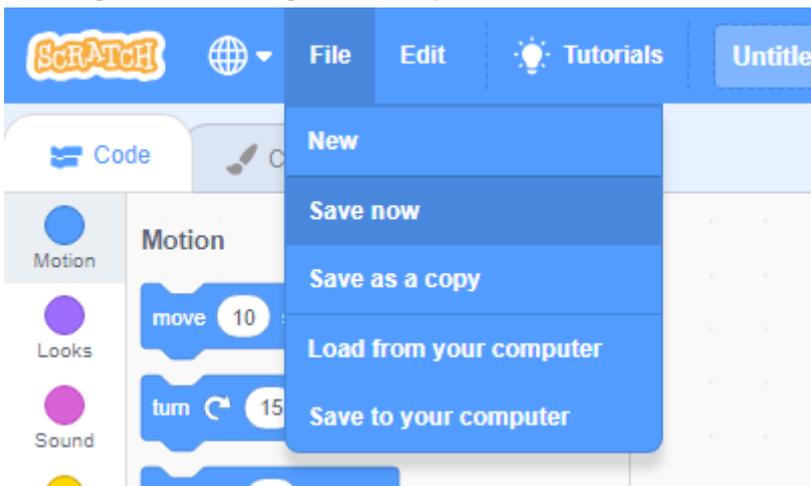

Step 2: The Stage

The **Stage** is the area on the right, and is where your project comes to life. Think of it as a performance area, just like a real stage!

✅ Activity Checklist

☐ At the moment, the stage is white and looks pretty boring! Add a backdrop to it by clicking on **Choose a backdrop**.
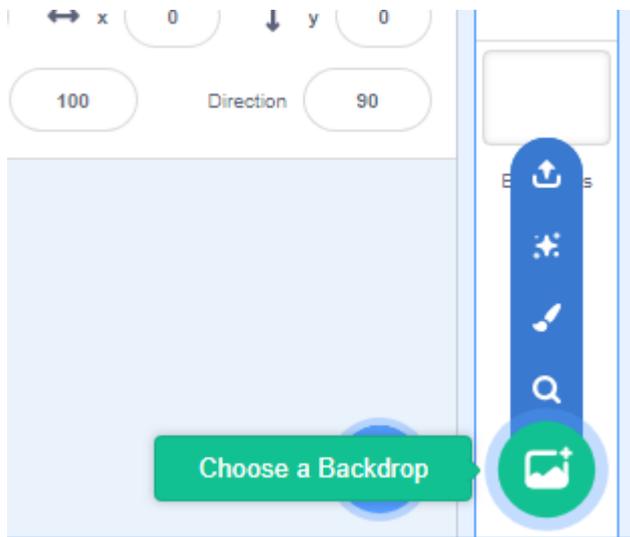
Click on **Indoors** in the list at the top. Then click on a theatre backdrop.
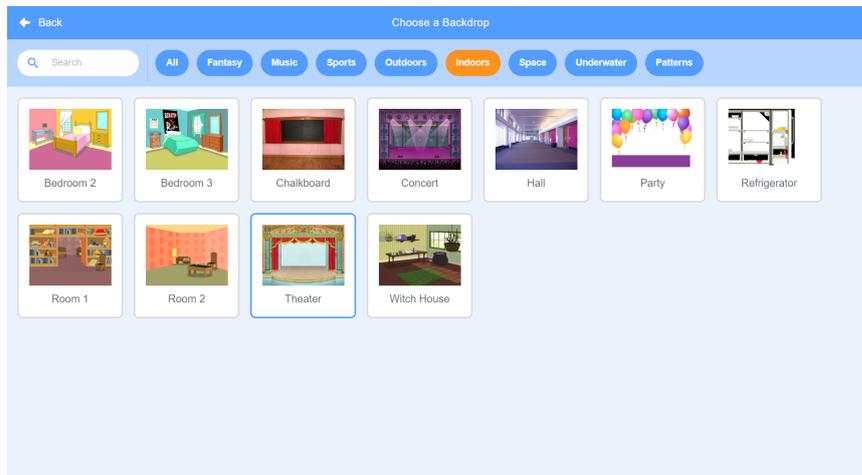

Your stage should now look similar to this:
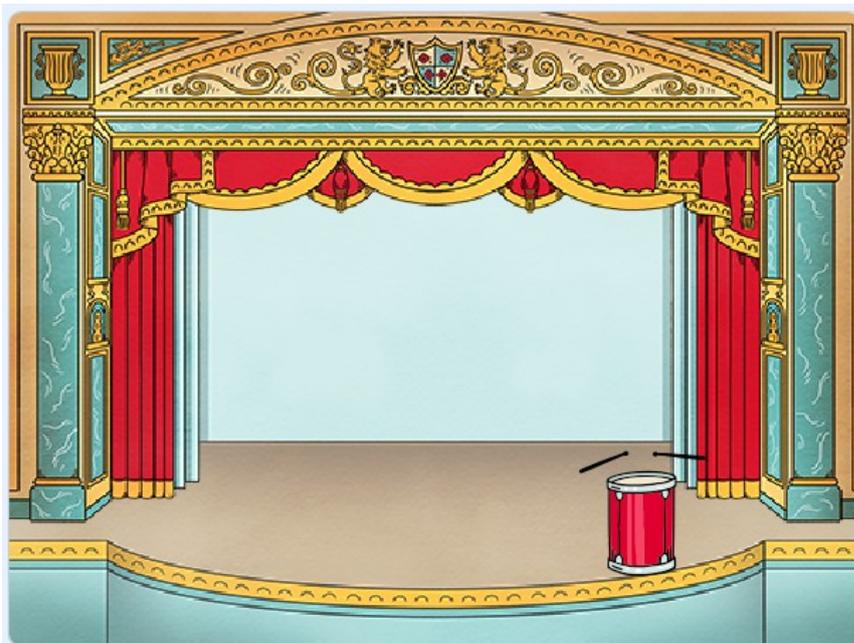
Step 3: Making a drum

Now you will add code to your drum so that the drum makes a sound when it's coded!

✅ Activity Checklist

☐ First add the **Music** extension so you can play instruments. Click on the **Add extension** button in the bottom left-hand corner.
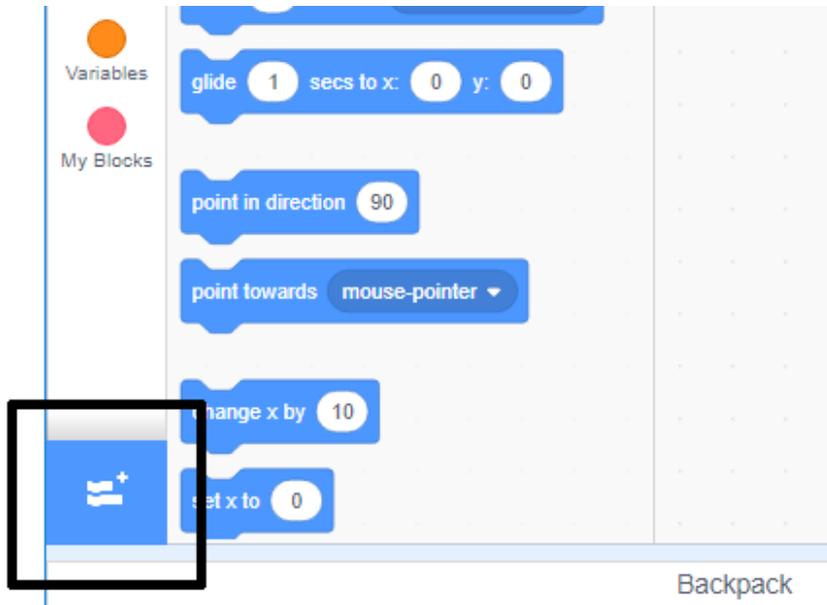
Click on the **Music** extension to add it.
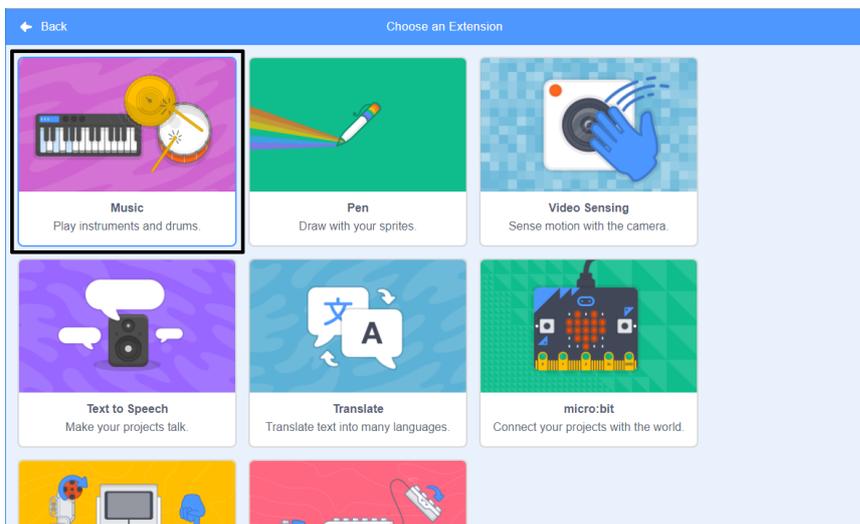
☐ Click on the drum sprite, and then drag these two blocks into the code area on the right:

Make sure that the blocks are connected together (like LEGO bricks).

☐ Click on the drum to try out your new instrument!

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Challenge: improving your drum

Can you change the sound that the drum makes when it's clicked?
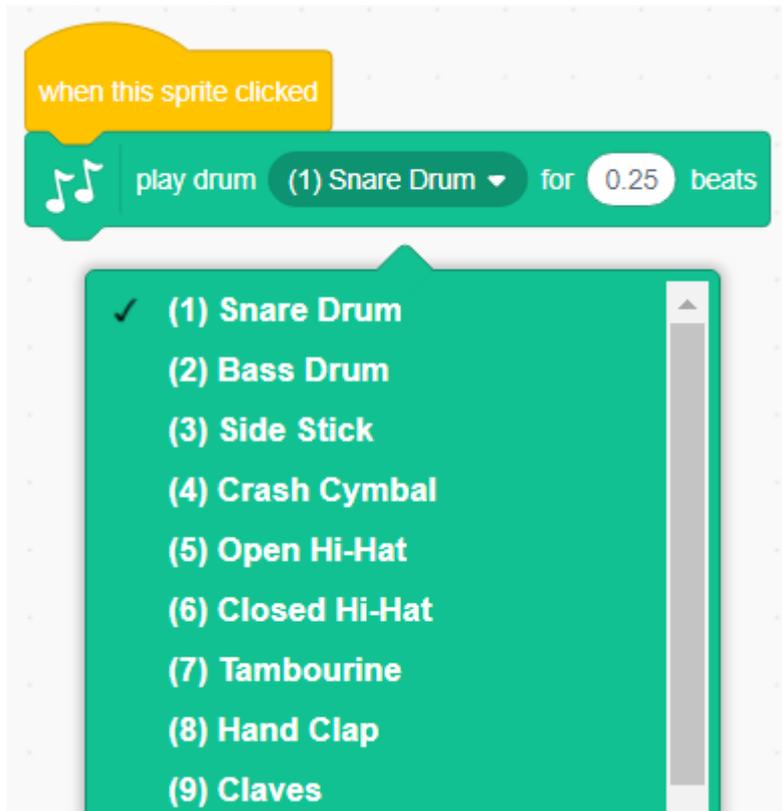
Can you also get the drum to make a sound when the space bar is Pressed?

You'll need to use this event block:

If you want to copy your existing code, right-click on it and then click on **duplicate**.
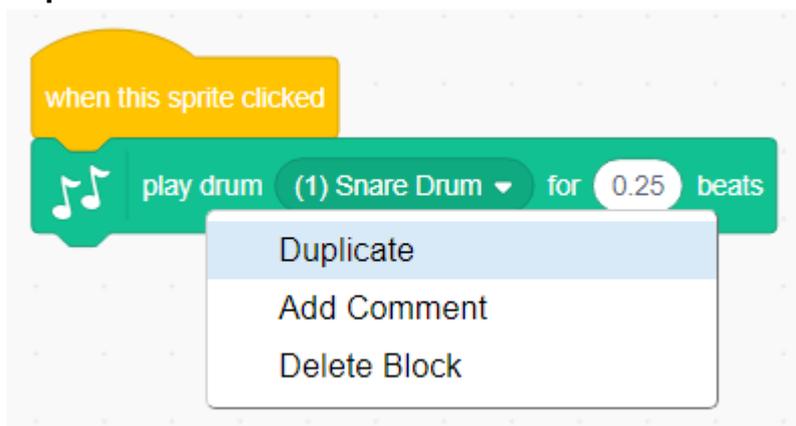
Step 4: Making a singer

Now you will add a singer to your band!

✅ Activity Checklist

☐ Add a singer sprite to your Stage.
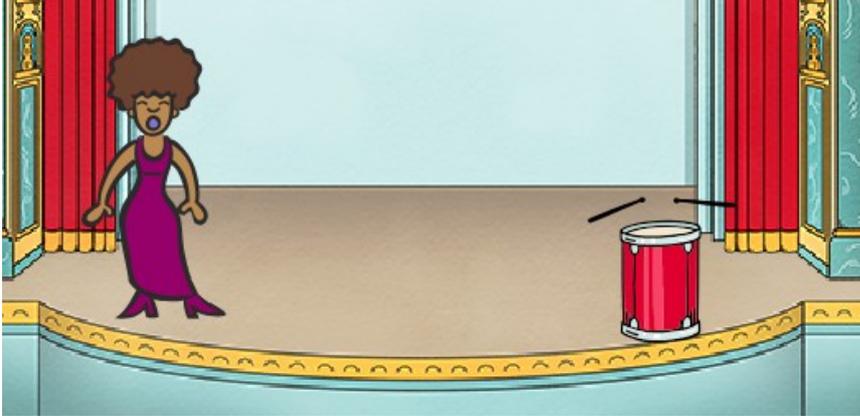
☐ Before you can make your singer sing, you need to add a sound to your singer sprite. Make sure that you have selected your singer sprite, then click on the Sounds tab, and click on **Choose a sound**:
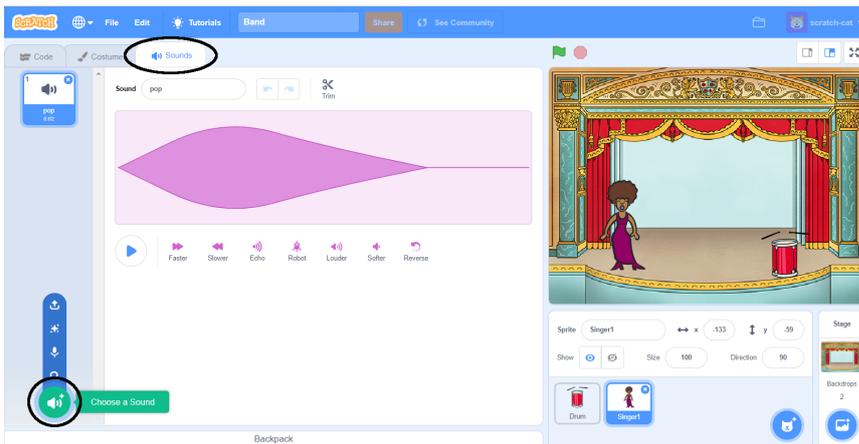
☐ Click on **Voice** in the list at the top, and then choose a sound to add to your sprite.
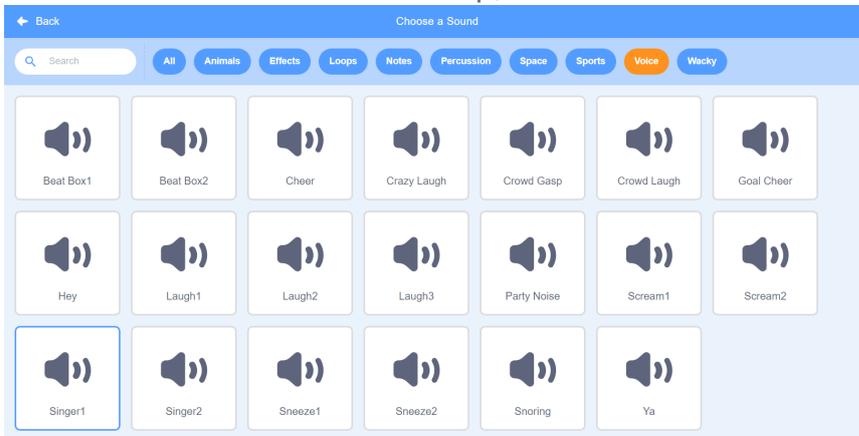
☐ To use the sound, add the following code blocks to your singer sprite:

☐ Click on your singer on the stage and see what happens. Does she sing?

Step 5: Costumes

Now you will make your singer look like she's singing!

✅ Activity Checklist

☐ You can change how your singer sprite looks when it's clicked by creating a new costume. Click on the Costumes tab, and you'll see the singer costume.
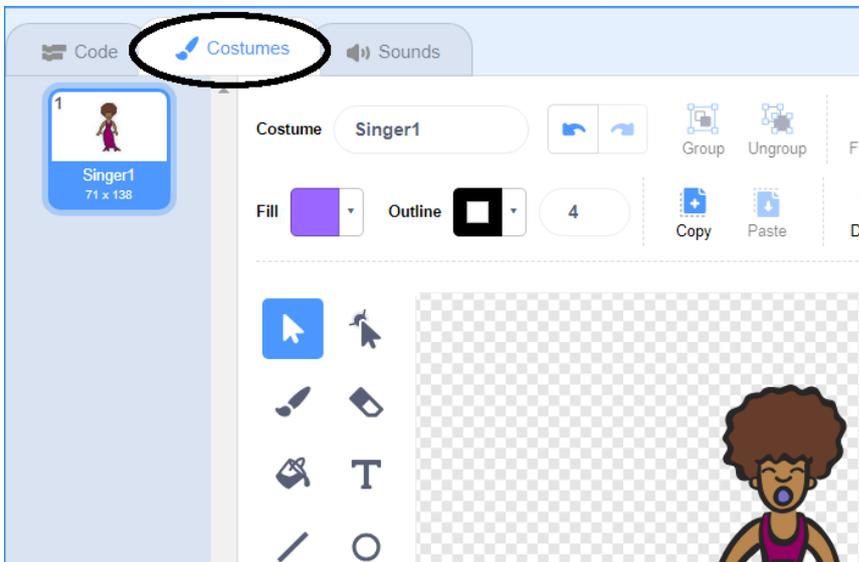
☐ Right-click on the costume and then click on **duplicate** to create a copy of it.
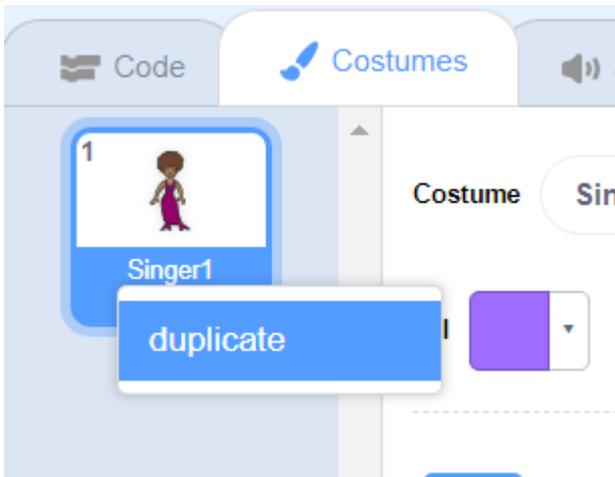
☐ Click on the new costume (called 'Singer2'), and then select the line tool and draw lines so it looks like your singer is making a sound.

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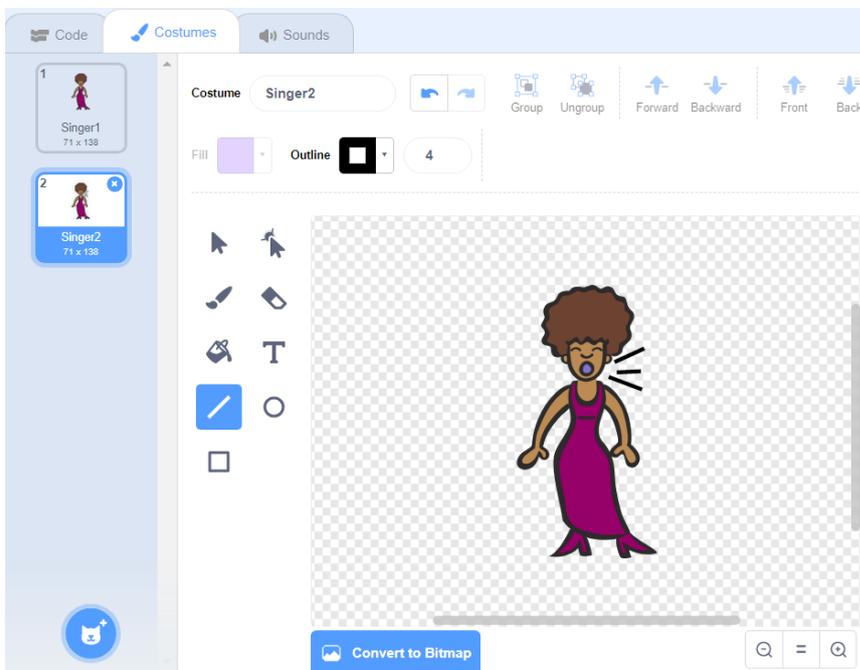
☐ The names of the costumes aren't very helpful at the moment. Type into the text boxes of the costumes to change their names to 'not singing' and 'singing'.
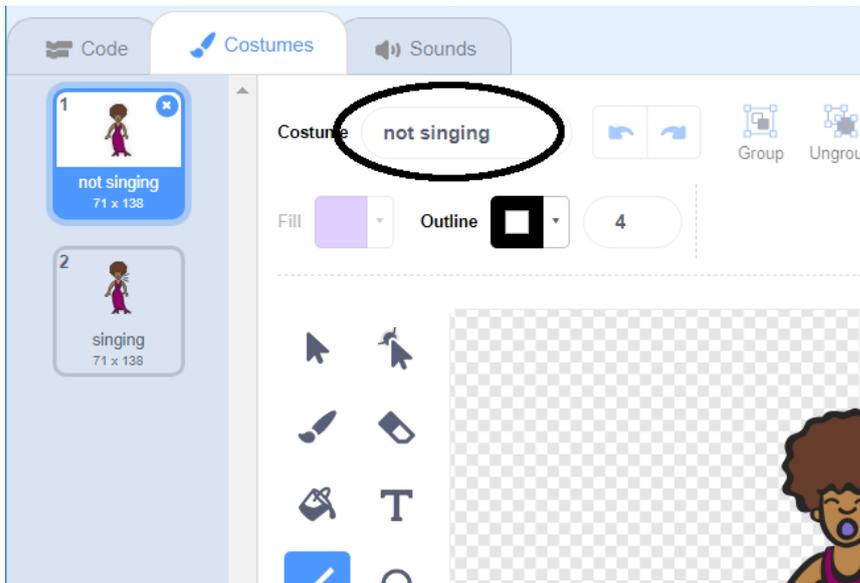
☐ Now that you have two different costumes for your singer, you can choose which costume is displayed! Add these two code blocks to your singer sprite:

The code block for changing the costume is in the `Looks` section.

☐ Click on your singer on the stage. Does she look like she is singing?

☐ Now make your drum look like it's being hit!

Use the instructions for changing your singer sprite's costume to help you.

Remember to test that your new code works!

## Challenge: improve your band

Use what you've learnt in this project to make your own band! You can create any instruments you like — look at the available instrument sprites and sounds to get some ideas.
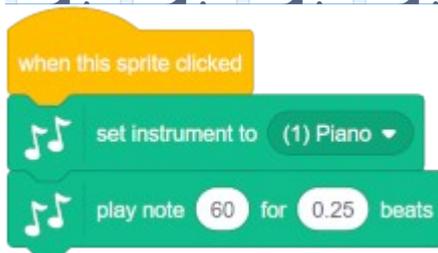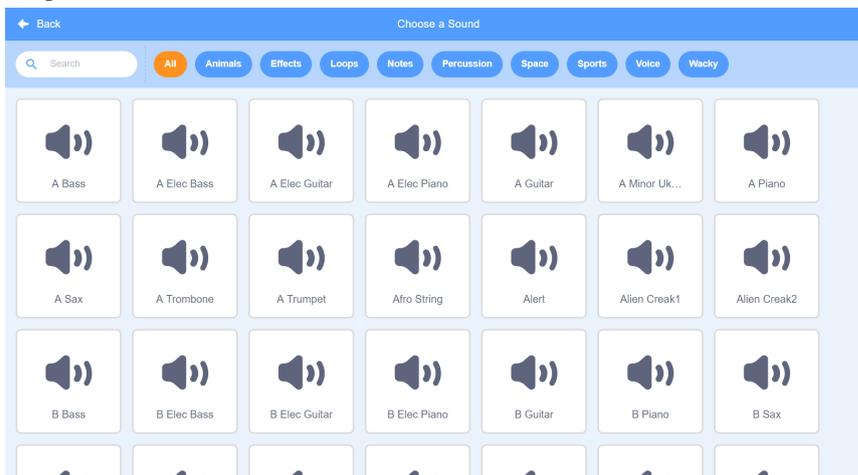
Your instruments don't have to be realistic though. For example, you could make a piano made out of muffins!

You can use more sprites from the library, and you can also paint your own sprites!
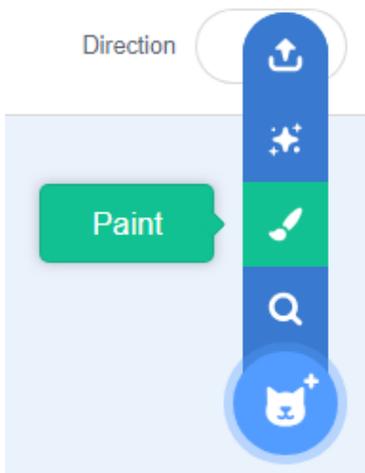
If you have a microphone, you can record your own sounds, and you can even use a webcam to hit your instruments!