

Change it up: Teach Edison to count to 9

Have you ever looked at how old digital signs and clocks display numbers? The numbers are displayed using lines which make up a rectangle-shaped grid. Each number, from 0 up to 9, can be displayed by using some combination of the lines in that grid.

Digital display numbers don't have curves or diagonal lines. They only have straight lines and right angles. That makes them perfect patterns for Edison to drive!

Teach Edison a number

Look at the activity sheets on pages 57 - 60. Choose one of the activity sheets to use.

Write a program for Edison so that the robot can trace over the digital display number you chose. Start the robot off of the digital display number and drive so that the robot traces over every segment of the number.

Which digital display number did you use?

Write down your program below. Which blocks does it use, in which order? Or take a photo of your program and click the image block on right below to add.

Teach Edison a different number

Choose a different digital display number activity sheet. Use what you learned about the distance input parameter from your last number and write a program for Edison so that the robot can trace over your new digital display number.

Which digital display number did you use? _____

Write down your program below. Which blocks does it use, in which order? Or take a photo of your program and click the image block on right below to add.

Compare your two programs. Are there any patterns you notice that are similar in both? What are they?

Challenge up: Teach Edison to count to 9 out loud

Can you get Edison to trace a digital display number by driving over it and count the same value 'out loud' in just one program?

What to do

Look at the activity sheet on pages 57 - 60. Choose one of the activity sheets to use.

Write a program for Edison so that the robot traces over the digital display number you chose. You also need Edison to count 'out loud' somehow.

Your program needs to have Edison count the same amount as the digital display number it is driving. For example, if you choose the number 5, your program needs to have Edison give some sort of signal as it 'counts' to 5.

Think about the sequence of things you want Edison to do. Will the robot drive the whole path and then count? Count before driving? Drive a little, count to one, then drive a bit more before counting the next number?

How you do it is up to you!



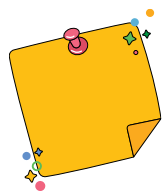
Hint

Which of Edison's outputs could you use to signal the robot is counting

Write down your program below. Which blocks does it use, in which order? Or take a photo of your program and click the image block on right below to add.

Let's explore Edison's musical talents

Outputs using sounds are one of your Edison robot's three main types of outputs. In EdScratch, the blocks related to sound outputs are in the **Sound** category.



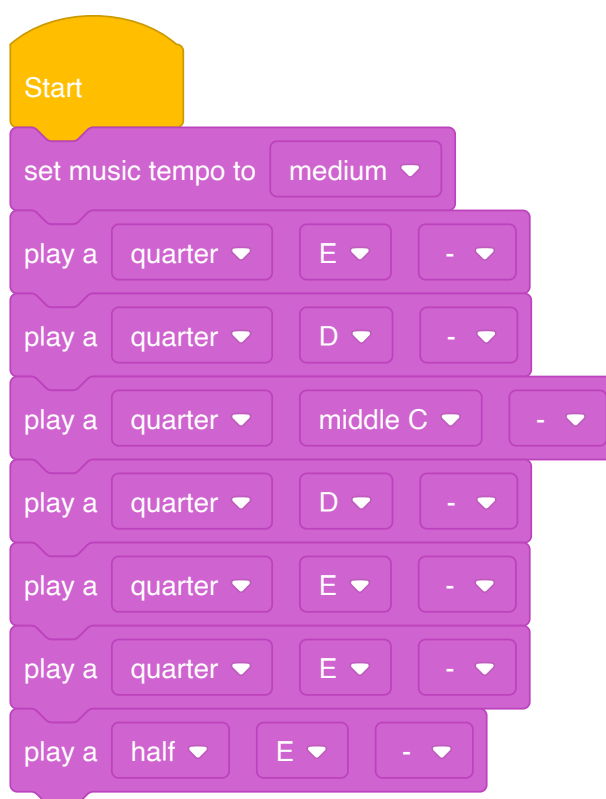
Don't forget

Edison has a special bit of tech which you can see just to the left side of the round button. This is a buzzer and a sound sensor all in one. It can detect noise but it can also make noise, like beeps or musical notes.

Have a look at the Sound category in EdScratch. There are not many blocks in this category, so you might think there is not a lot you can do with Edison and sounds. By using the sound blocks in different sequential orders and with different input parameters, however, you can play whole songs!

Play a tune

In EdScratch, write the following program:



Download the program to your Edison robot and run it.

This program is the first part of a song you might know. Do you recognize the tune?

The first block in the program is the set music tempo block. Try clicking on the drop-down menu in the set music tempo block to see the input parameter options for the block. Choose a different input parameter for the block, then download the adjusted program to Edison. Run your new program in your robot.

Which new input parameter did you select for the **set music tempo** block?

What happened when you played the new program? What changed compared to the original program?

What does the **set music tempo** block do?

If you put the **set music tempo** block at the end of this program instead of the beginning, what would happen? **Hint:** Remember that Edison will read each EdScratch block one at a time from the top of the program in sequence.



Hint

Not sure what would happen if you make a change to a program? One of the best ways to find out is to make the change, download the adjusted program and test it out using Edison!

You can always experiment in coding!



Link

Want to hear Edison play more of this song?

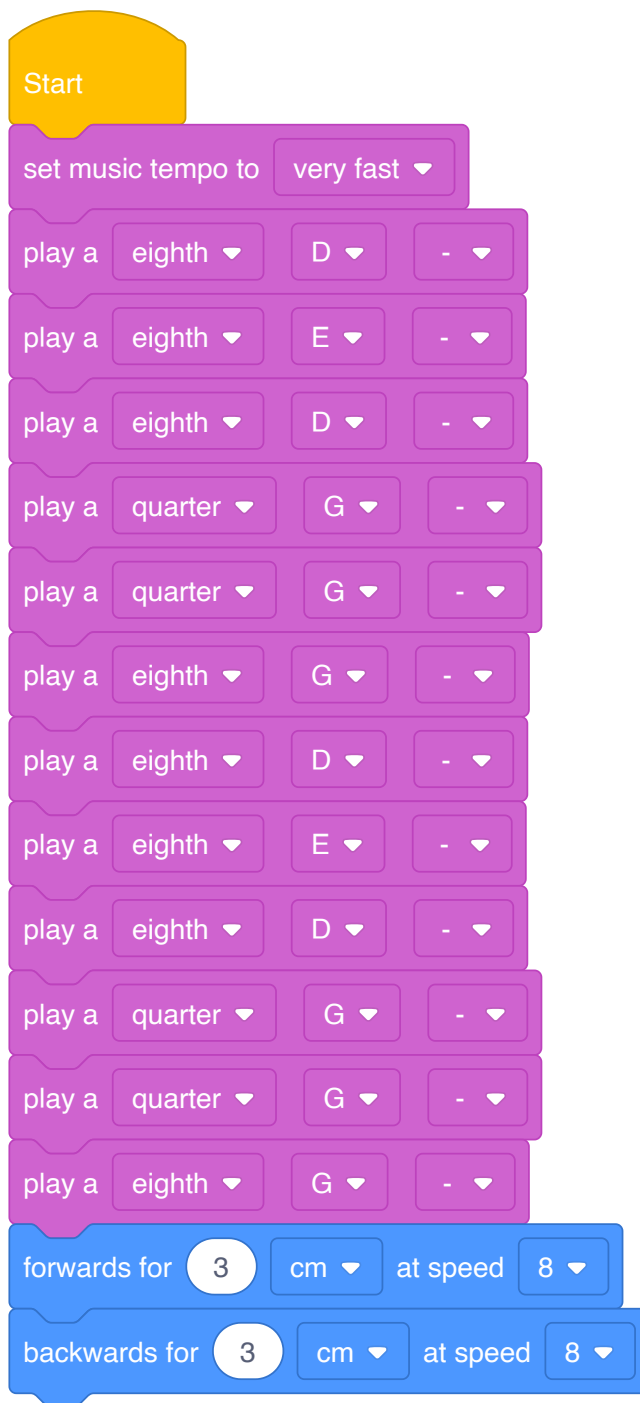
Open the program using this link:

<https://www.edscratchapp.com?share=Eb12x3Dm>



Move to the music

Look at this EdScratch program:

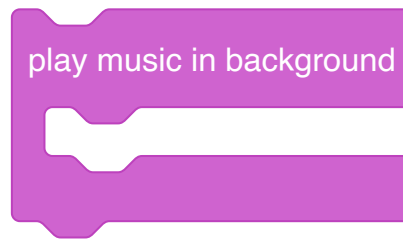


This program has the music for the first part of the song The Hokey-Pokey. This is a great song to dance along to – the song tells you just what moves to do!

In EdScratch, write the Hokey-Pokey dance program. Download the program to your Edison robot and play it.

Did your Edison robot move along with the music? Why do you think this is the case?

Edison can play a musical note while doing something else, like driving, but you have to tell the robot that is what you want it to do. There is a special block in the **Sound** category in EdScratch you need to use to do this. Here is what it looks like:



The **play music background** block is a grouping block. Other blocks can sit inside this grouping block.



Why is that?

The shape of a block in EdScratch can give you a hint about what that block is used for in programs. Look at the play music in background block. See how it has a shape a bit like a mouth? Other blocks can sit inside the opening of this block's 'mouth'.

Any block that sits inside the play music in background block will be affected by this grouping block. Remember, Edison will follow each EdScratch block one at a time. The robot will see the grouping block first and know that any blocks inside that block get the 'play music in background' affect.

Add a **play music in background** block to your Hokey-Pokey dance program. Think about where in the program this block needs to go. Download the adjusted program to your Edison robot and play it. Edison should now start playing the song and move at the same time!

Write down your program on the next page. Or take a photo of your program and click the image block to add.

Name _____

Challenge up: You are the conductor

What is your favourite song? Is there a theme song to a TV show or a movie you love to hear? For this activity, the song choice is up to you!

What to do

You are the conductor, and you need to get Edison to play the song of your choice. Write a program for Edison so that the robot plays your song. Test out different tempos to see which works best.

If you want, you can also program the robot to move or dance to your song.

Once you have your program ready, run it in Edison to have the robot perform your musical masterpiece!

Write down your program below. Or take a photo of your program and click the image block on right below to add.

Activity sheet: Digital Display



Activity sheet: Digital Display



Activity sheet: Digital Display



Activity sheet: Digital Display

