

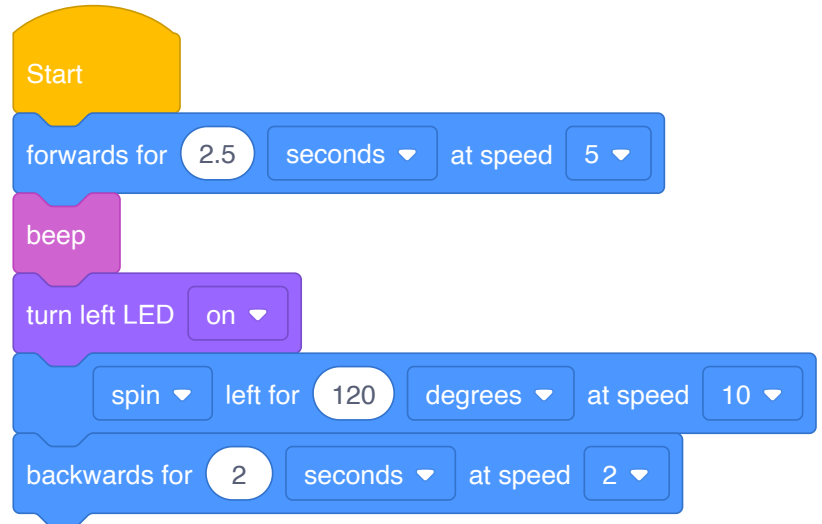
Let's explore going step-by-step in EdScratch

When you write a program for your Edison robot in EdScratch, you are writing the instructions that will tell the robot what to do and in what order to do each thing. Each EdScratch block is one action you are telling the robot to take.

The order in which you connect the blocks together in your program tells the robot in what sequence to do each action. Edison will do the actions in order, one at a time, starting with the top block.

What will Edison do?

Look at this EdScratch program:



All EdScratch programs need to have the yellow **start** block at the very top. This lets the robot know that the program starts with the first block below the **start** block.

Read each line block by block, starting with the top block below the **start** block.

If you download this program to Edison, what will the robot do? Be sure to write your answer in the correct sequence.



Hint

You can change the numbers in a block by clicking on the number and changing it using your keyboard.

You can change a drop-down item in a block by clicking on the down arrow and selecting the option you want.

Write the program

Go to the EdScratch app on your computer and write the program above from the picture.

Find each block in the block pallet and drag it into the programming area.

Make sure that you put all the blocks in the correct sequence in your program.

Once you have written your program, download it to your Edison robot. Run the program and watch what Edison does.

Look at what you wrote down about what you thought the robot would do in your answer in task one. Compare what Edison does when you run the program to your answer. Does the robot do what you predicted? If not, what is different? Check your program and your answer to see if you can spot, and fix, the difference.

Change the sequence

Try changing the sequence of your program. Change the order of at least three of the blocks in your program. Don't add any more blocks or change any of the options inside a block - only change the sequence.

Download your new program to Edison and run it in your robot.

Which blocks did you move to change the program's sequence? Write down your new program.

click box above to add a photo of your program (optional)

Let's explore driving Edison

One of the groups of blocks in the EdScratch block pallet is the **Drive** category. All the blocks in this category relate to using Edison's motors. One of the things you can use the motors to do is drive the robot like a car.

How do you 'drive' an Edison robot? By **programming** the robot with **code**!

No driver needed! Just a programmer



Jargon buster

Programs are the sets of instructions you create for a computer, or an Edison robot, to follow. The stuff inside a program is sometimes called **code**.

People often use the words **code** and **program** to mean the same thing. For example, you could say 'write a program for Edison' or 'write some code for Edison'. Either way it means 'write commands to instruct the Edison robot what to do using a programming language it understands.'

When you use EdScratch to create a set of instructions for Edison, you can say you are **programming** or that you are **coding** or both. Which makes you a **programmer** and a **coder**!

Let's try programming Edison using the drive blocks.

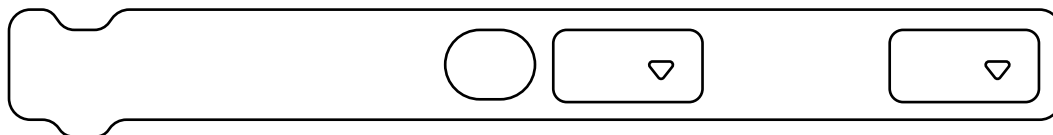
Drive a straight track

For this task, you need to get Edison to drive a straight track. Use activity sheet on page 54.

You need to write a program so that Edison can drive the track. Start Edison on the outline and have the robot stop after it crosses the 'finish' line.

Go to the EdScratch app on your computer. Look at the blocks in the Drive category. Which blocks will you need to write your program? Test your program by downloading it to your Edison robot and running it using the activity sheet.

You can code a solution for this task using just one block! Which block will work? Fill out the block here to match what you used in your successful one-block program.



Drive a maze

For this task, you need to get Edison to drive through a maze. Look at the maze on page 56. Think about the different actions Edison will need to take to drive the maze. Be sure to consider the sequence of the actions too!

What actions do you think Edison will need to take to complete the maze?
Write down a plan to get Edison through the maze.

Use this plan to help you write a program in EdScratch for Edison to drive through the maze. You will need to use several different blocks in your program to be able to complete the maze. You will also need to figure out what **input parameters** to use in each block.

Start Edison on the outline in the maze and have the robot stop after it crosses the 'finish' line. Be sure to have Edison stay inside the lines all through the maze - no cheating!



Jargon buster

The things you can change inside a block, like the numbers and choices in the drop-down lists, are called **input parameters**.



Hint

Your program might not work the first time - and that's okay! Part of coding is experimenting and problem solving. If your program isn't working, think about the actions you need Edison to do one by one to complete the maze.

Are you missing any actions in your program? Are there any actions out of order?

Challenge up: Maze madness

Did you get Edison to drive the maze on page 56 successfully?

Try these other maze challenges, remember to have Edison stay inside the lines all through the maze - no cheating!

Mirror track

Complete the maze by starting from the 'finish' line and driving to the start.

Backwards bot

Complete the maze by driving backwards from the beginning of the maze all the way to the end.

Make your own maze

Create your own maze for Edison to drive through, then write an EdScratch program for Edison to be able to complete your maze.

Once you solve your maze, swap with a partner. While they work out a solution to get Edison through your maze, you need to figure out how to get Edison to drive through their maze!



Challenge up: Self-walking pet

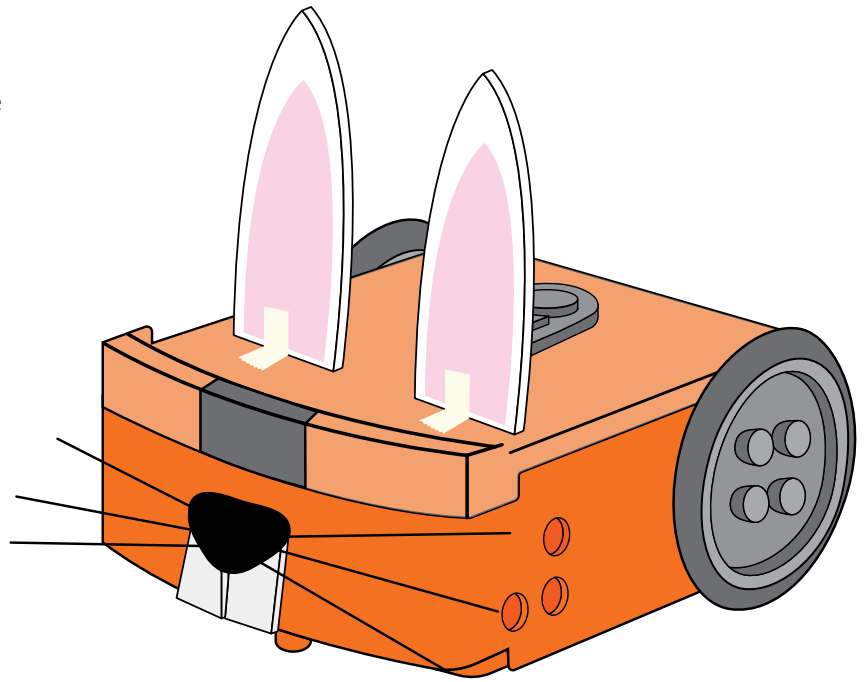
Having a pet means taking care of that pet. You have to feed it, clean up after it, and make sure it gets exercise. If only there were an easier way...

In this activity, try turning Edison into an animal that can take itself for a walk.

How can you make Edison into a self-walking pet? Here are a few ideas:

- You could decorate Edison to turn the robot into a pet.
- You could build a pet that attaches to Edison.
- You could make something that goes on the outside of Edison which Edison can move around.

Create your pet. Then write a program so that your pet will go for a walk and come back to you!



Use the space below to plan your program and design your Edison.

click box above to add a photo of your program (optional)

