

Let's explore the EdScratch environment

One of the best things about Edison is that you can make your own programs for your robot! To write a program for Edison, we need to use some special software.



Jargon buster

All computers have two main parts: hardware and software.

Hardware is the physical parts of a computer (or robot).

Software is the set of programs and applications that make hardware, like a computer or a robot, run.

The software we will use with Edison is a robot **programming language**.



Jargon buster

A **programming language** is a set of rules and instructions used to write computer programs. EdScratch is a programming language specially designed for programming Edison robots.

The programming language we will use is called EdScratch. Let's learn a bit about the EdScratch programming language.

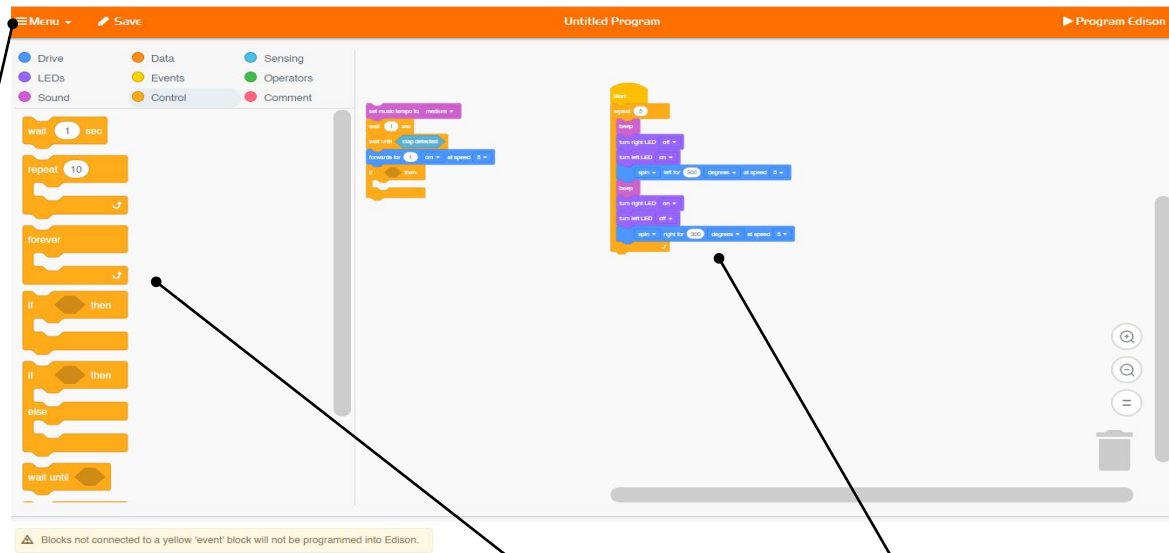
Check out EdScratch

You can access EdScratch online.

Go to www.edscratchapp.com

Whenever you want to program Edison using EdScratch, you will always need to go to the EdScratch app.

Here is what the EdScratch environment looks like:



Menu bar

Options such as 'Save' and 'Load' are accessed from the menu bar. The menu bar also has the 'Program Edison' button.

Bug box

Below the block pallet and programming area is the bug box. Warning messages will show up in the bug box.

Block pallet

All of the blocks you can use are in the block pallet. To use a block, select it from the block pallet, and drag it into the programming area.

Programming area

The large area where you can connect blocks together into programs is called the programming area. Drag and drop blocks from the block pallet into this area to use them in your program.

Load and download the test program

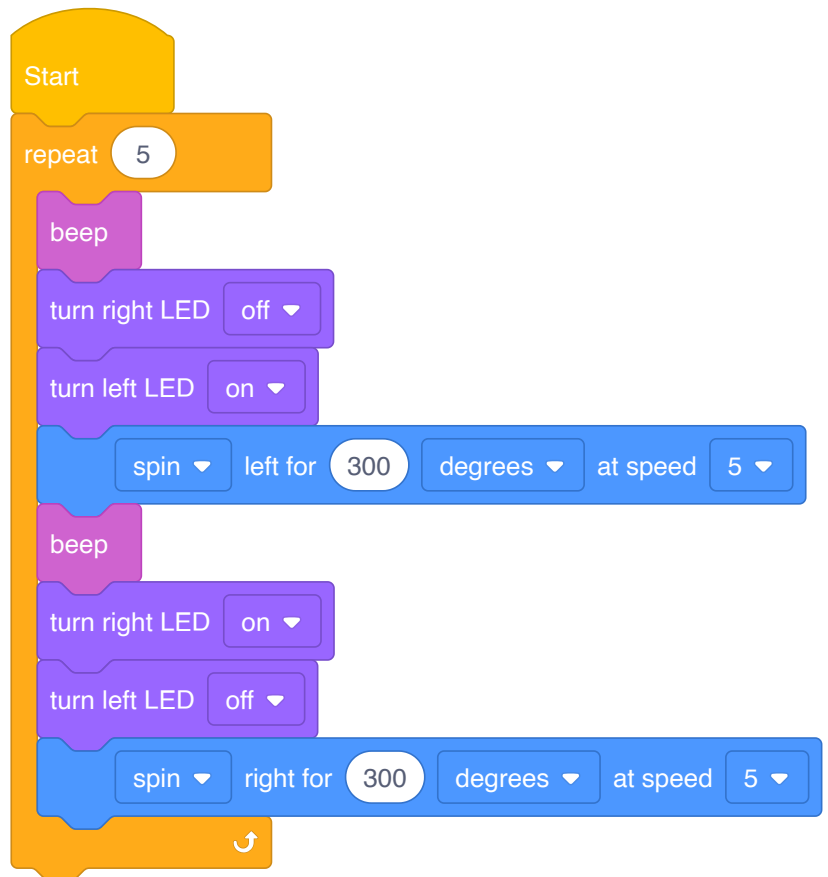
EdScratch has some demo programs already written. Try loading and downloading the demo program called **Test_program**.

Load the Test_program demo program

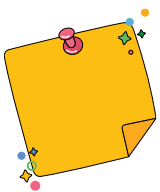
To load the demo **Test_program**, follow these steps:

1. In EdScratch, go to the menu bar and select the menu drop-down. Find and select the option called Load Demos. This will open a pop-up window with all of the demo programs.
2. Find and select the program called **Test_program**. The program will load in the programming area.

Here is what the **Test_program** looks like:



Once the program loads in the programming area, you can download it to your Edison robot.



Don't forget

Make sure that your Edison robot version matches the EdScratch version you are using.

Download Test_program to Edison

Running a test program is a great way to get started using EdScratch. Follow these steps to test EdScratch on your computer:

1. Open the EdScratch app at edscratchapp.com using one of the following browsers Chrome, Edge, or Opera.
2. When EdScratch opens click **'Menu'** and select **'Load Demos.'**
3. Select the program called **'Test_Program'** which will load in the programming environment.
4. Plug the Edison V3 robot's USB cable in to the computer's USB-A port.
5. From the EdScratch app, press the **'Program'** button (top right corner).
6. A popup window will appear asking to connect to Edison V3. Select **'Edison V3 - Paired'** and click **'connect'**.
7. The program will download to Edison V3 and you will hear the **'success'** sound (the same tune Edison plays when you turn Edison on).
8. Disconnect Edison from the USB port and press the triangle button on Edison to run the program.



Why is that?

Edison cannot understand the blocks in EdScratch the way they look on your computer screen. The blocks need to be changed into a format that Edison can understand before the program can be downloaded. This can take a bit of time.

That's why it can take a little while for the **Program Edison** button in the pop-up window to appear.



Why is that?

Edison will let you know if the program downloads correctly by making the 'success' beep. This is the same sound you hear when you first turn Edison on.

There's another sound Edison might make if a program does not download correctly. We call this the 'fail' sound. It means something went wrong when the program tried to download. If Edison makes this sound, try starting your download again.

Try it out

Load the **Test_program** demo program in EdScratch. Download and run the program with your Edison robot. Then answer the following questions:

Which part of the EdScratch environment is the Program Edison button located in?

How many warning messages are there in the bug box when you load the **Test_program**?

What does the robot do when you run the **Test_program**? Describe what happens below.

Challenge up: Download another

There are multiple demo programs in EdScratch. Choose a program other than **Test_program** from the demo program list. Try downloading and running the demo program of your choice to see what that program does.

What was the name of the program you chose?

Did the program do what you expected?

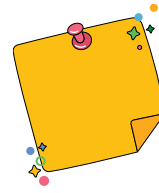
Look at the program you chose in EdScratch. Think about what the robot does when you run the program. What do you notice? How do the blocks in the program relate to what the robot does when you run the program in Edison?

(now go to next page)

Let's explore warning messages

Some programming languages have special features to make it easier to use that language. One example of this is the bug box in EdScratch.

Sometimes when we write a program for Edison in EdScratch, something isn't quite right. When this happens, a warning message will show up in the bug box.



Don't forget

The bug box is located below the block pallet and the programming area in EdScratch.

There are two types of warning messages: yellow warning messages and red warning messages. Whenever you write programs for Edison, it is a good idea to check the bug box before you try to download the program. The warning messages can help you fix up your program!



Yellow warning messages

Yellow warning messages are caution messages. This is EdScratch saying "Heads up! This might not work the way you want it to work." You can download a program even if there are yellow messages in the bug box.

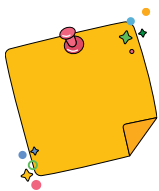


Red warning messages

Red warning messages are like 'stop' messages. These messages are EdScratch saying "Sorry! This program won't make sense to Edison." If there are any red warning messages in the bug box, you will not be able to download the program to Edison.

Try it out

In EdScratch, find and load the demo program called '**Warning messages demo.**' Once the program loads in EdScratch, answer the following questions.



Don't forget

To get to EdScratch go to www.edscratchapp.com

Go to the menu bar and select the menu drop-down. Find and select the option called **Load Demos**. This will open a pop-up window with all of the demo programs. Find and load the program called **Warning_messages_demo**.

Try downloading this program to your Edison robot. What happens? Does it work? Why or why not?

Read the red message in the bug box. Look at the program. Can you fix the problem? Describe what you did to fix the red message.

Read the yellow message in the bug box. Look at the program. If you download the program while that yellow message is there, which blocks will not be programmed into Edison?