EdPy worksheets

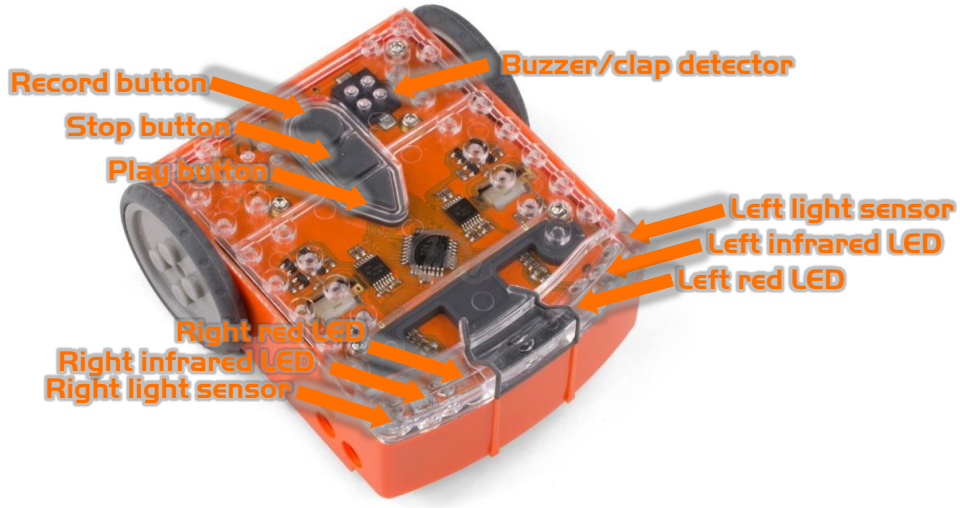
Student worksheets and activity sheets

Name_____

Lesson 1: Worksheet 1.1 – Meet Edison

Edison is a small programmable robot. Edison uses sensors and motors to interact with the world. You can also use Edison with LEGO bricks to build all kinds of things.

Look at the images below to become familiar with Edison's sensors, buttons and switches.



This is the top of Edison.

Play (triangle) button – Run program
Stop (square) button – Stop program
Record (round) button – 1 press = download a program, 3 presses = scan barcode

This is the bottom of Edison.

Edison's line tracking sensor is made up of two parts: a red LED light and a light sensor.

The line tracking sensor can also read special barcodes that activate pre-set programs.

You will also use the EdComm cable to download your programs to Edison. It connects to the headphone socket on your computer.

This is the EdComm programming cable.

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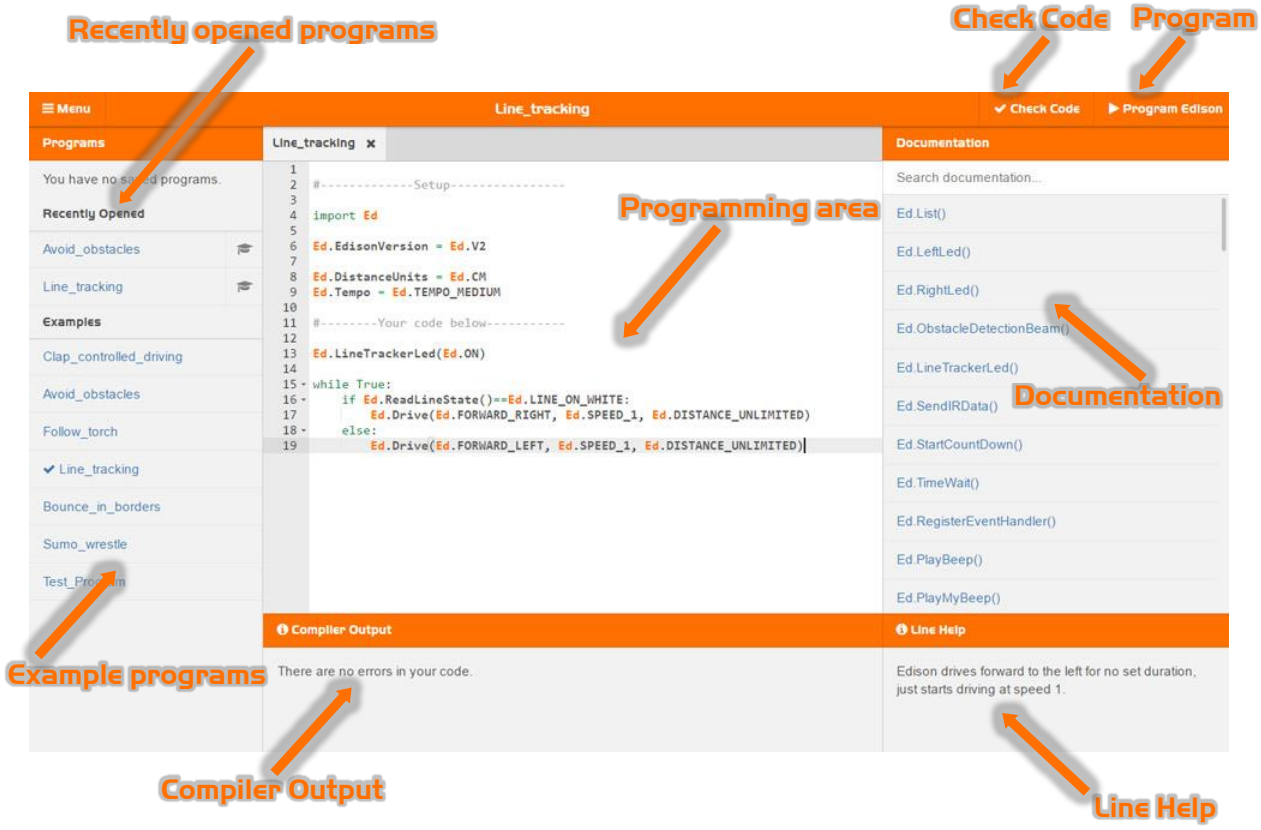
Lesson 1: Worksheet 1.3 – Meet the EdPy app

In this activity, you will get to know the EdPy app, the software we will use to program the Edison robot.

To get familiar with the EdPy app and programming, try opening up some example programs. Investigate how some of the functions work by searching in the 'Documentation' window. Everything you need to know about the EdPy app commands can be found in the documentation section. Also, try using the 'Line Help' to discover more about each



function.

Your turn:

1. What should you change the following line to if you are using an Edison Version 1?

   Ed.EdisonVersion = Ed.V2 _____

2. How many input parameters does each of the following commands have?

   Ed.PlayBeep() _____

   Ed.TimeWait() _____

   Ed.LeftLed() _____

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Ed.DriveRightMotor() _____

3. You can change the Setup code to use inches instead of centimetres as your unit of measurement throughout the program. If you did this, how should that line of the Setup code be written?

_____

_____

4. If there are errors in your code after you have clicked the ‘Check Code’ button, in which window will the errors appear?

_____

_____

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Lesson 1: Worksheet 1.4 – Downloading a test program

Open the program called 'Test_Program' from the 'Examples' window in EdPy.

This is what the Test Program looks like:

Test_Program

```
1
2  #-------------Setup----------------
3
4  import Ed
5
6  Ed.EdisonVersion = Ed.V2
7
8  Ed.DistanceUnits = Ed.TIME
9  Ed.Tempo = Ed.TEMPO_MEDIUM
10
11 #--------Your code below-----------
12
13
14
15 while True:
16     Ed.PlayBeep()
17     Ed.LeftLed(Ed.OFF)
18     Ed.RightLed(Ed.ON)
19     Ed.Drive(Ed.SPIN_RIGHT, 5, 350)
20     Ed.TimeWait(20, Ed.TIME_MILLISECONDS)
21     Ed.PlayBeep()
22     Ed.LeftLed(Ed.ON)
23     Ed.RightLed(Ed.OFF)
24     Ed.Drive(Ed.SPIN_LEFT, 5, 350)
25     Ed.TimeWait(20, Ed.TIME_MILLISECONDS)
26
```

Edison looks at each line of the program one at a time, then does what the line says.

There are some lines Edison will skip, however.

Look at line 2, which starts with a '#' (hash) character. When a line starts with this character, it is called a 'comment line.' Edison will ignore any characters that come after the '#' on a line and move onto the next line. In programming, we use comment lines to document our code to help keep track of things and so that other people can understand the program.

Download the program to Edison

To download a program to Edison, connect the EdComm cable to the headphone socket on the computer and **turn up the volume to full**. Plug the other end of the EdComm cable into Edison as shown.

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To download the test program, follow these steps:

1. Turn Edison on, then press Edison's record (round) button once
2. Connect Edison to the computer using the EdComm cable and confirm the volume is turned up to full
3. Press the 'Program Edison' button in the upper right corner of the EdPy app
4. Follow the steps in the pop-up window, then press 'Program Edison'

Once the program finishes downloading, unplug the EdComm cable. Press the play (triangle) button once to run the program.

Your turn:

1. What did the robot do when you pressed the play button?

_____

_____

_____

_____

2. Look at the Python commands in the program and think about what Edison did when you played the program. Describe how they relate to each other.

_____

_____

_____

_____

3. Explain how the program gets from the computer to the robot.

_____

_____

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