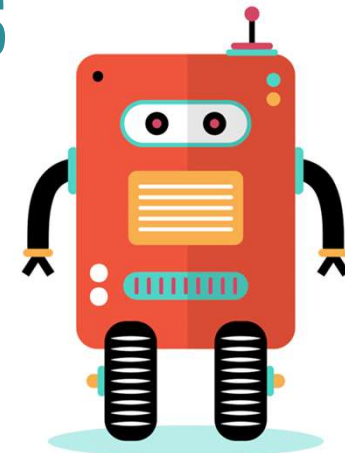
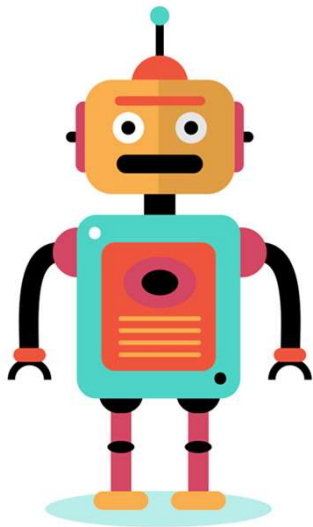




Barcoding EdVentures with Edison



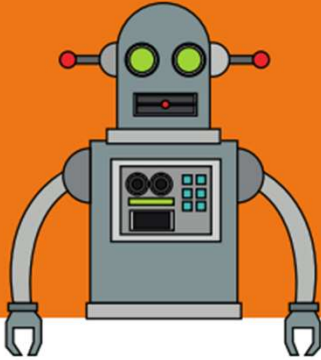
Computer Scientist: _____

Designed by Sherrie Dennis (@RobotGeneral5)



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

<https://creativecommons.org/licenses/by-nc-sa/4.0/>



WHAT IS A ROBOT?

Activity sheet

This is what I imagine when I think of a robot:





A robot is a machine that can be made to do a task on its own. There are many types of robots. Different robots can do different things. What kinds of robots are there and what can they do?

Robots in fiction:

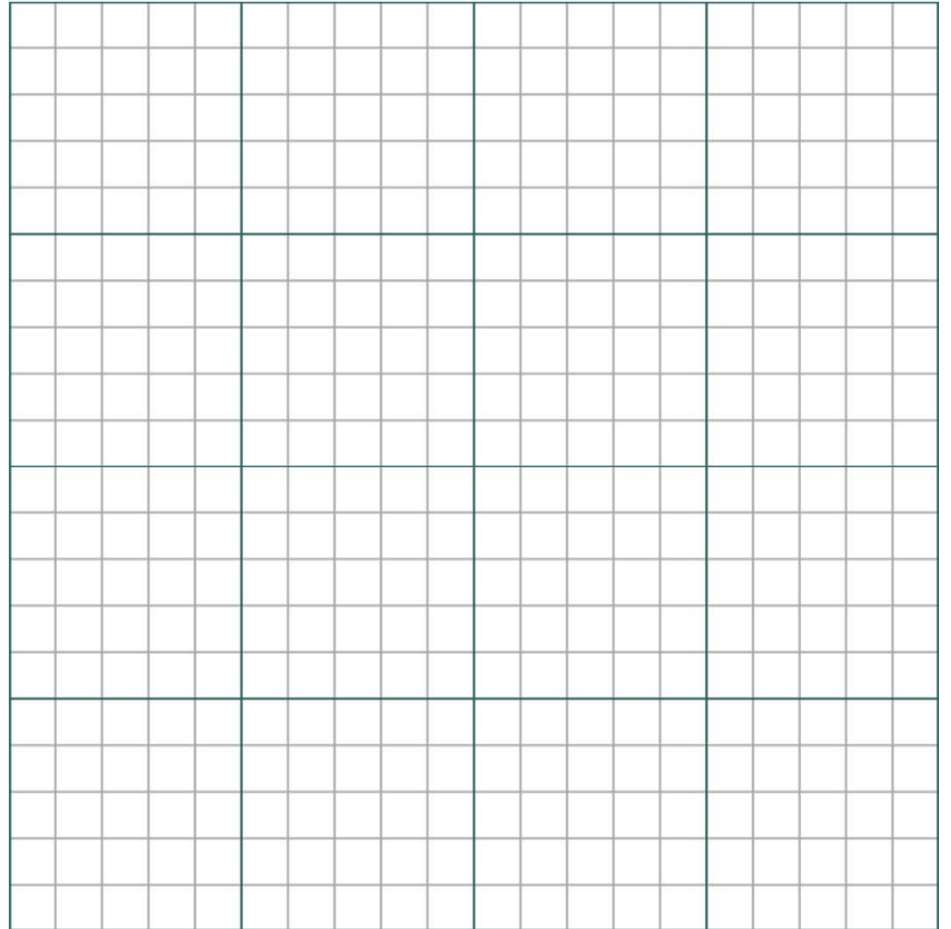
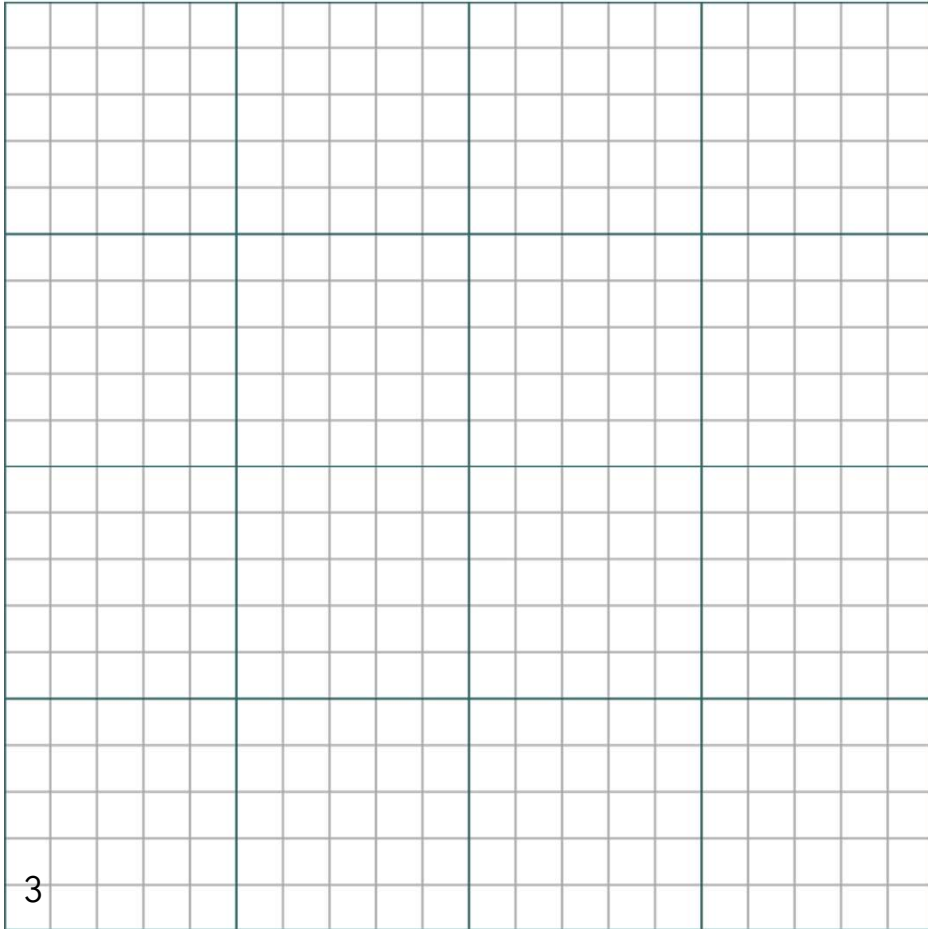
Robots in the real world:



Top

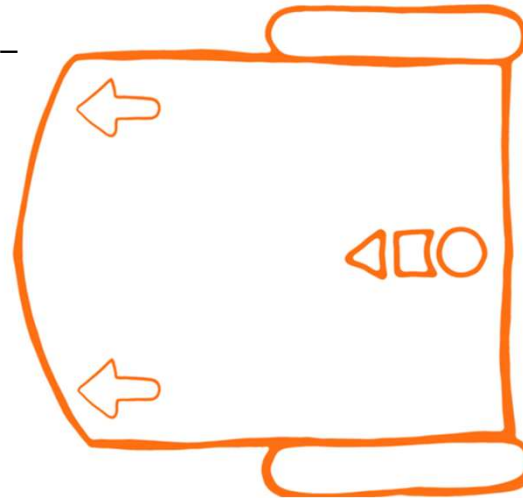
My Scientific Drawing of Edison

Bottom



Barcode Noticings and Wonderings with Edison +

Barcode name _____



Read the barcode

Put Edison on the outline above
Press the record button (round button) three times.
Edison will quickly drive forward and scan the barcode.
Turn the page for more instructions.

What to do with Edison

Cut a 25 cm piece of electrical tape and place it in the center of this page in between the arrows.

Push the play button (triangle) one time and write down what you notice about Edison's behavior.

Push the stop button (square) and write some wonderings you have.

Repeat **Read the barcode** directions on previous page.

Place Edison in a different position (left or right side of the electrical tape) and write noticings again,

What are you still wondering about? Write down your wonderings.



I noticed _____

I noticed _____

I noticed _____

I noticed _____

I wonder why? I wonder if...? I wonder what...?
I wonder how...? I wonder what would happen if...?

Testable?

I wonder _____

I wonder _____

I wonder _____

I wonder _____



Space left for line following experimentation



Test out one of your wonderings or use one of the following:
I wonder if Edison can line track on different colors of lines?
I wonder what color of line is the easiest (besides black) for Edison to follow?
I wonder what color of line is the hardest for Edison to follow?
I wonder if a thin or thick line is easier for Edison to follow?
I wonder if Edison can read a line in a dark room?

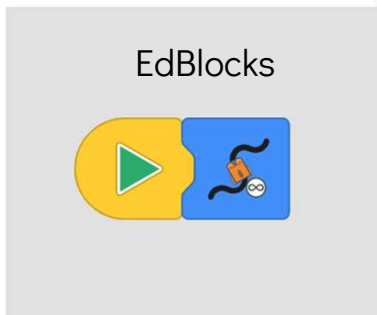
What's really happening with the hardware (Edison robot) and the barcode (the code read from scanning) stored in Edison's memory?



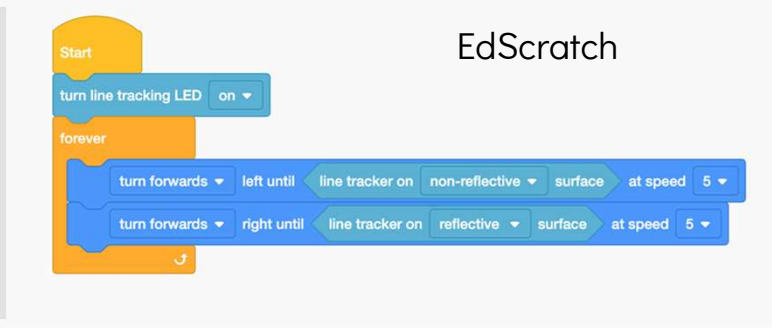
My notes:



What is the code behind the barcode?



Source: <https://www.edblocksapp.com/>
(from menu, Drive, Follow a line forever icon)



Source: <https://cloud.edscratchapp.com/>
(From menu, Load Demos, Follow_a_line)

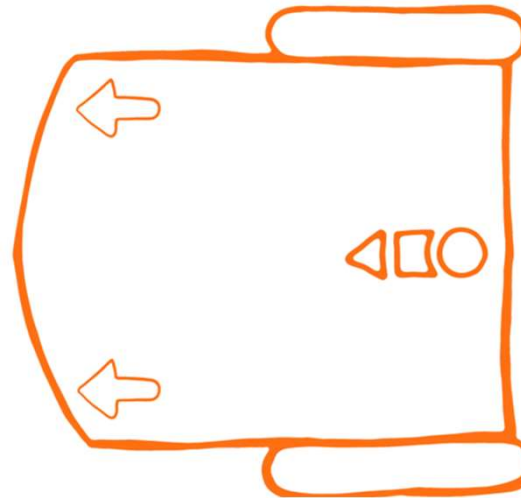
```
Line_tracking x Untitled Program x
1
2 #-----Setup-----
3
4 import Ed
5
6 Ed.EdisonVersion = Ed.V2
7
8 Ed.DistanceUnits = Ed.CM
9 Ed.Tempo = Ed.TEMPO_MEDIUM
10
11 #-----Your code below-----
12
13 Ed.LineTrackerLed(Ed.ON)
14
15 while True:
16     if Ed.ReadLineState()==Ed.LINE_ON_WHITE:
17         Ed.Drive(Ed.FORWARD_RIGHT, Ed.SPEED_1, Ed.DISTANCE_UNLIMITED)
18     else:
19         Ed.Drive(Ed.FORWARD_LEFT, Ed.SPEED_1, Ed.DISTANCE_UNLIMITED)
```

Source: <https://www.edpyapp.com/>
(From menu, Examples, Line_Tracking)



Barcode Noticings and Wonderings with Edison

Barcode name _____



Read the barcode

Put Edison on the outline above
Press the record button (round button) three times.
Edison will quickly drive forward and scan the barcode.

What to do with Edison

Push the play button (triangle) one time and clap your hands.
Write down what you notice about Edison's behavior.
Try several numbers of claps (single, double, triple) and write more noticings.
What wonderings do you have? Record at least two and try them out to see how Edison responds.

Source: <https://meetedison.com/content/EdBlocks-lesson-activities-complete-set.pdf>



I noticed _____

I noticed _____

I noticed _____

I noticed _____

I noticed _____

I noticed _____

I noticed _____

I noticed _____

+
-
-



I wonder why? I wonder if...? I wonder what...?
I wonder how...? I wonder what would happen if...?

Testable?

I wonder _____

I wonder _____

I wonder _____

I wonder _____

I wonder why? I wonder if...? I wonder what...?
I wonder how...? I wonder what would happen if...?

Testable?

I wonder _____

I wonder _____

I wonder _____

I wonder _____

+

;



What's really happening with the hardware (Edison robot) and the barcode (the code read from scanning) stored in Edison's memory?

+

-

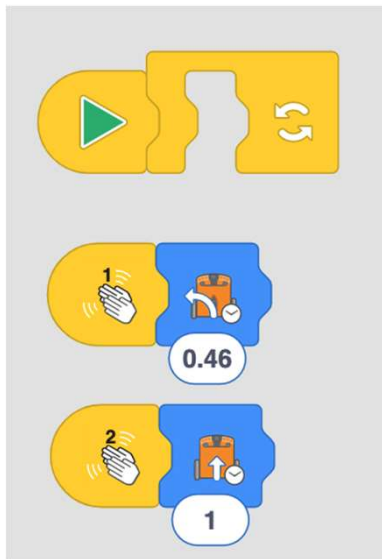
-

My notes:



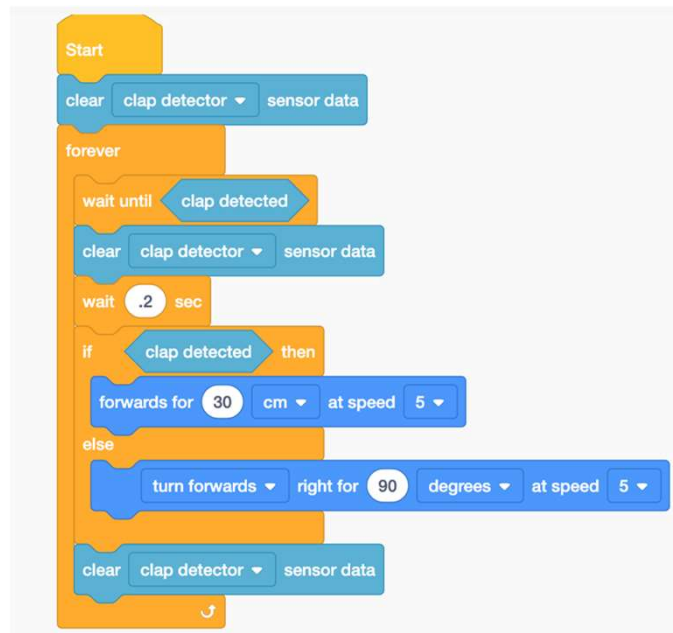
What is the code behind the barcode?

EdBlocks



Source: <https://www.edblocksapp.com/>
(from menu, Load Demos, Clap Controlled Driving)

EdScratch



Source: <https://cloud.edscratchapp.com/>
(From menu, Load Demos, Clap_controlled_driving)

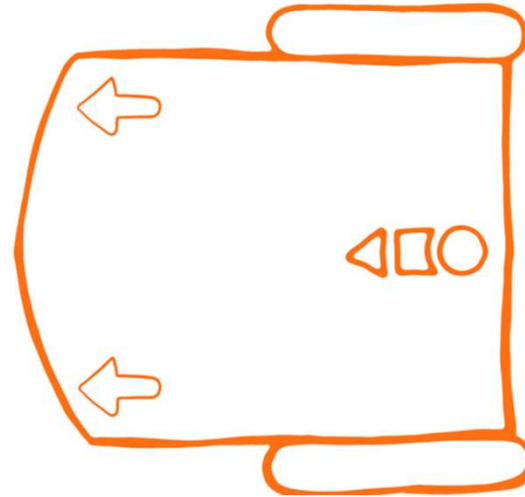
EdPy

```
Clap_controlled_driving x
1
2 #-----Setup-----
3
4 import Ed
5
6 Ed.EdisonVersion = Ed.V2
7
8 Ed.DistanceUnits = Ed.CM
9 Ed.Tempo = Ed.TEMPO_MEDIUM
10
11 #-----Your code below-----
12
13 while True:
14     #wait for a clap to be detected
15     waitClap()
16     #turn on LED to indicate a detection
17     Ed.RightLed(Ed.ON)
18     #wait a short amount of time so that the same clap is not detected twice
19     Ed.TimeWait(100, Ed.TIME_MILLISECONDS)
20     #clear the clap detection, so that the same clap is not detected twice
21     Ed.ReadClapSensor()
22     #wait a short amount of time to ensure the second clap has time to be detected
23     Ed.TimeWait(250, Ed.TIME_MILLISECONDS)
24     #test to see if a second clap has occurred
25     if Ed.ReadClapSensor() == Ed.CLAP_DETECTED:
26         #A second clap has been found! turn on the other LED and drive forwards
27         Ed.LeftLed(Ed.ON)
28         Ed.Drive(Ed.FORWARD, Ed.SPEED_10, 15)
29     else:
30         #only one clap detected. spin to the right
31         Ed.Drive(Ed.SPIN_RIGHT, Ed.SPEED_10, 90)
32     # wait a short time and clears the clap detection before looping
33     Ed.TimeWait(250, Ed.TIME_MILLISECONDS)
34     Ed.RightLed(Ed.OFF)
35     Ed.LeftLed(Ed.OFF)
36     Ed.ReadClapSensor()
37
```

Source: <https://www.edpyapp.com/>
(From menu, Examples, Clap_Controlled_Driving)

Guess the Barcode

Barcode name _____



Read the barcode

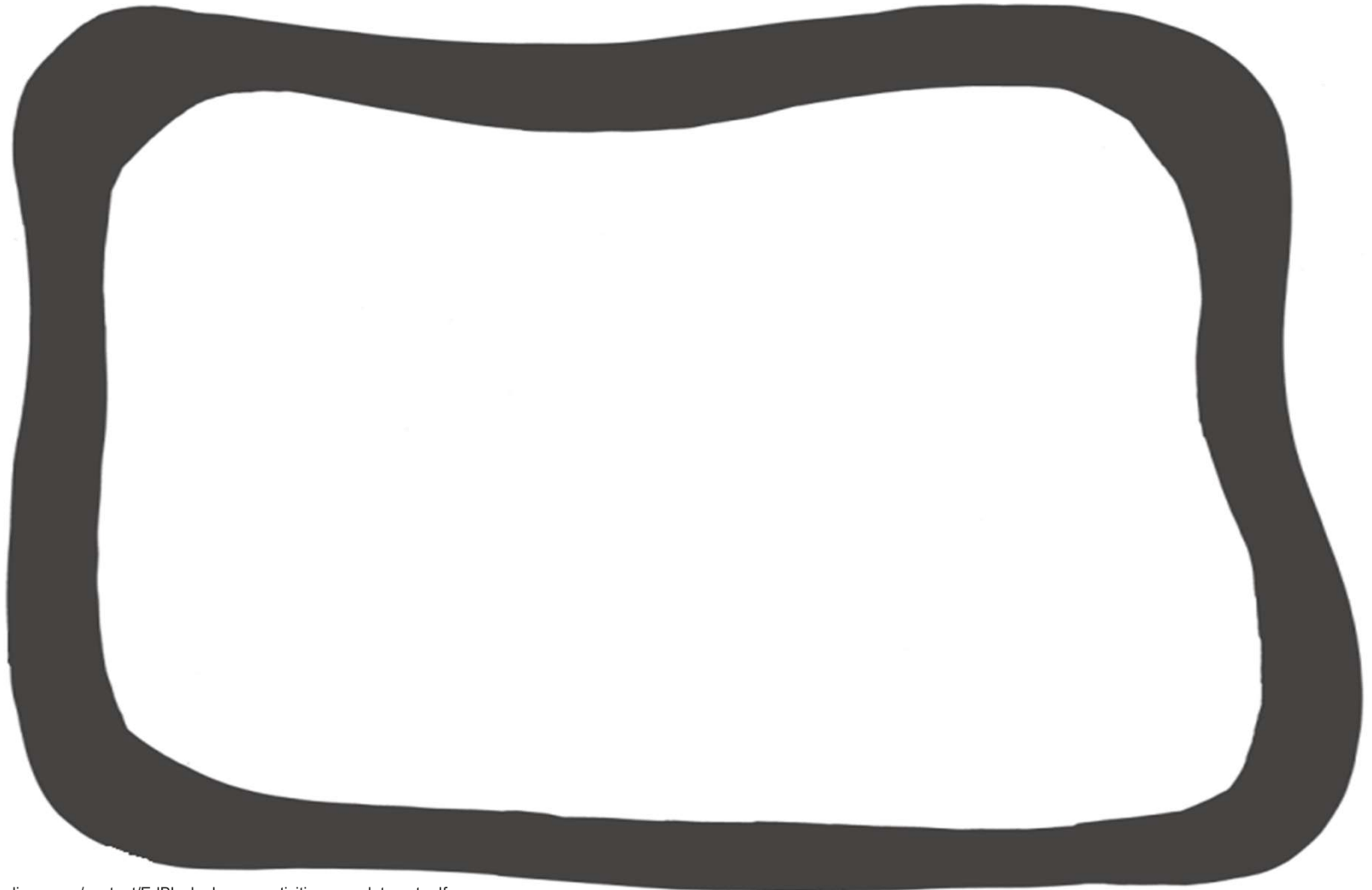
Put Edison on the outline above.
Press the record button (round button) three times.
Edison will quickly drive forward and scan the barcode.



What to do with Edison

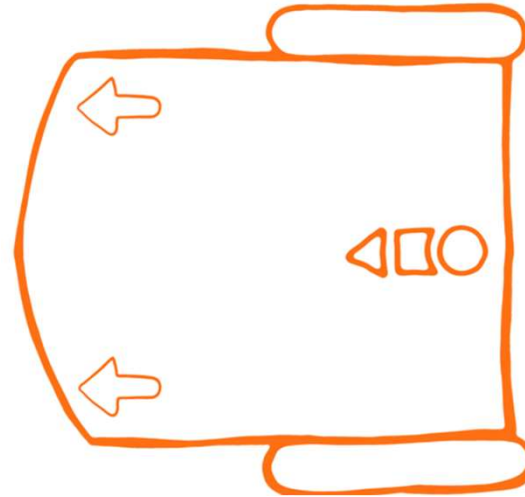
Use the track on the next page.
Put Edison inside the track. Press the play button (triangle button)

Observe what happens with Edison. What sensor(s) do you think Edison is using? What would you name this barcode?



Guess the Barcode

Barcode name _____



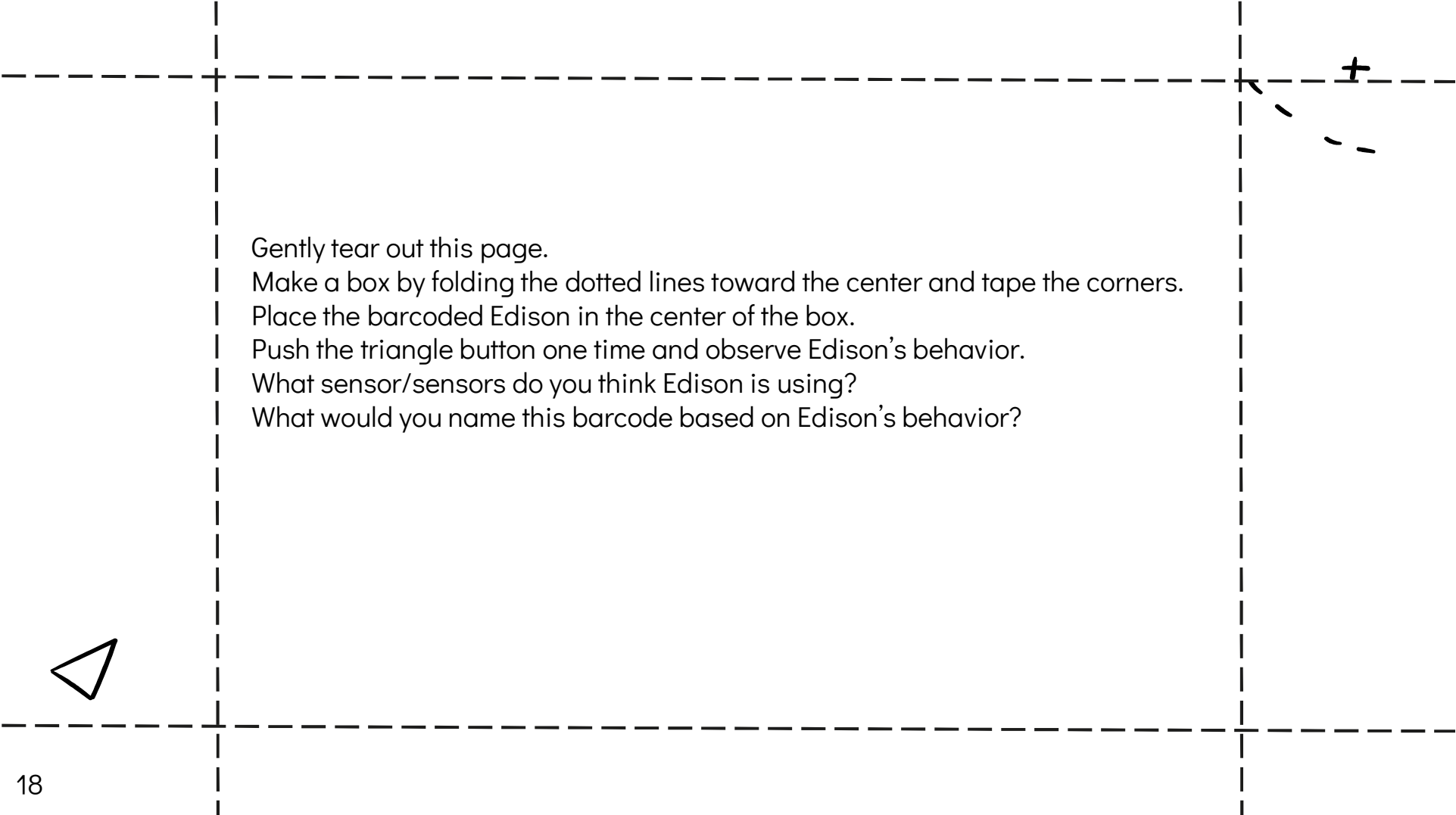
Read the barcode

Put Edison on the outline above

Press the record button (round button) three times.

Edison will quickly drive forward and scan the barcode.





Gently tear out this page.
Make a box by folding the dotted lines toward the center and tape the corners.
Place the barcoded Edison in the center of the box.
Push the triangle button one time and observe Edison's behavior.
What sensor/sensors do you think Edison is using?
What would you name this barcode based on Edison's behavior?



Image credits:
Booklet vector created by freepik - www.freepik.com (memphis cover collection - zig zags, dotted lines, and symbols)
<https://www.freepik.com/vectors/booklet>
Cover Robots: Robot cartoon vector created by freepik - www.freepik.com
<https://www.freepik.com/vectors/robot-cartoon>

