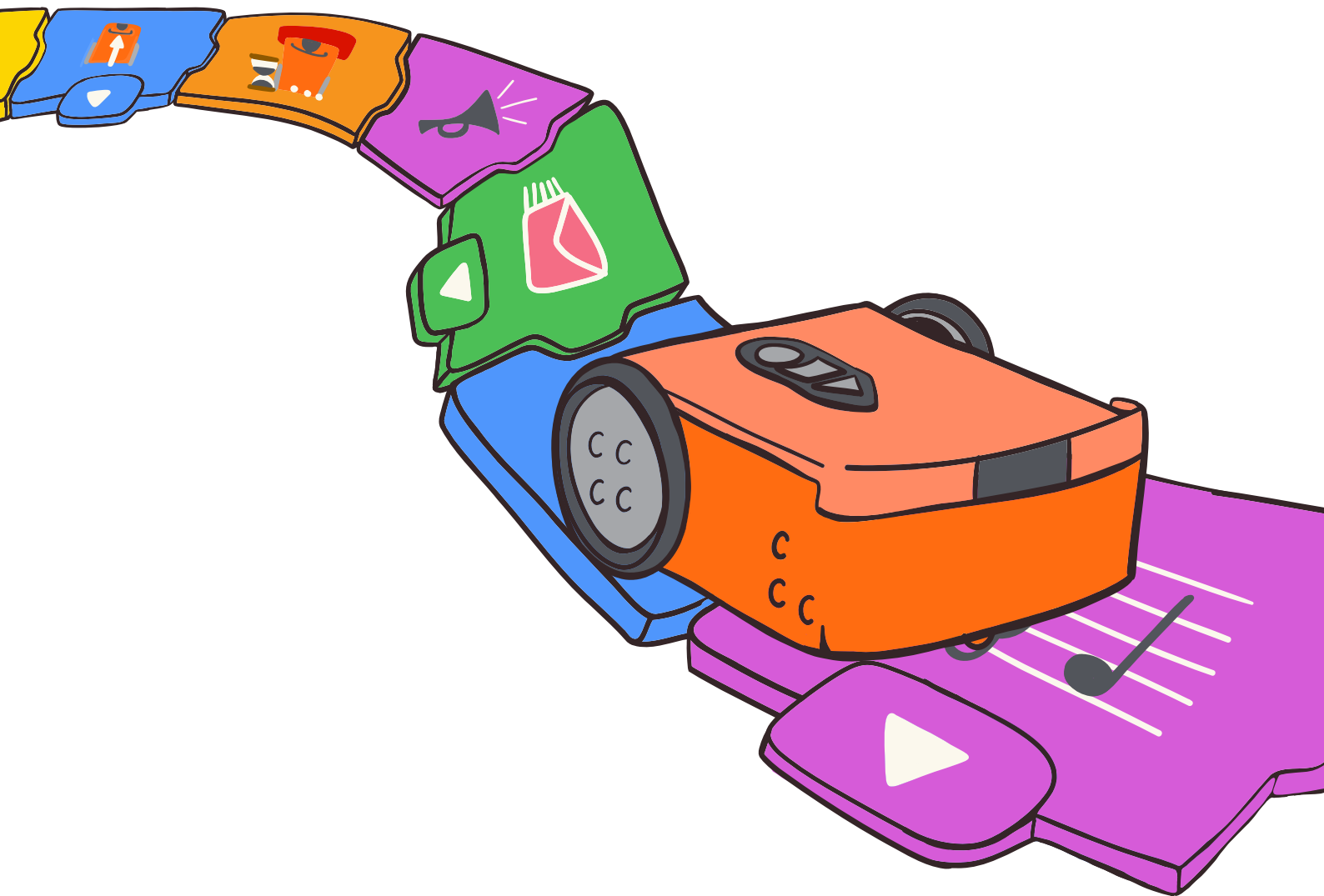




# EdBlocks Lesson Activities

Student activity sheet set for Edison V3



The EdScratch Lesson Plans Set by Microbric and Emma Dewar  
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Learn more at [www.meetedison.com](http://www.meetedison.com)

3.2.3.3.2 rev2

# Meet Edison

Name \_\_\_\_\_

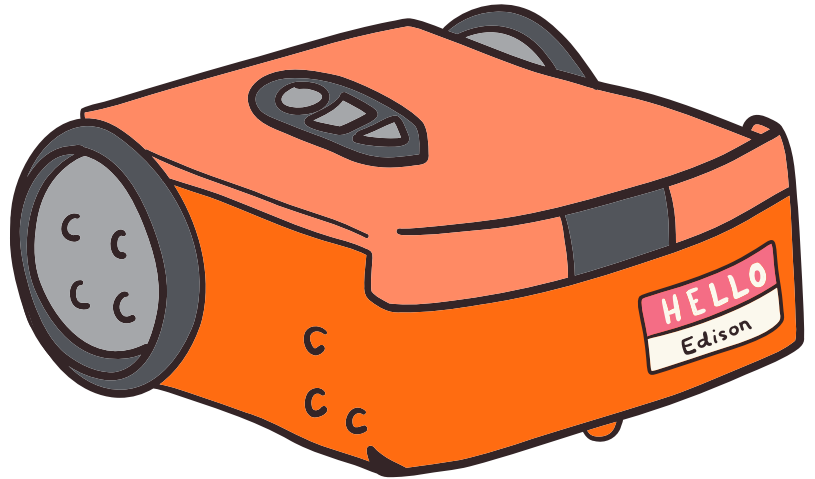
This is Edison, the programmable robot.

## What is 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 do you think of when you  
imagine a robot?

Draw your own robot here:



## What can you do with Edison?

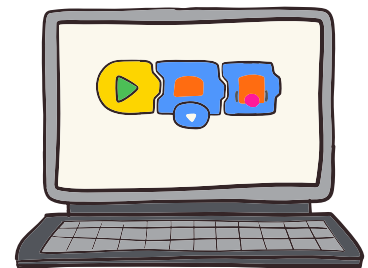
We can do a lot of different things  
using Edison!

This is because Edison can be programmed.  
Programmed means that we can tell  
Edison what to do. We can program Edison in  
different ways.

One way to program Edison is by using  
barcodes:



You can also program Edison using a  
computer:

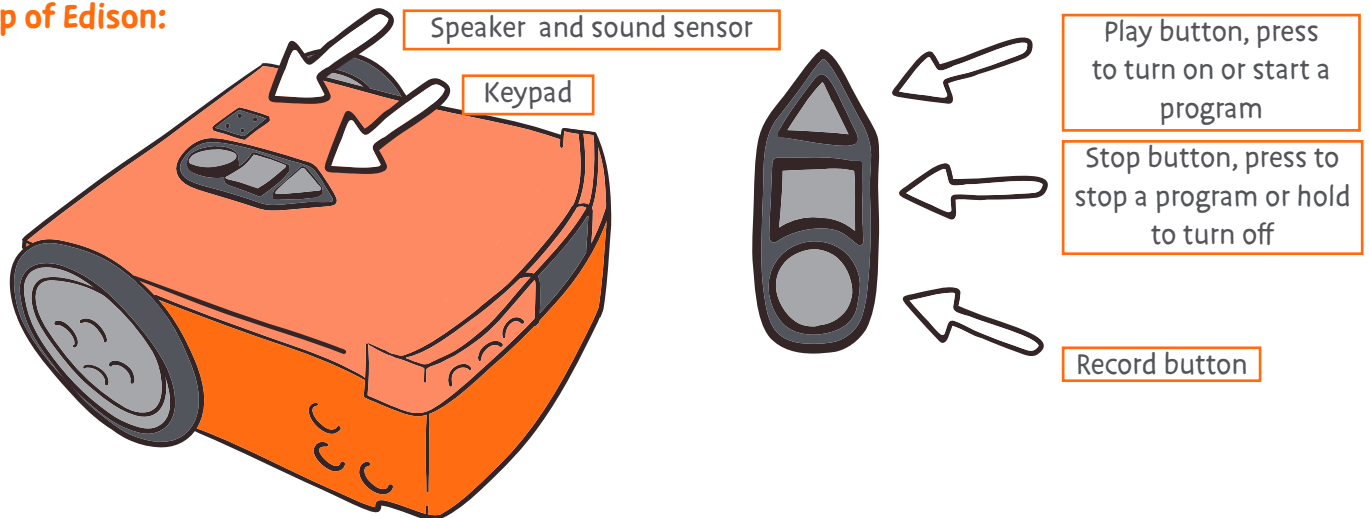


Let's use Edison to learn more about robotics  
and programming.

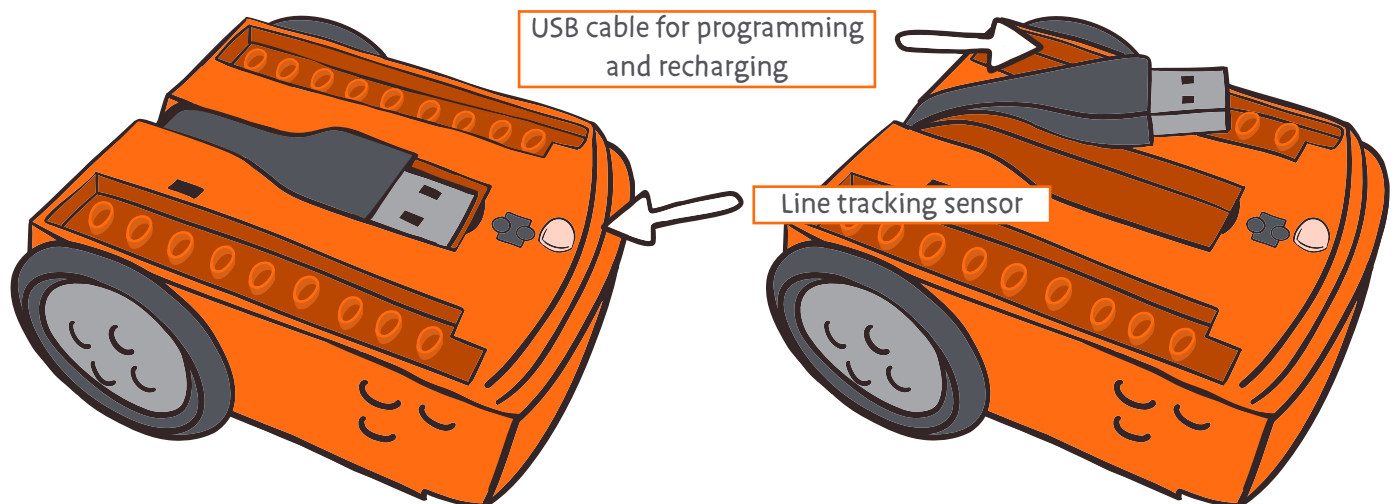
## Activity

Before we start programming Edison, let's get to know Edison. In the pictures below you can see all of Edison's different parts. Can you find all of these parts on your Edison robot?

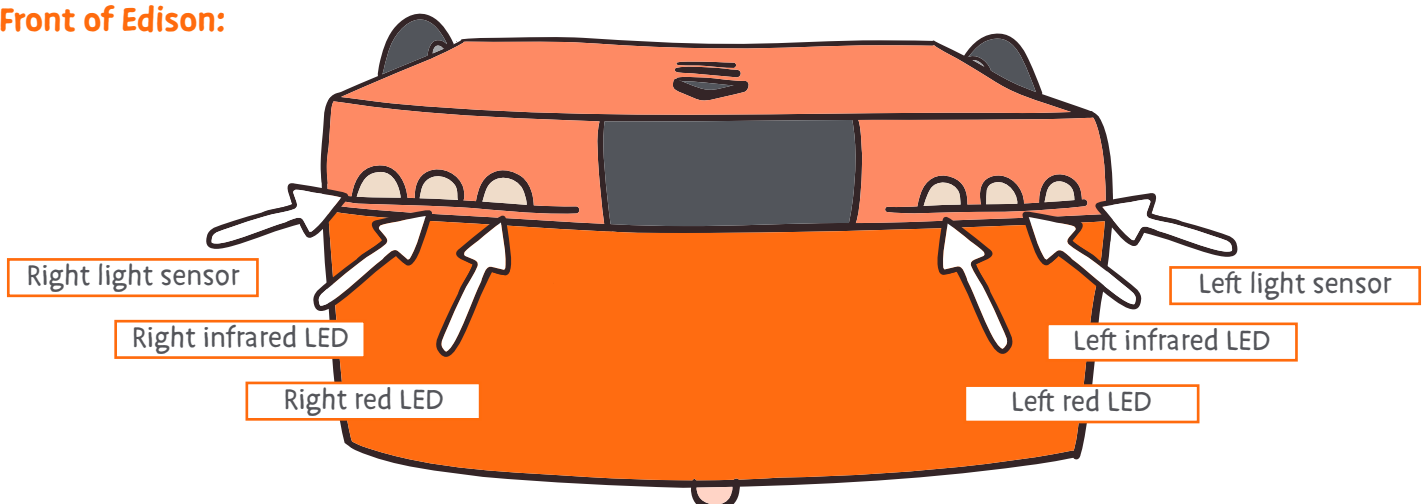
### Top of Edison:



### Bottom of Edison:



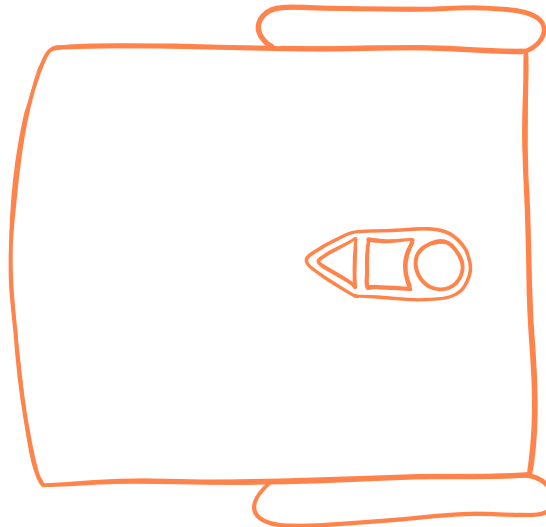
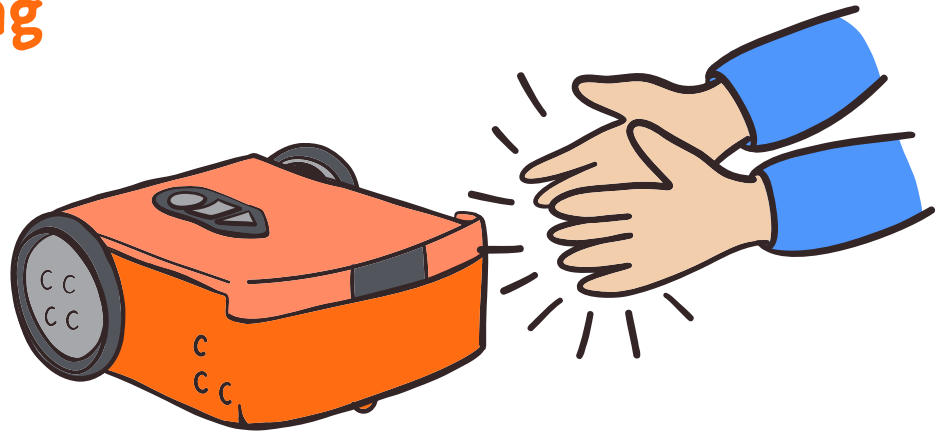
### Front of Edison:



# Clap controlled driving

Name \_\_\_\_\_

Edison has a sound sensor which can hear loud sounds, like when you clap your hands. The barcode below has a built-in program. The program makes Edison do things when it hears loud sounds.



## Read the barcode



Put Edison on the outline.

Press the record button (round button) three times. Edison will drive forward and scan the barcode.

## What to do with Edison

Put Edison on the floor or table. Press the play button (triangle button). Now, clap your hands one time. Edison will turn to the right.

Clap your hands two times. Edison will drive forward.

**If Edison can't hear you clapping, you can tap your finger on the top.**

## Activity

**Let's make two Edison robots have a race.**

You can make your own race track.

Don't forget to scan the barcode with Edison.

Get ready to race!

Clap your hands or tap Edison two times so that it will drive forward. When Edison stops, clap two more times.

The first Edison to reach the finish wins!





# Avoid obstacles



Edison can tell when there are things in front of it.

How?

Edison uses infrared light to detect objects. You can't see this light because infrared light is invisible to people.

Edison uses infrared light to find things in its path.

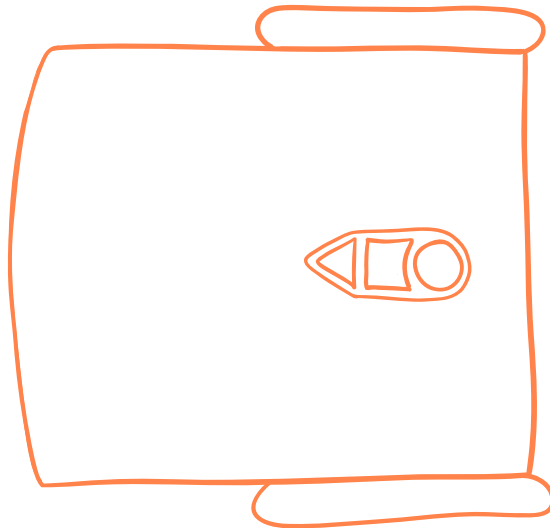
If there is something in front of Edison, Edison can turn away and avoid running into it.

## Read the barcode

Put Edison on the outline below.

Press the record button (round button) three times.

Edison will drive forward and scan the barcode.

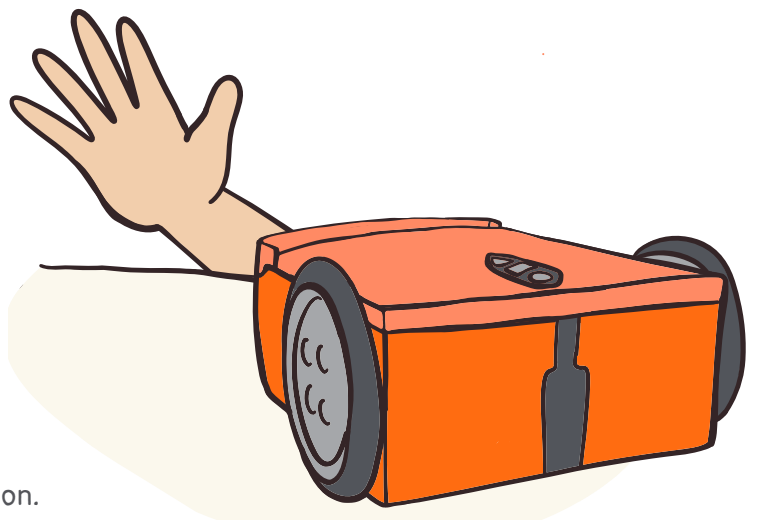


## What to do with Edison

Put Edison on the floor or table. Put some objects around Edison.

Press the play button (triangle button).

Watch as Edison drives towards an obstacle. Edison will see the object, turn and drive away in a different direction.



## Activity

**Let's trap Edison.**

In a group, sit at a table and scan the barcode with Edison.

Put Edison in the middle of the group. Everyone put your hands up or find things from around the classroom to block Edison.

Press the play button (triangle button).

Edison will drive around. When Edison finds an obstacle, Edison will turn and try to escape another way.

**Don't let Edison escape!**

# Follow a torch

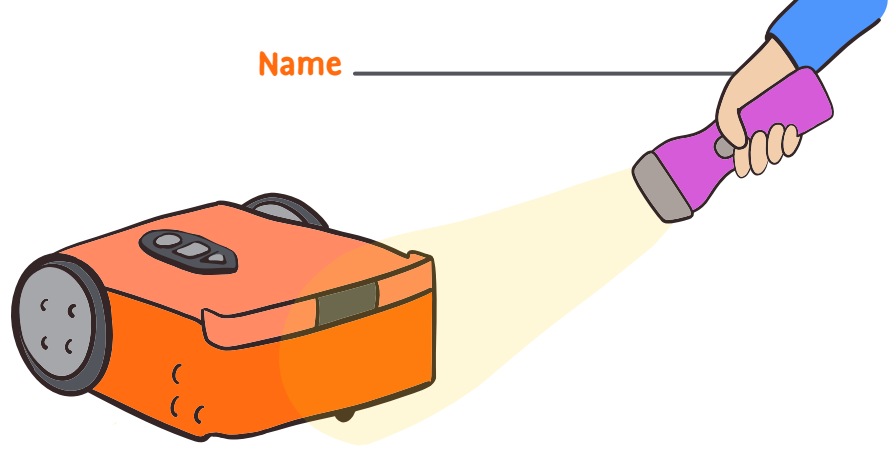
Name \_\_\_\_\_

Edison has two light sensors.

The light sensors let Edison see light.

The barcode below has a built-in program.

The program makes Edison follow the brightest light.

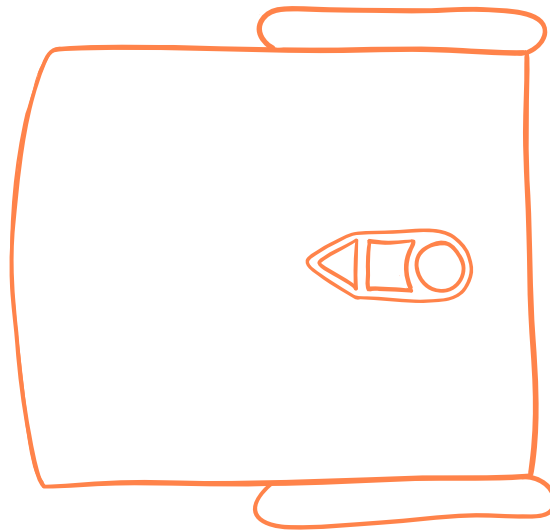
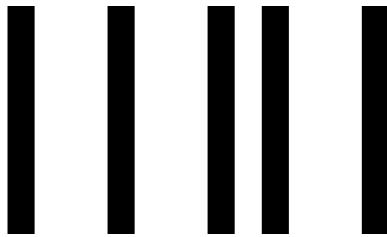


## Read the barcode

Put Edison on the outline below.

Press the record button (round button) three times.

Edison will drive forward and scan the barcode.



## What to do with Edison

Put Edison on the floor or table.

Get a flashlight ready.

Press the play button (triangle button).

Now shine the flashlight at Edison.

Edison will follow the flashlight around.

## Activity

**Create a road map that Edison can drive on.**

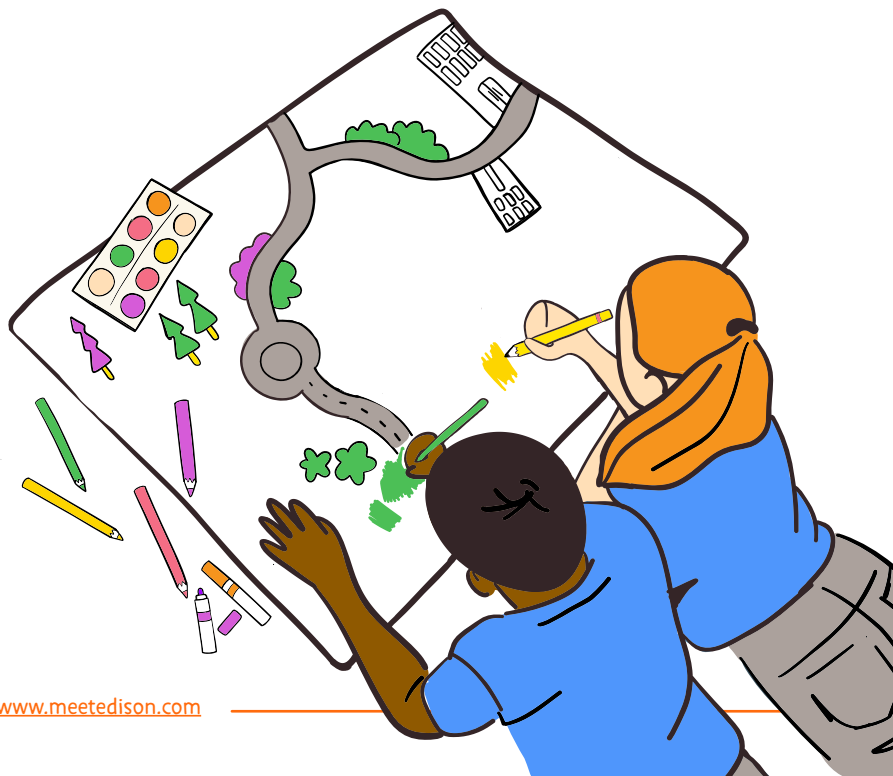
You could make a map of your town, a busy city scene, or have Edison help on a farm.

Using a large piece of paper, draw or paint any design you like.

Scan the barcode with Edison.

Get a flashlight ready and put Edison on the floor. Press the play button (triangle button). Then, shine the flashlight at Edison.

Use the flashlight to get Edison to drive around the map.



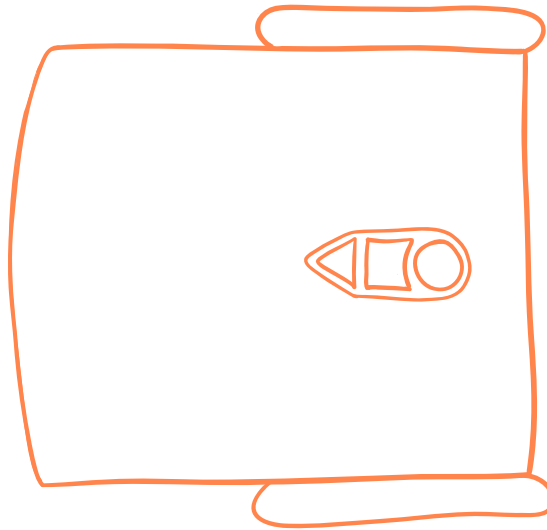
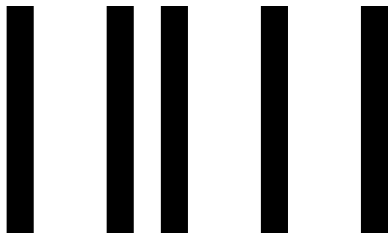
# Line tracking

Edison uses a tracking sensor to see the difference between dark and light surfaces.

Edison can use this sensor to follow a black line.

The barcode below has a built-in program.

The program tells Edison to find the black line and follow it around.



## Read the barcode

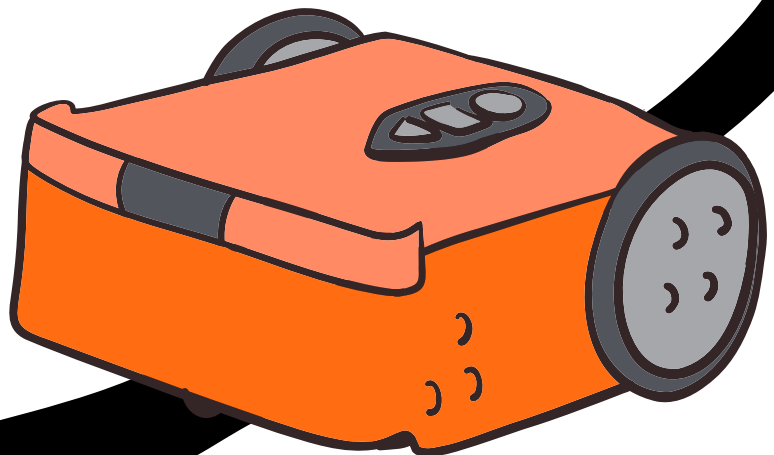
Put Edison on the outline above.  
Press the record button (round button) three times.  
Edison will drive forward and scan the barcode.



## What to do with Edison

### Use the track on the next page.

Put Edison inside the track.  
Don't put Edison on top of the black line to start. Put Edison next to the line instead.  
Press the play button (triangle button).  
Edison will search for the track.  
Once Edison finds the track, Edison will continue to drive around on the track.



Edison track

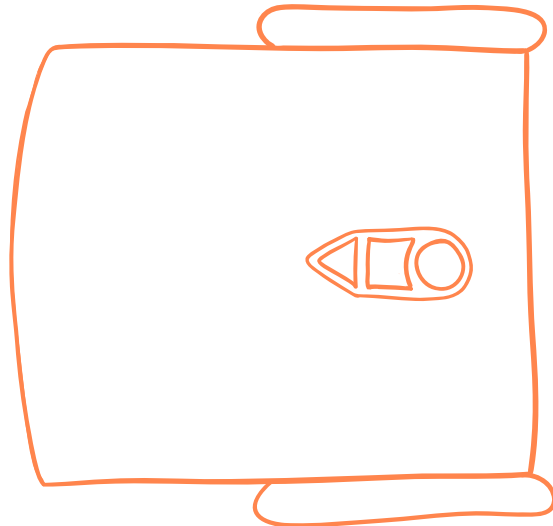
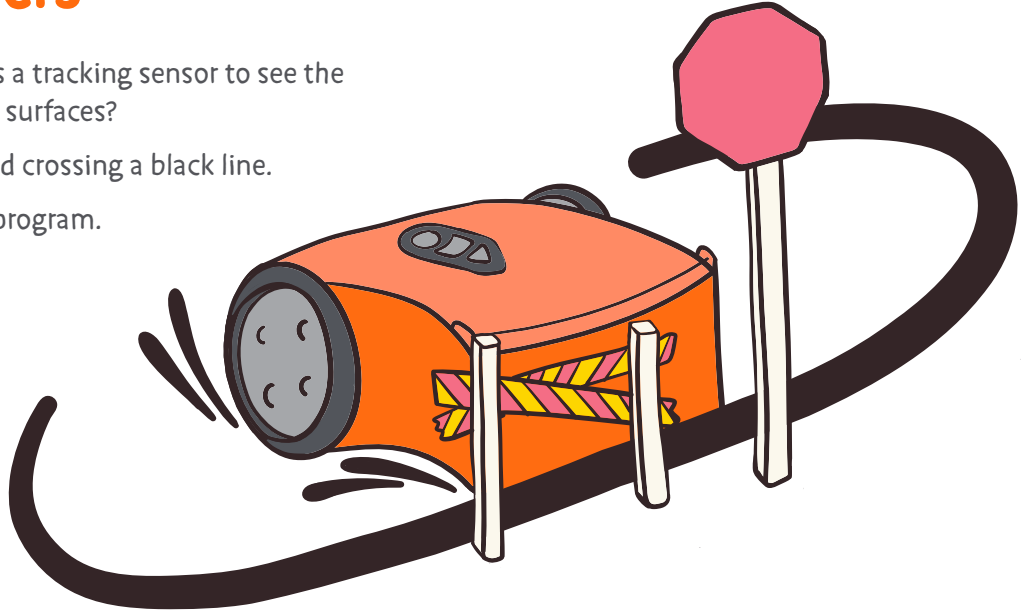


# Bounce in borders

Do you remember that Edison has a tracking sensor to see the difference between dark and light surfaces?

Edison can use this sensor to avoid crossing a black line.

The barcode below has a built-in program.  
The program tells Edison not to cross a black line.



## Read the barcode

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



## What to do with Edison

### Use the track on the previous page.

Put Edison inside the track. Press the play button (triangle button).  
What happens when Edison senses a black line?  
Instead of crossing the line, Edison will turn away and drive somewhere else.

## Activity

Try making a really big track using black tape on the floor.

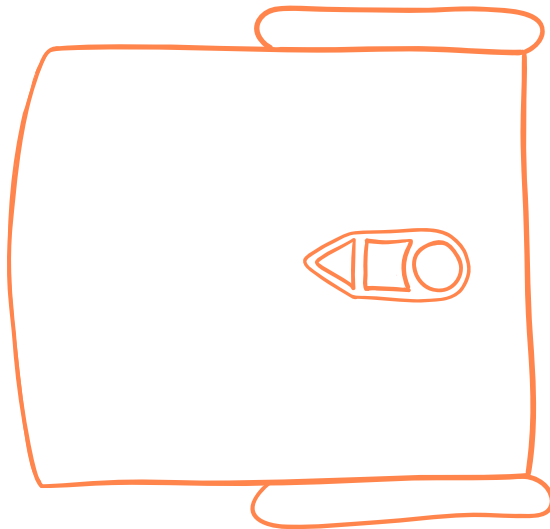
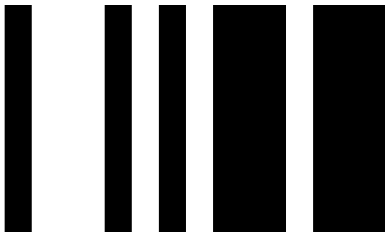
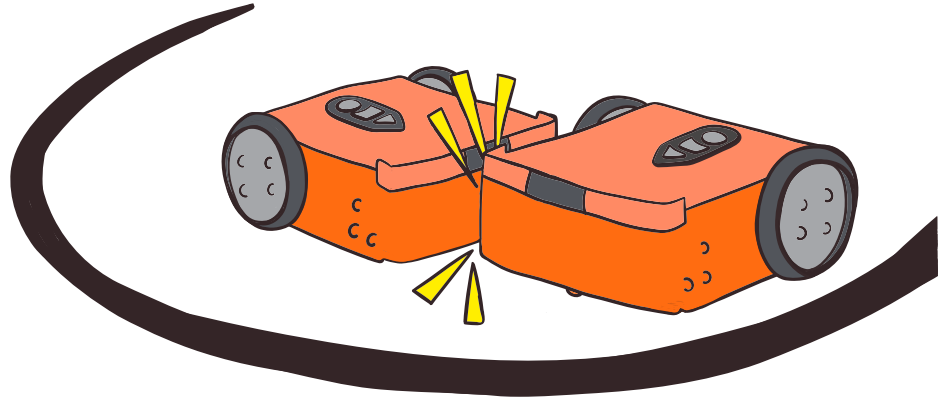
# Sumo wrestle

The barcode below has a built-in program.  
The program combines two of Edison's other programs – bounce in borders and obstacle detection.

What does the combined program do?

**It lets two Edison robots sumo wrestle!**

The obstacle detection part of the program helps the robots find the other robots.  
The line detection helps Edison find a line to knock the other robot out of the ring.



## Read the barcode

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



## What to do with Edison

You will need to work together for this activity.

Scan the barcode with two Edison robots.  
Make a ring for your Edison sumo match.

Use a dark colored tape to make the sumo ring, be sure to make the ring big enough for both robots to drive around inside.

## Activity

Put both Edison robots in the ring.  
Press the play button (triangle button) on both robots at the **same time**.

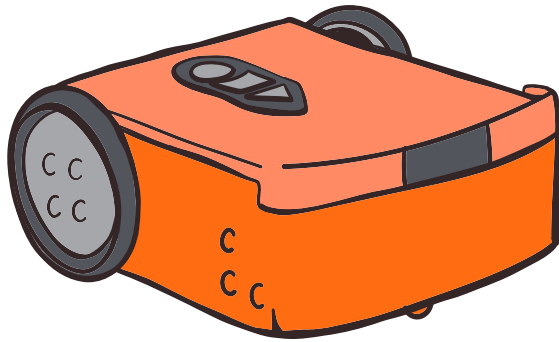
Each Edison robot will start to drive around the inside of the circle slowly, looking for the other robot.

When one Edison sees the other, it will speed up to hit it and try to push it out of the ring.

**The last Edison in the ring wins!**

# Welcome to EdBlocks

You already know Edison. 



Now it is time to use EdBlocks and create your own programs.



## What is EdBlocks?

EdBlocks is a robot programming language we can use to program Edison. You can program Edison to do different things using EdBlocks.

## How does EdBlocks work?

Imagine you are baking a cake.  
How would you know what to do?  
When you read a cookbook, you follow each step **one by one**.



 **Start here**  **and follow the steps one-by-one** 

Edison also follows steps one by one, using EdBlocks.  
Edison reads EdBlocks from left to right, starting at block one.  
Edison then reads the EdBlocks one block at a time.  
So, Edison can follow the same instructions, just in a different way.

## Find the answer

Let's practice using EdBlocks.

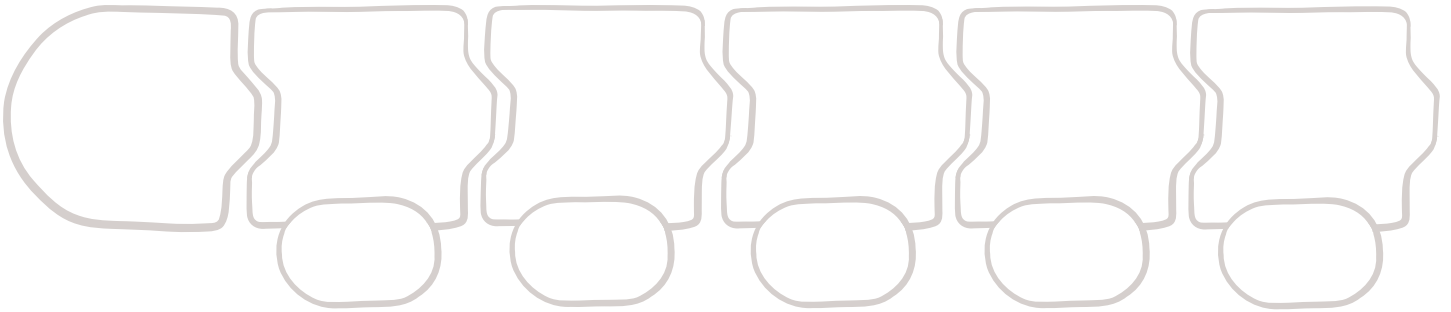
We need to get Edison to do several things, **one by one**.

Get Edison to do the following things in this order



## Your turn

Glue the blocks into the correct order below and write the amount of time/degrees Edison will be turning or driving for.

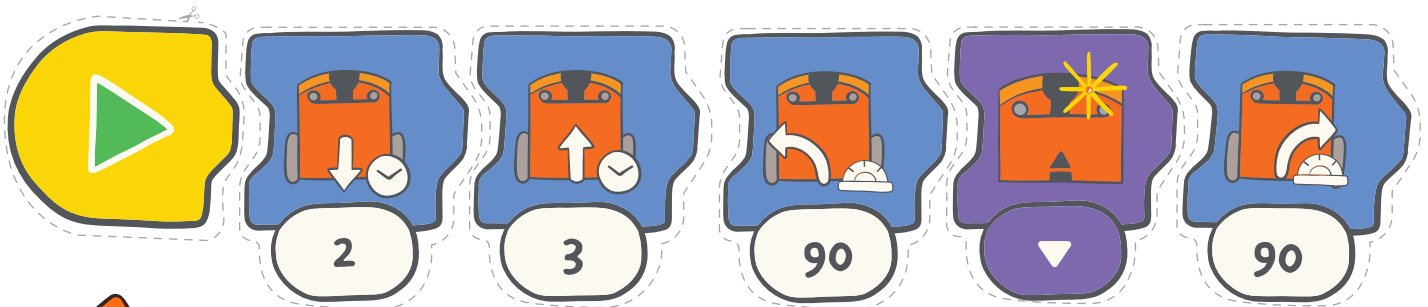


Look at the blocks below.

These are the blocks we need to write the program, but they are in the wrong order and have no times added.

**Edison doesn't know what to do yet.**

Cut the blocks out and glue them in the correct **step-by-step** order above.



This is the start block



# Let's download a program from an iPad

Now that you know about Edison and EdBlocks, we can use EdBlocks to tell Edison what to do. To do this, we need to download a program to Edison.

This time, we are going to load a program that has already been made. Once you know how to download a program, you can start to make your own programs.

## Program Edison

### Step 1: Open the EdBlocks app

Go to [www.edblocksapp.com](http://www.edblocksapp.com) in Chrome, Edge, or Opera.

### Step 2: Select 'Menu'

Click on the menu button.



### Step 3: Select 'Load Demos'

Click on Load Demos and select the program called 'Test\_Program.'

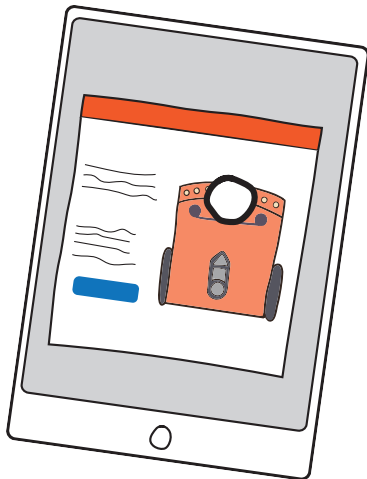


### Step 4: Program Edison

Press the 'Program' button in the app. (top right corner)

### Step 5 : Screen flasher

Place your Edison V3 over the outline and press the round button one time, both LEDs will come on.



### Step 6: Download program

Press 'download program' in the download box, and the program will start downloading to Edison V3.

**Download Program**

### Step 7: Success

Once downloaded you will hear Edison play a success sound, now you can disconnect Edison from the USB port and press the triangle button to run the program.

# Let's download a program from a computer

Now that you know about Edison and EdBlocks, we can use EdBlocks to tell Edison what to do. To do this, we need to download a program to Edison.

This time, we are going to load a program that has already been made.

Once you know how to download a program, you can start to make your own programs.

## Program Edison

### Step 1: Open the EdBlocks app

Go to [www.edblocksapp.com](http://www.edblocksapp.com) in Chrome, Edge, or Opera.

### Step 2: Select 'Menu'

Click on the menu button.



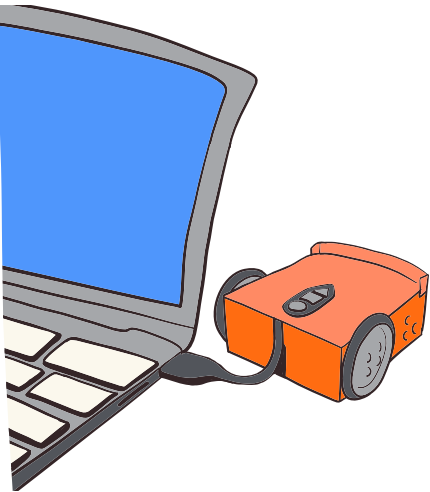
### Step 3: Select 'Load Demos'

Click on Load Demos and select the program called 'Test\_Program.'



### Step 4: Plug Edison in

Connect Edison to the computer with the USB.



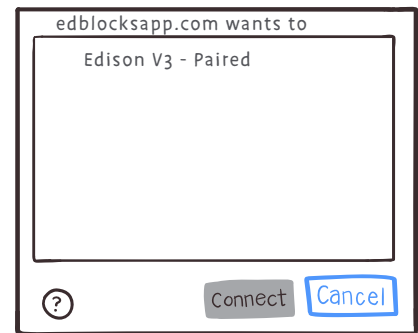
### Step 5: Program Edison

Click on 'Program Edison.' (top right corner)



### Step 6: Click connect

Select Edison V3 from the popup box and click 'connect.' Edison will beep when the program has downloaded.

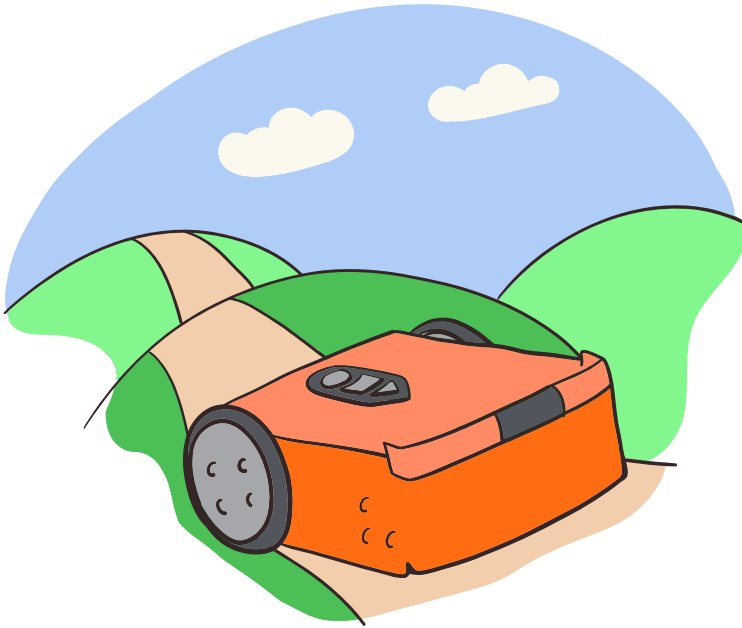


### Step 7: Success

Once downloaded you will hear Edison play a success sound, now you can disconnect Edison from the USB port and press the triangle button to run the program.

# Let's drive

Name \_\_\_\_\_



## What to do with EdBlocks

We can program Edison to drive forward for a set amount of time using EdBlocks.

Using the EdBlocks app, find the block to make Edison drive forward for a set amount of time.

Like this:



You can change the amount of time by clicking on the number box and typing in the amount of seconds you want.

## What to do with Edison

**Let's get Edison to drive forward on the track (on the next page).**

How many seconds do you think it will take Edison to drive the track?

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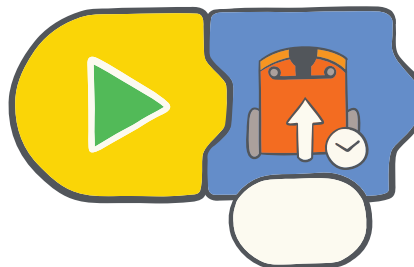
Write a program for Edison using EdBlocks.

Download the program to Edison, then give it a try!

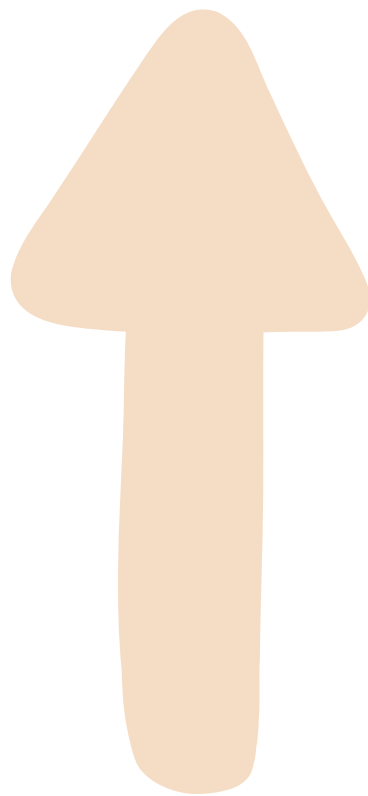
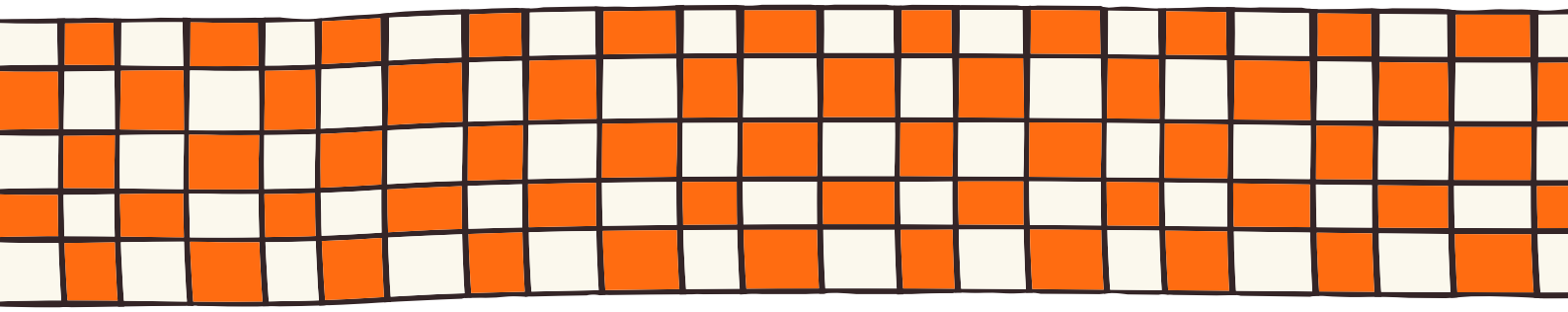
Try and get Edison to drive from the start line and stop driving after crossing the finish line. If Edison didn't cross the finish line try and add some more drive time. If Edison kept on driving off the page you can take away some of the drive time.

## Find the answer

How many seconds did it take Edison to travel from the start to finish?

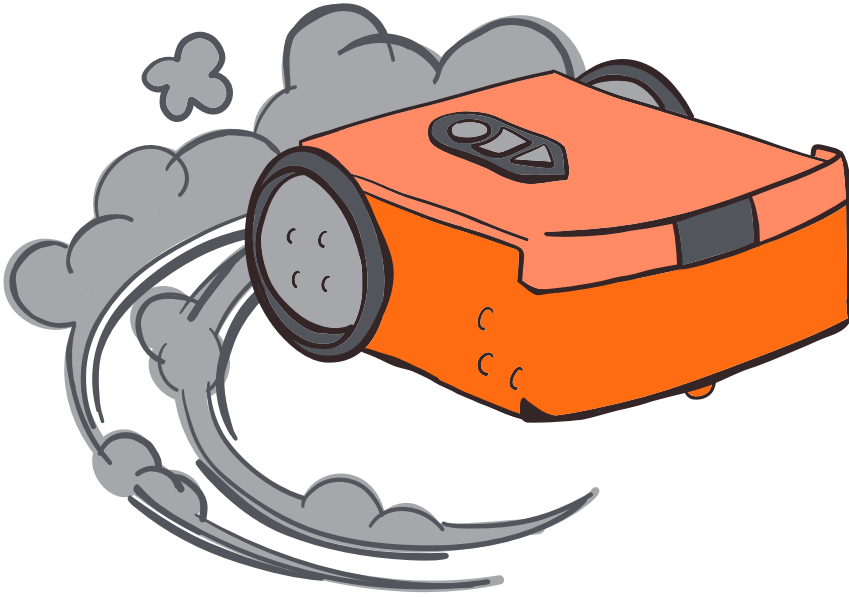


← Write your results here



# Let's turn

Name \_\_\_\_\_

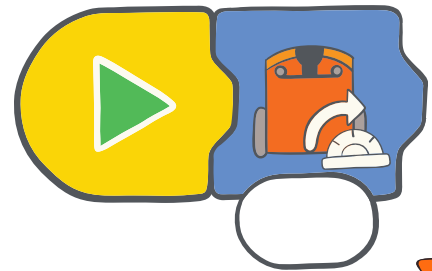


## What to do with EdBlocks

We can program Edison to turn left or right for a set amount of degrees using EdBlocks.

Using the EdBlocks app, find the block to make Edison turn right for a set amount of degrees.

Like this:



You can change the amount of degrees by clicking on the number box and typing in the degrees you want.

## What to do with Edison

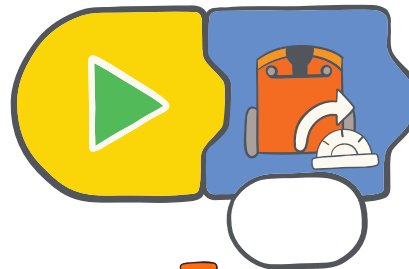
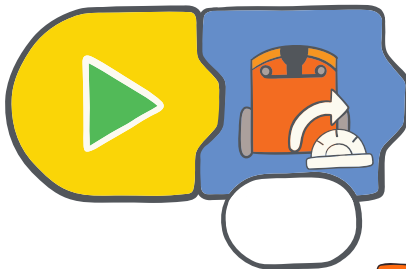
Let's get Edison to make some turns using the roads on the next page.

Program Edison using EdBlocks. Then, put Edison on the road to test your program. Try changing the amount of degrees in EdBlocks to get Edison to follow the arrows and stop at the finish line.

## Find the answer

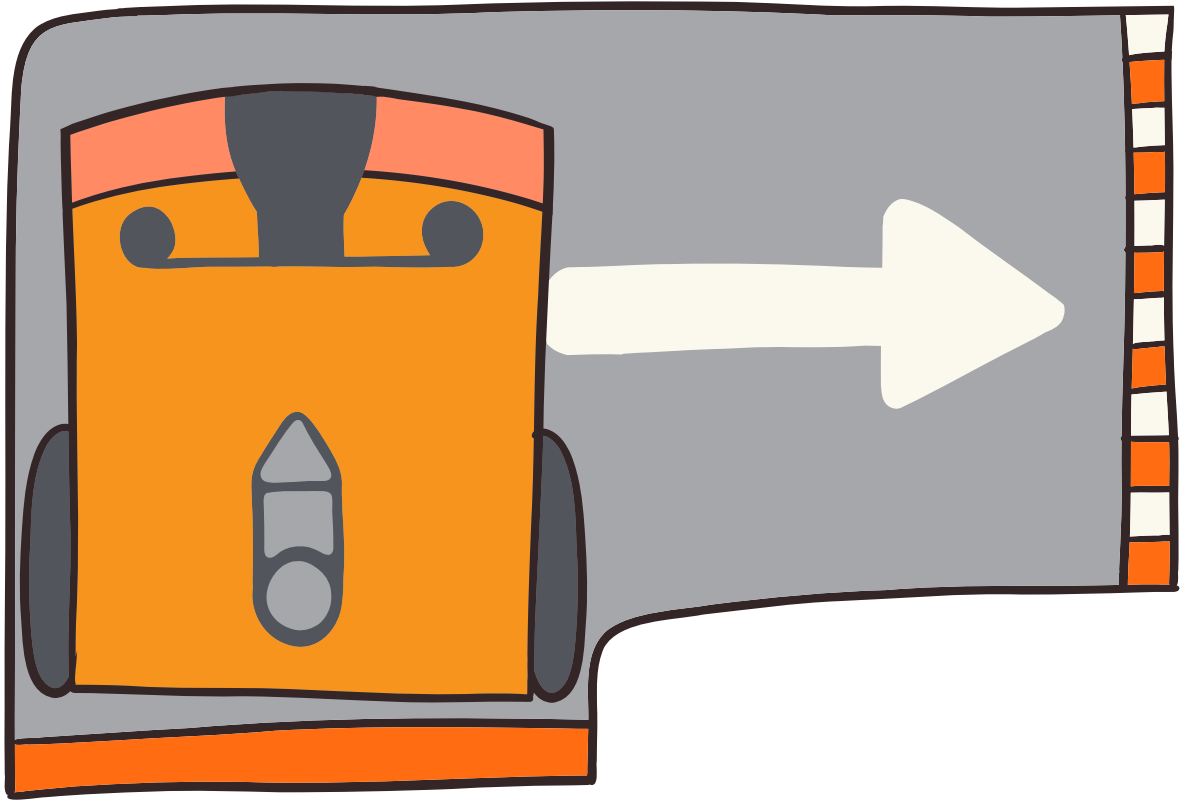
How many degrees did it take Edison to turn right?

How many degrees did it take Edison to turn all the way around?

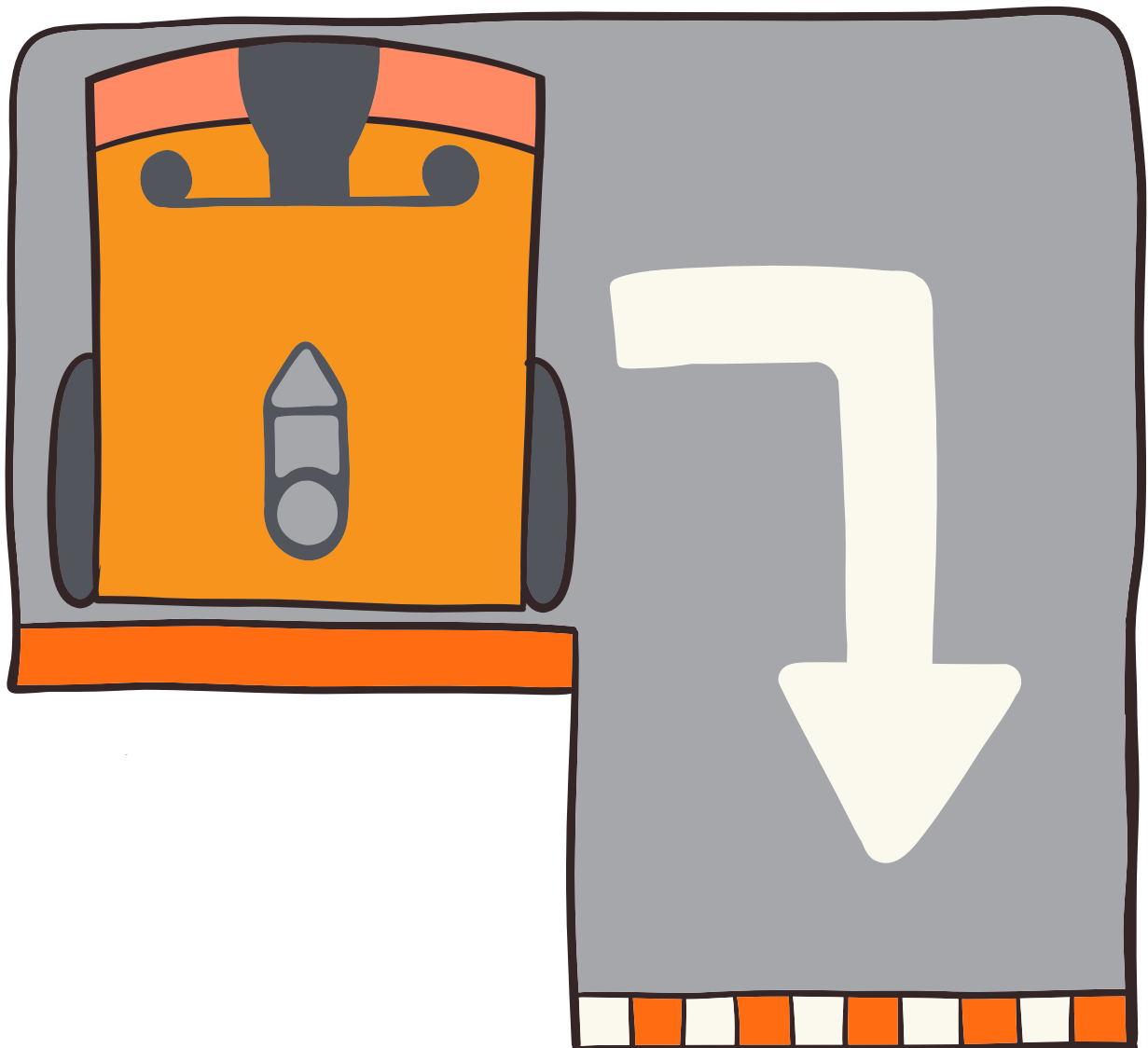


Write your results here

Turn right



Turn all the way around



# Let's try a maze

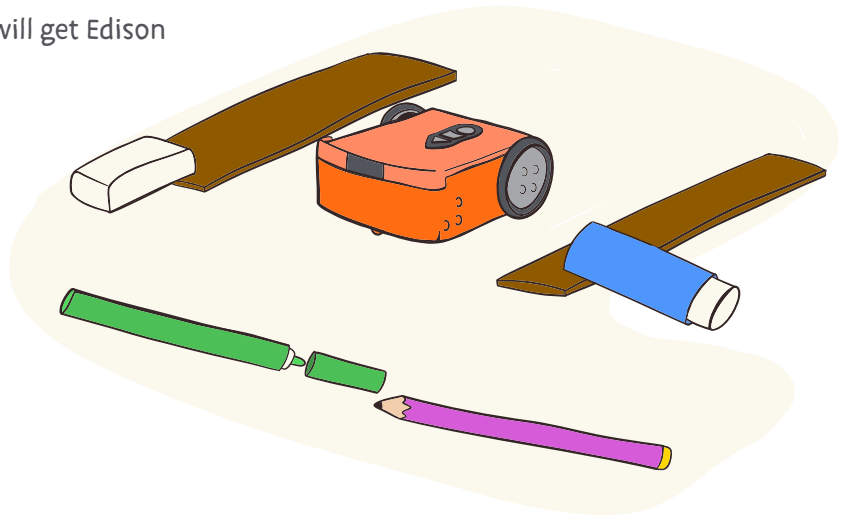
## What to do with EdBlocks

Using the EdBlocks app, design a program that will get Edison through the maze on the next page.

You can beat the maze using five blocks.

Drive straight is the first block you will need.

What are the next four blocks?



## What to do with Edison

Download your program to Edison, then place Edison at the start of the maze.  
Test to see if your program works.

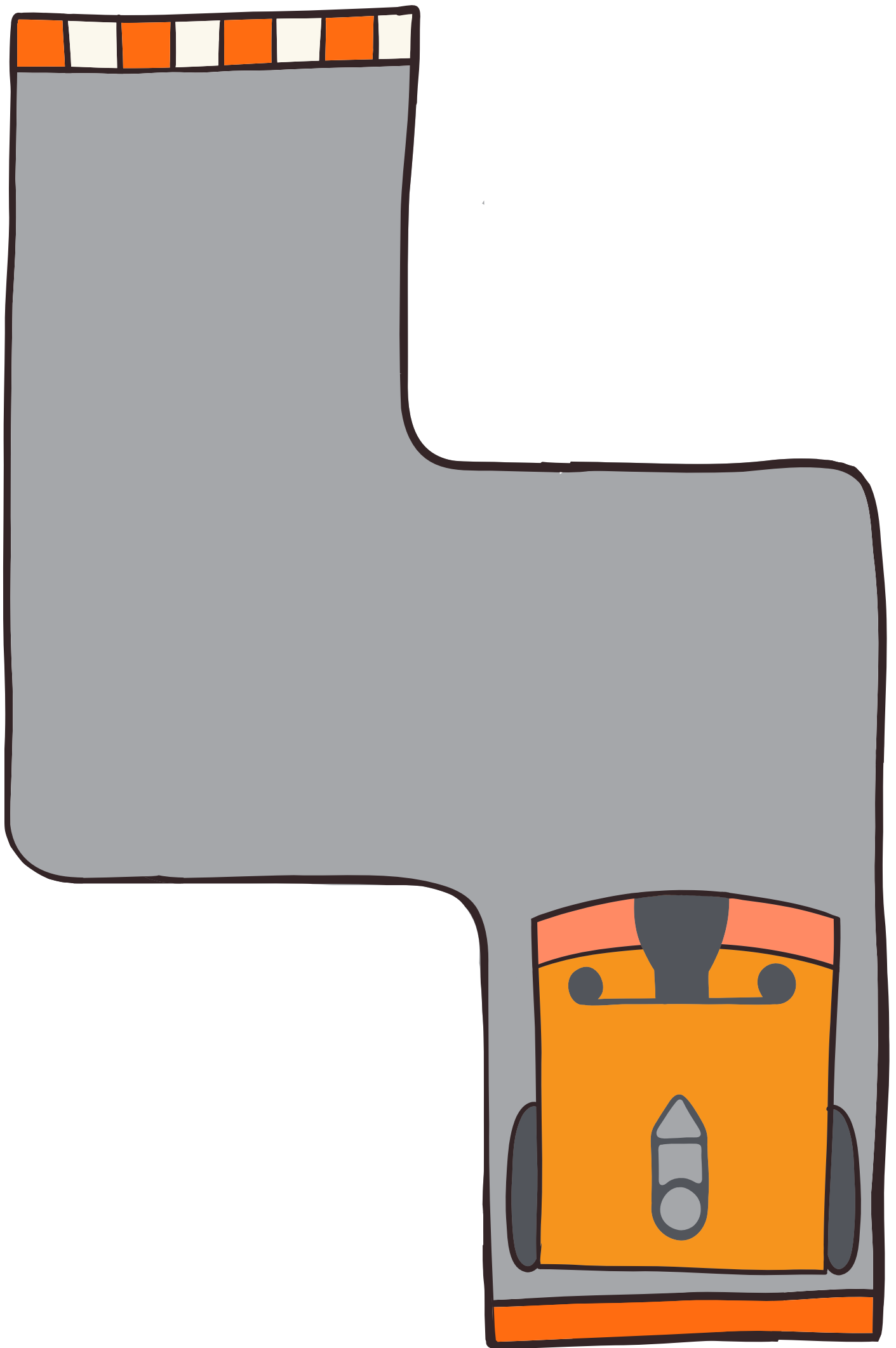
Edison needs to reach the finish line to complete the maze.

## Find the Answer

Once you complete the maze, write down your program here:

Draw your arrow direction here.

Write your times here.

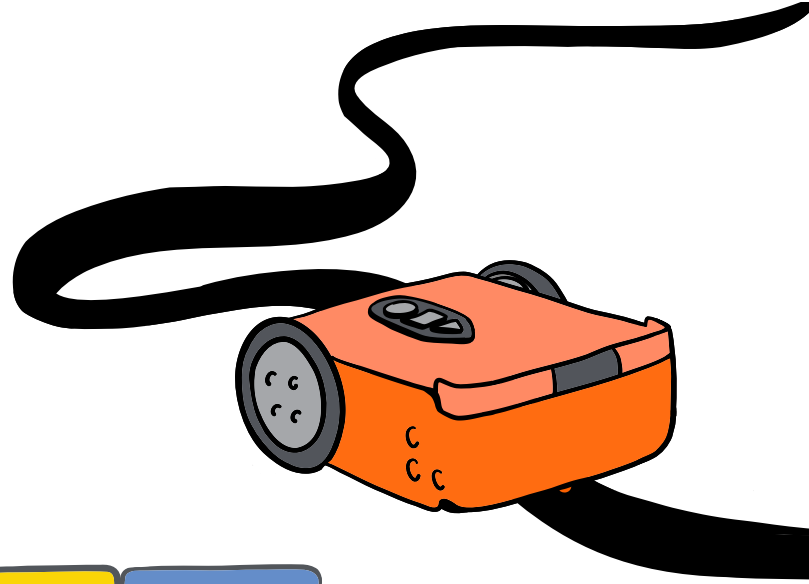




# Let's follow a line

Remember Edison's tracking sensor?  
It is the sensor that lets Edison see the difference between dark and light surfaces.

We can make a program that uses the tracking sensor to tell Edison to drive along and follow a black line.



## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:

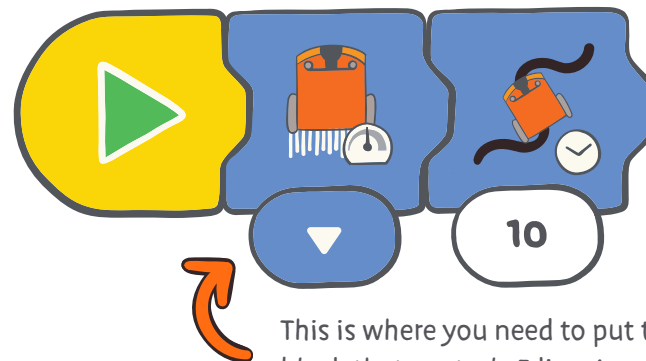
This program tells Edison to travel along a black line. You can change how many seconds Edison will follow the line.



You can also change the speed that Edison is driving. You can choose slow, normal, or fast.

Now, make a program with a speed control block and the follow the line block.

Set the time for however long you like.



This is where you need to put the block that controls Edison's speed.

## What to do with Edison

Create your own track for Edison to travel along. Use a large piece of paper and black paint, marker or tape to make a line for Edison to follow. The track line needs to be a dark colour and at least 1.5 cm wide.

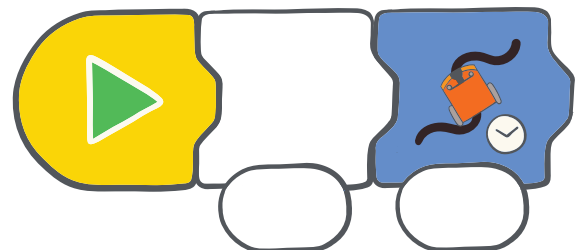
Download your program to Edison.

Put Edison next to your track and run the program by pressing the play (triangle) button.

Now try using a different speed block in your program. What changed? \_\_\_\_\_

## Find the answer

- Which block makes Edison drive at the fastest speed?  
Draw that block into the program.
- How long did you have Edison follow a line?  
Write your time into the program.
- Think about how Edison drove on your track.  
Did your track give Edison enough space to run your program?  
How could you make your track or your program better?




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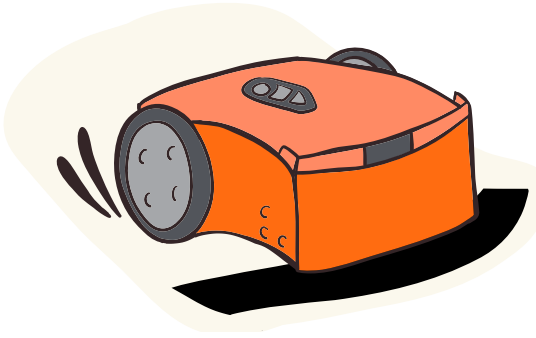


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# Let's stop at a black line



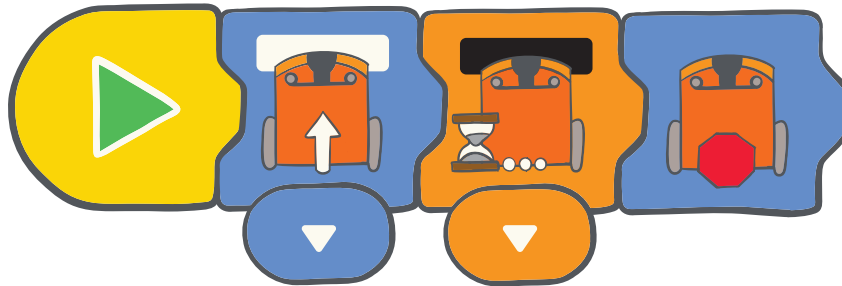
Edison's tracking sensor is the sensor that lets Edison see the difference between dark and light surfaces.

We can use this sensor in many ways using EdBlocks.

This time, let's make a program that uses the tracking sensor to tell Edison to stop driving on a black surface.

## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:



## What does the program do?

The first block tells Edison to drive forward on a white surface.

The second block tells Edison to wait until a black surface is detected.

When a black surface is detected, the program moves to the third block, which tells Edison to stop.

## What to do with Edison

Download the program to Edison.

Put Edison on the white part of the track on the next page, pointing towards the black line.

Run the program by pressing the play (triangle) button.

Did Edison stop? \_\_\_\_\_

Now try again, but point Edison at one of the colored lines. What happens? \_\_\_\_\_

## Find the answer

Did Edison stop at the red line? \_\_\_\_\_

Did Edison stop at the blue line? \_\_\_\_\_

Did Edison stop at the green line? \_\_\_\_\_

Which colour do you think is the best to get Edison to stop? Why do you think that it is the best?

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# Let's make noise

Name \_\_\_\_\_



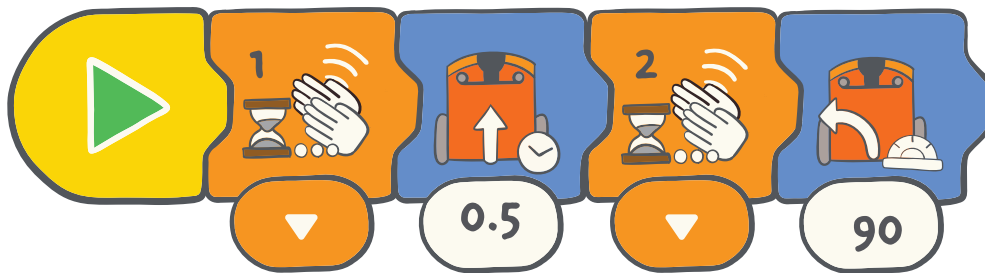
Do you remember that Edison has a sound sensor? It is the sensor that lets Edison detect loud sounds, like when you clap your hands.

We can make a program that uses the sound sensor.

Let's make a program that tells Edison to wait for a clapping sound before taking the next step in the program.

## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:



Download the program to Edison. Press the play (triangle) button.

### What does the program do?

The first block tells Edison to wait until one clap is detected.

The second block tells Edison to drive forward for half a second.

The third block tells Edison to wait until two claps are detected.

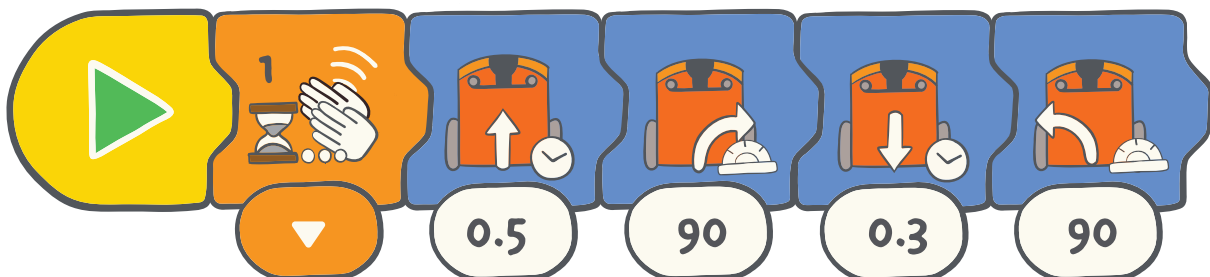
The fourth block tells Edison to turn left 90 degrees.

## What to do with Edison

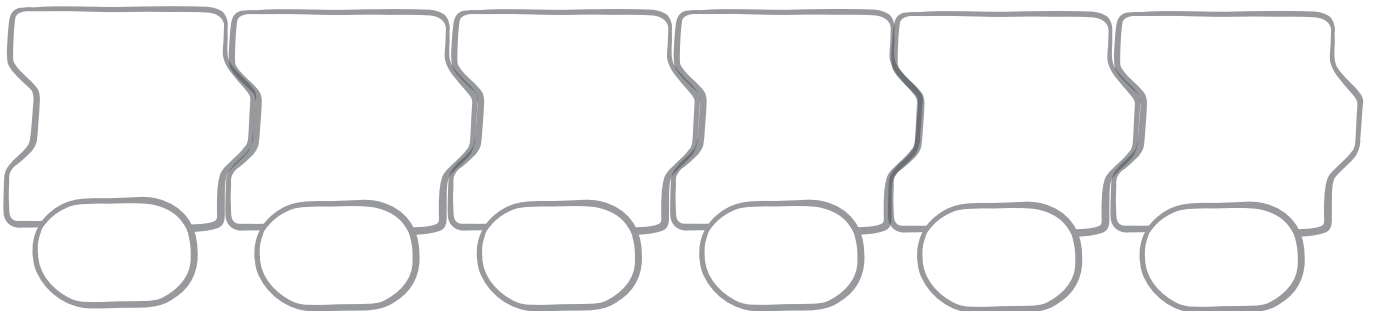
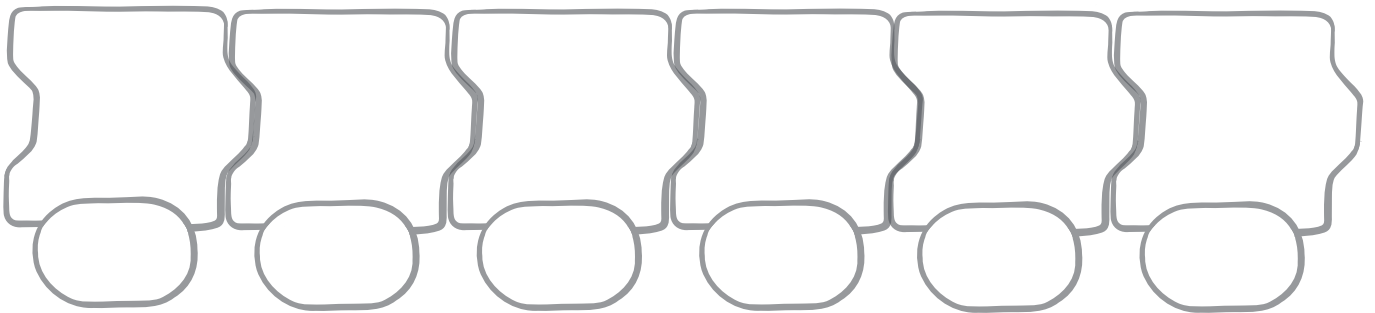
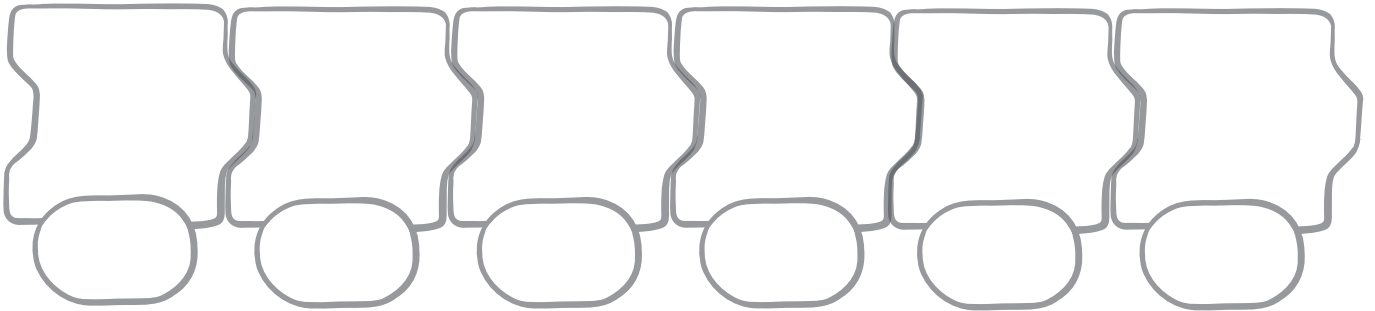
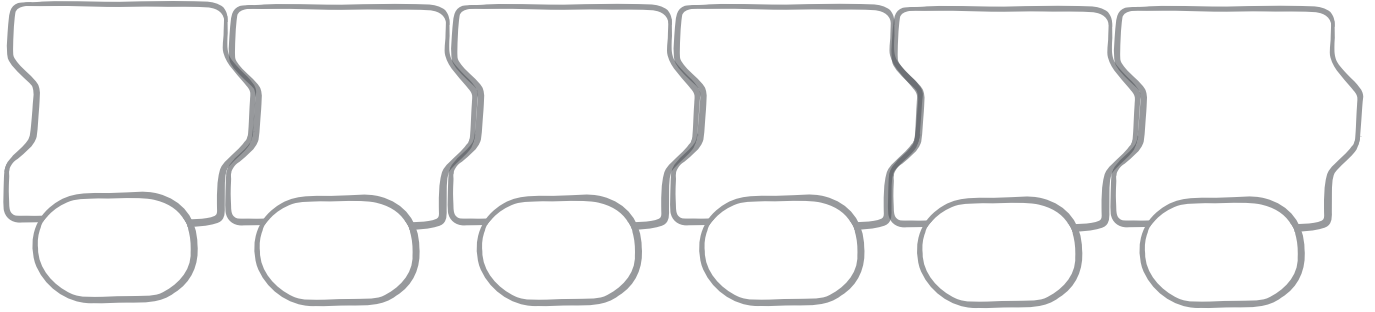
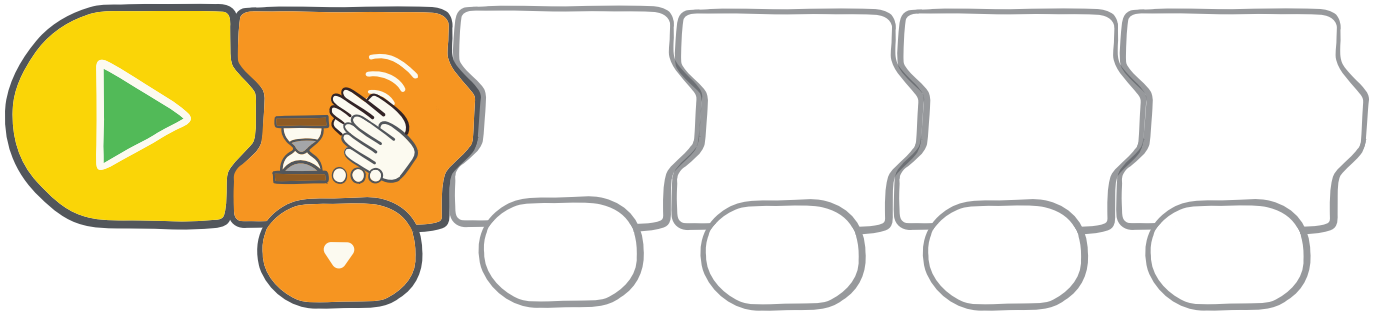
Now you know how to drive forwards, backward, turn left and turn right using EdBlocks. You can make Edison dance!

## Find the answer

The program below is an example of how Edison can dance:



On the next page, create your own program so that when you clap, Edison will dance. Have Edison change directions and do different things for different amounts of time. Try adding some places for Edison to wait until you clap again. Make the program as long as you want!



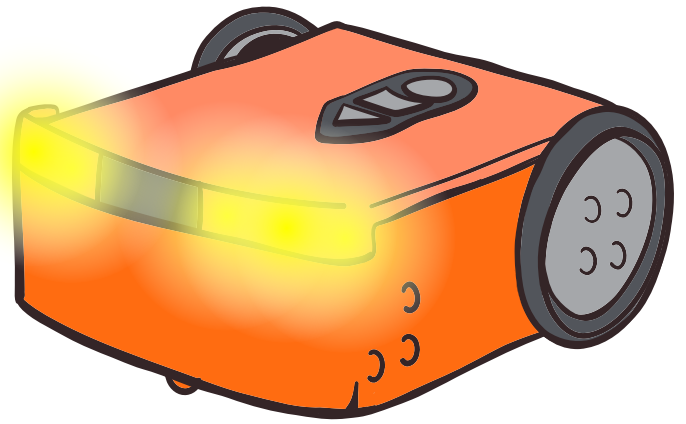
# Let's use the lights

How can we program Edison to turn on and off the LED lights forever?

**By using a loop!**

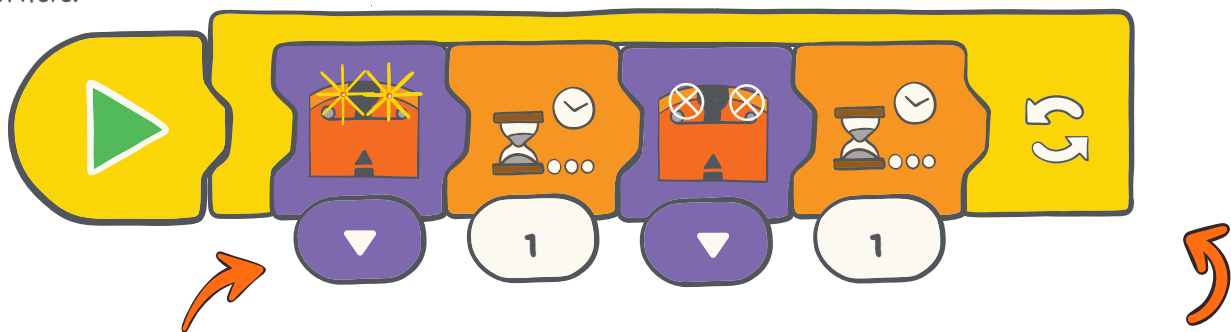
## What is a loop?

A loop is a special block in EdBlocks. We can put a loop around other blocks and the loop will make any blocks inside the loop repeat.



## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:



This is the start of the loop.

The program would normally end here, but the loop tells the program to go back to the start.

## What to do with Edison

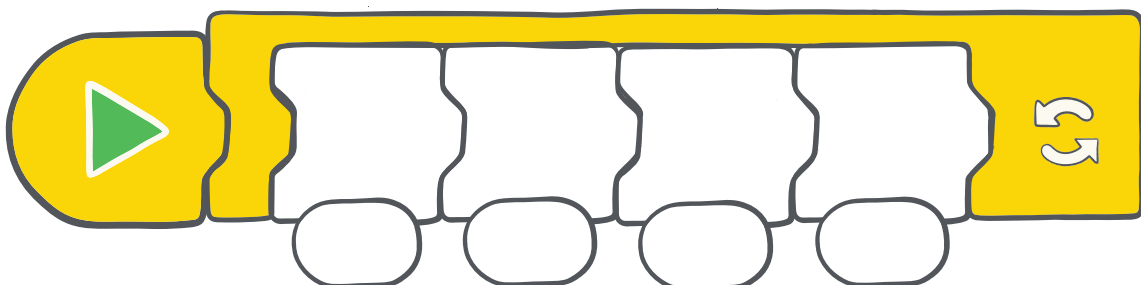
Download the program above to Edison. Be sure to wrap the main program inside the loop block. Run the program to see what happens.

## Find the answer

Why do we use the loop block? \_\_\_\_\_

What would the program do if there was no loop? \_\_\_\_\_

In the EdBlocks app, make your own program using the loop block. (Hint: try using drive blocks)  
Write down your program here and describe what your program does:



# Let's detect obstacles

We can write a program that will stop Edison from running into objects.

This program uses Edison's infrared light sensors.

## What is infrared light?

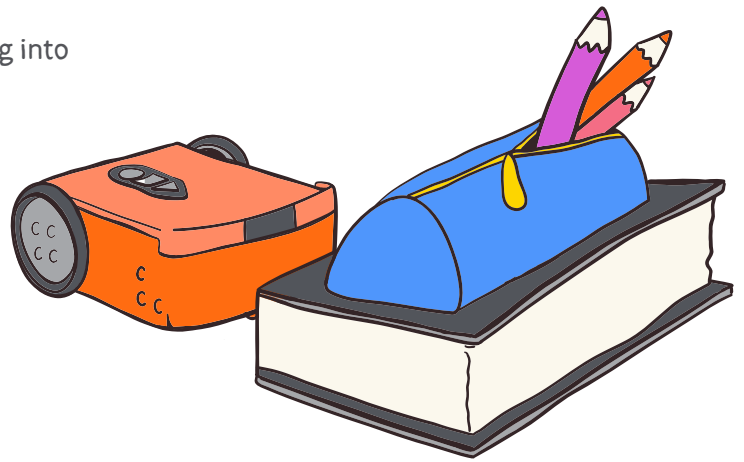
There is a wide range of light. People can see some of this range, but not all.

**Infrared light (also called IR) is invisible to people.**

Did you know you use IR a lot?

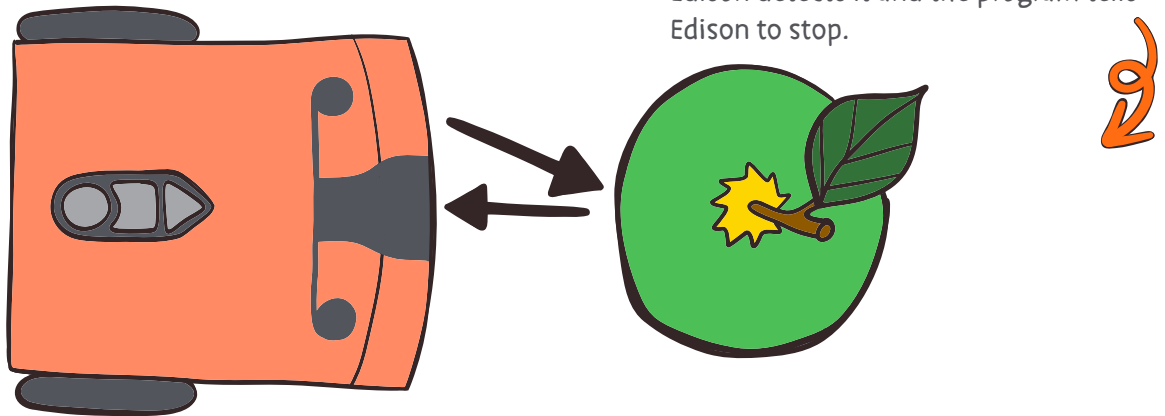
Infrared light is used in TV remote controls.

It is how the remote tells the TV to change the channel or turn up the volume!



Infrared light reflects off the object.

Edison detects it and the program tells Edison to stop.

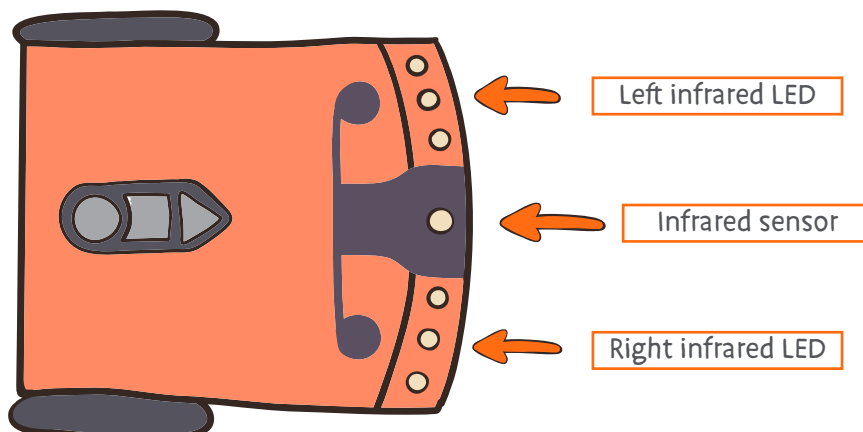


## Infrared light and Edison

Just like a TV remote, Edison can use infrared light.

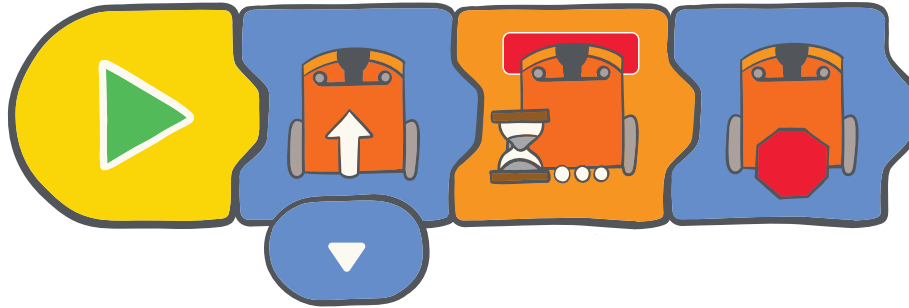
Edison has two IR light emitter diodes (or LEDs) on the front, one on the left and one on the right. Edison also has an IR sensor on the front, right in the middle.

We can program Edison to use IR to find obstacles and avoid running into them. Using EdBlocks, we can write a program that tells the IR LEDs to send out infrared light. That light is reflected off any objects nearby and bounces back towards Edison. Edison can detect that light with the IR sensor. Our program tells Edison not to run into any object it can detect.



## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:



This program has Edison drive forward until it detects an obstacle is in the way. When Edison can 'see' the obstacle, it will stop.

## What to do with Edison

Download the program above to Edison.

Put Edison on one side of your desk, then place an object, like a pencil case, on the other side of the desk. Aim Edison at the object, then press the triangle button. Watch Edison drive forward towards the object.

## Find the answer

If an obstacle is too small or doesn't reflect enough infrared light, Edison cannot detect it.

Let's see what things Edison can and cannot detect.

Try placing different objects in Edison's way and test what happens. Try things that are different shapes and colors.

Record your results here:

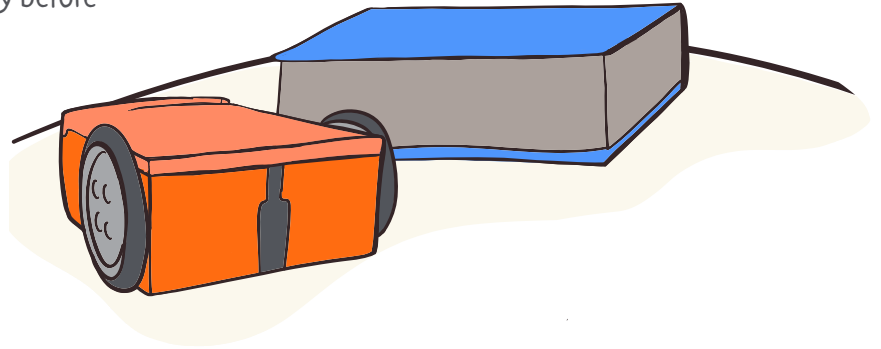
Object	Color and shape	Did Edison stop? Why or why not?



# Let's detect and avoid

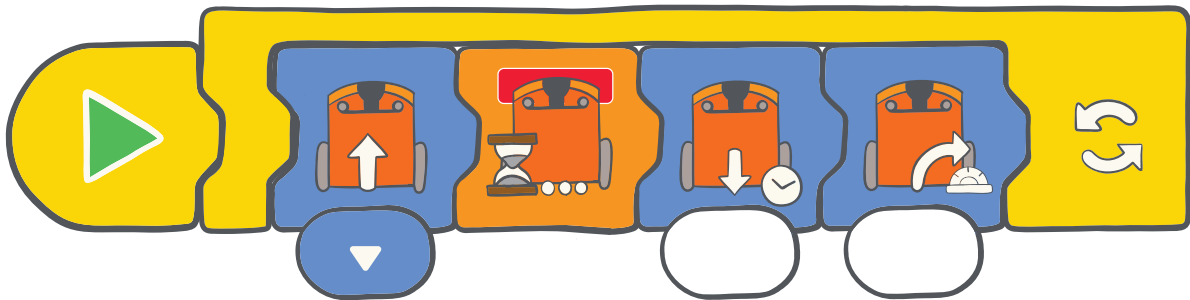
Edison's infrared light sensors let Edison detect objects.  
We can use these sensors to make different programs using EdBlocks.

This time, let's make a program that uses the infrared light sensors to tell Edison to detect obstacles, then turn away before running into them.



## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:



The first block tells Edison to drive forward

The second block tells Edison to wait until an obstacle is detected.

The third block tells Edison to back up.

Then the fourth block turns Edison away from the obstacle.

The loop tells the program to then start back at the first block.

You will need to experiment to work out how much time to put in the 'drive backwards' block and how many degrees to put in the 'turning' block.

## What to do with Edison

Download the program to Edison.

Put some obstacles you know Edison can detect around Edison.

Run the program by pressing the play (triangle) button.

Watch as Edison uses the program to detect an object, then turn and drive away.

**Find the answer**

1. What time, in seconds, did you use in the 'drive backwards' block?

Why did you use that time?

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2. What number of degrees did you use in the 'turn right' block?

Why did you use that angle?

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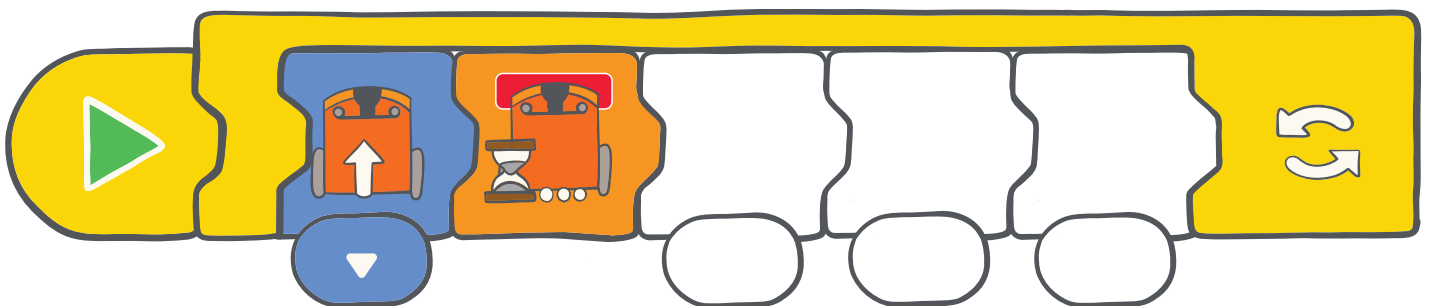
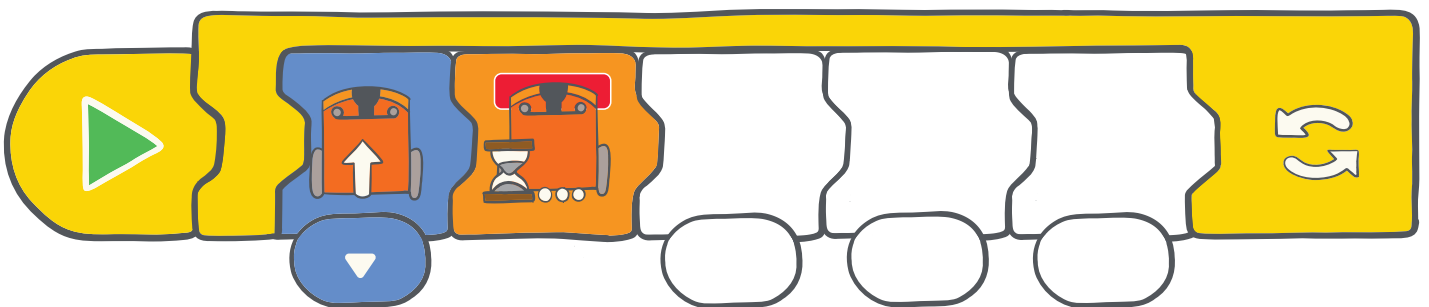
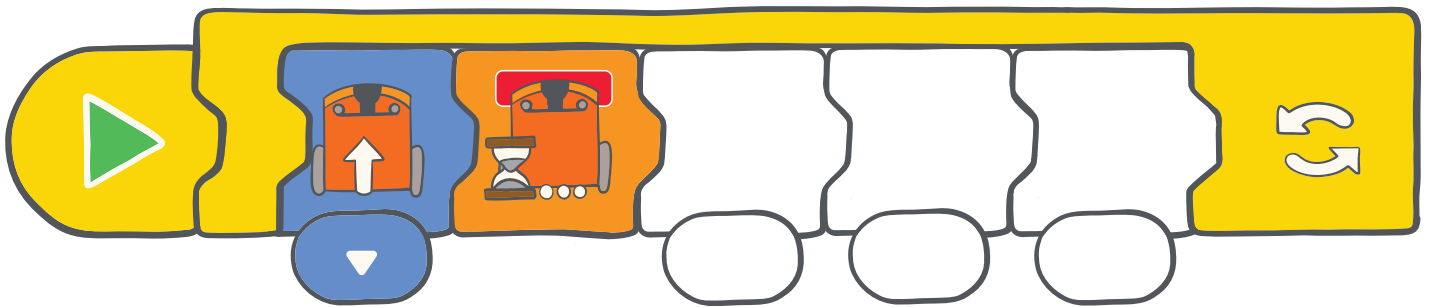
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3. What else could Edison do when it detects an object?

Try making different programs where Edison alerts you it has detected an object before driving away.

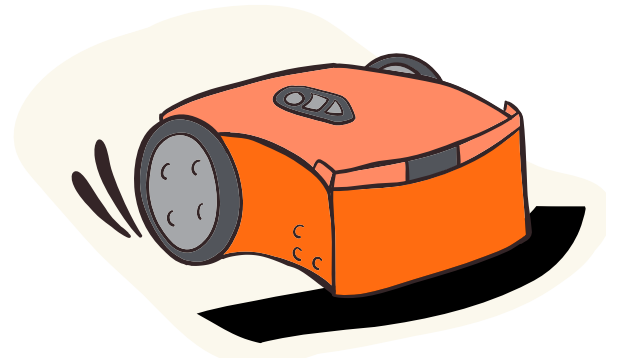
Plan your programs here:



# Let's stay in the borders

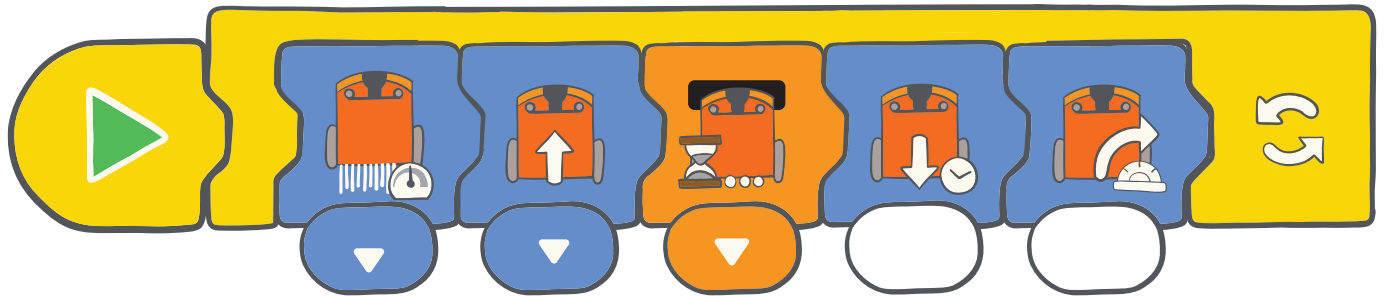
Remember Edison's tracking sensor?  
It is the sensor that lets Edison see the difference between dark and light surfaces.

We can make a program that uses the tracking sensor to tell Edison to avoid crossing a black line.



## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:



The first block sets Edison's speed - you can choose slow, normal, or fast.

The second block tells Edison to drive forward

The third block tells Edison to wait until it detects a dark surface.

Then the fourth block tells Edison to drive backwards.

The fifth block tells Edison to turn right.

You will need to experiment to work out how much time to put in the 'drive backwards' block, and how many degrees to put in the 'turning' blocks.

## What to do with Edison

Use some black tape to create a border on a desk for Edison to stay inside.

You can also use the previously used Edison track or draw a black border on a large piece of paper.

Download your program to Edison.

Run the program with Edison in the border.  
Experiment with your program.

Test different values in the 'reverse' block and the 'turn right' block.

You should also try using different speed blocks to see what happens.

## Find the answer

1. What time, in seconds, worked the best in the 'drive backwards' block?

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2. What angle, in degrees, worked best in the 'turn right' block?

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3. Which speed block worked best? What made it the best choice?

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4. What if cars had a program like this in real life. Would that be good? Why do you think it would be good or bad?

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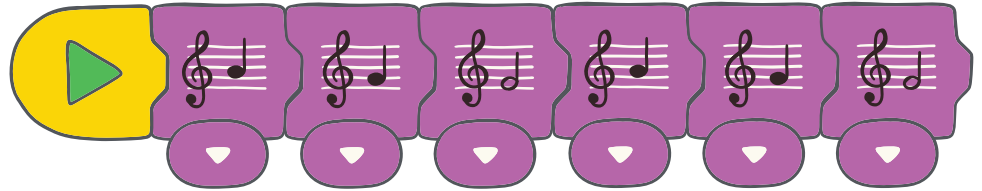
# Let's make music



Edison can play different musical notes.  
Using EdBlocks, we can make a program that tells Edison to play a tune.

## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:



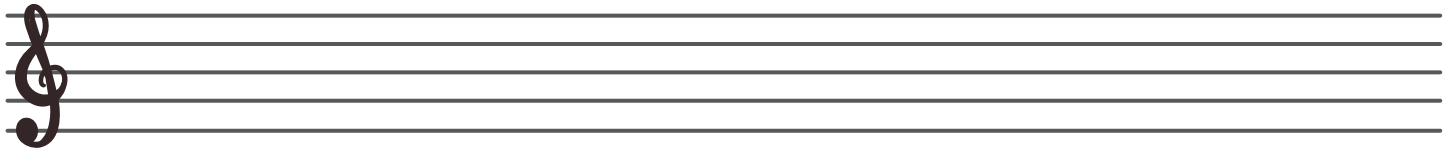
This program will tell Edison to play the first line of 'Hot cross buns'.

## What to do with Edison

Download the program above to Edison. Run the program by pressing the play (triangle) button.  
Edison will play the song. You can make Edison play other songs too!  
Use sheet music to help you make music programs using EdBlocks. Or try making up your own song!

## Find the answer

1. Make your own music program.  
Draw the notes you used in your program as sheet music.



### Happy Birthday example

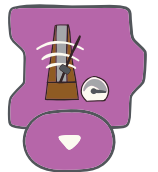


2. Find the metronome block. This block can change the tempo, or speed, of the notes played after it.  
Add a metronome block to the beginning of your music program, then try downloading and playing it.  
Which block did you use? What did the metronome block do to your program?

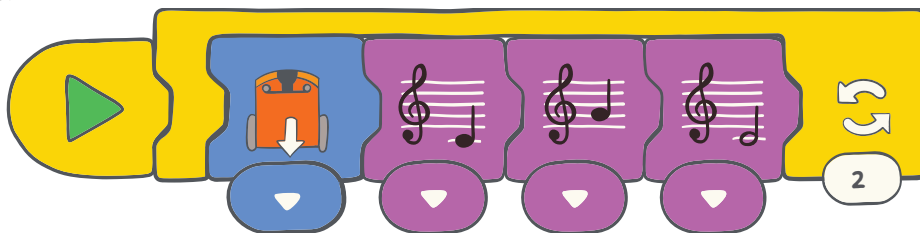
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3. Can Edison drive and play music at the same time? Let's test and see! Using the EdBlocks app, arrange the blocks into the program here:



Download the program to Edison and describe what Edison does when you play this program.

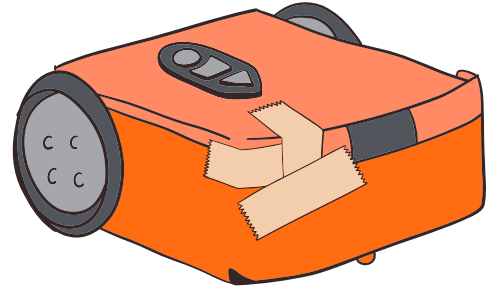
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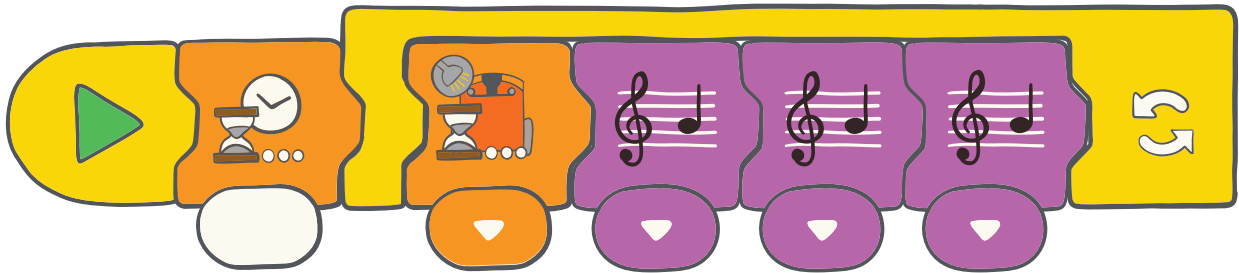
# Let's perform

Remember Edison's light sensors? These sensors let Edison detect light. We can use these sensors and make a program for Edison using EdBlocks. Let's make a program that gets Edison to play music when a light is detected. This time, we want Edison to detect the light from only one side. We need to cover the opposite side of Edison with dark tape or cardboard.



## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:



Your program first needs to tell Edison to wait for five seconds. Then it should tell Edison to play a tune whenever it detects a light from one side.

### Which side should Edison use to detect the light?

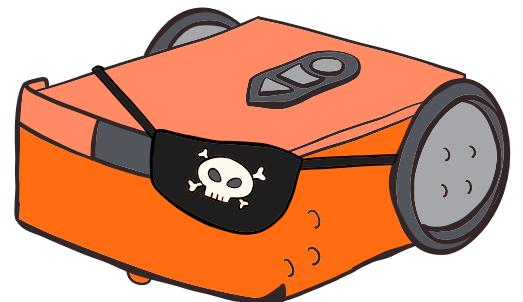
You can choose! If Edison is looking for light on the left side, the right side of your Edison robot needs to be covered. If Edison is looking for light on the right side, the left side of your Edison robot needs to be covered.

### What music should Edison play?

You can use any tune you like. Find some sheet music and program a song. You can even make up your own tune! Make sure both the 'wait for light' block and music blocks are inside the loop.

## What to do with Edison

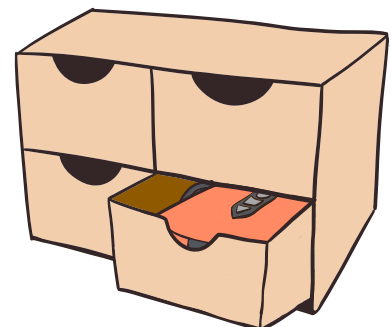
Let's dress up Edison for a performance in the spotlight! Using cardboard or tape, block out the light from one side of Edison. Then make a costume for Edison. Use craft supplies and make your own character costume for Edison. Remember that your costume needs to cover one side of Edison, but leave the buttons uncovered.



## What about the light?

Once you have dressed Edison, download your program to Edison. Press the play (triangle) button, then put Edison in a drawer. When you open the drawer, Edison will detect the light and play your song.

Where is another dark place you can put Edison? You could try a backpack or a lunch box.



Name \_\_\_\_\_

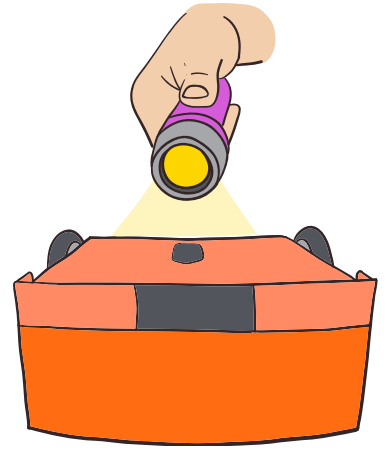
## Find the answer

Use this page to design your costume for Edison

# Let's avoid the light

Edison's light sensors are the sensors that let Edison detect light. We can use EdBlocks to make programs that have Edison react to light in different ways.

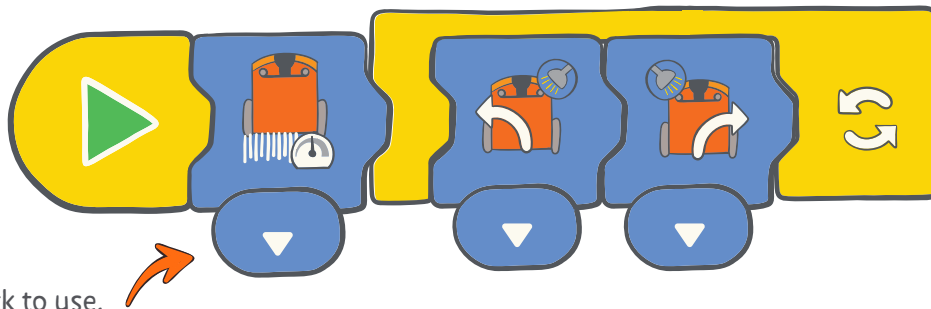
This time, let's make a program that tells Edison to drive away from the light.



## What to do with EdBlocks

Using the EdBlocks app, arrange the blocks to match the program here:

Your program tells Edison to avoid light. When Edison senses light from a flashlight, it will turn away.



Choose a speed block to use.

Which block do you think will work best to help Edison avoid the light?

## What to do with Edison

Download your program to Edison.

### Now, let's play the cockroach game!

To play, you will need to work in groups with three or four people.

Use some tape to mark a large circle on the floor.

The goal of the game is to keep your Edison robot inside the circle but push everyone else's robot out of the circle. Decorate your Edison with LEGO bricks or craft materials.

Everyone needs a flashlight. Put everyone's robot in the circle and start the program by pressing the play (triangle) button. Use your flashlight to try and force the other robots to move outside of the circle.

You can also use your flashlight to keep your robot in the circle.

Hint: For the best effect keep your flashlight as low as possible.

**The last Edison in the circle is the winner!**

## Find the answer

1. Who won the game? \_\_\_\_\_
2. Look at the program that the winning robot used. Which speed block was used in that program? Slow, normal or fast? \_\_\_\_\_
3. As a group, talk about what happened in the game. Think about how the robots behaved. Why do you think this game is called 'the cockroach game'? \_\_\_\_\_

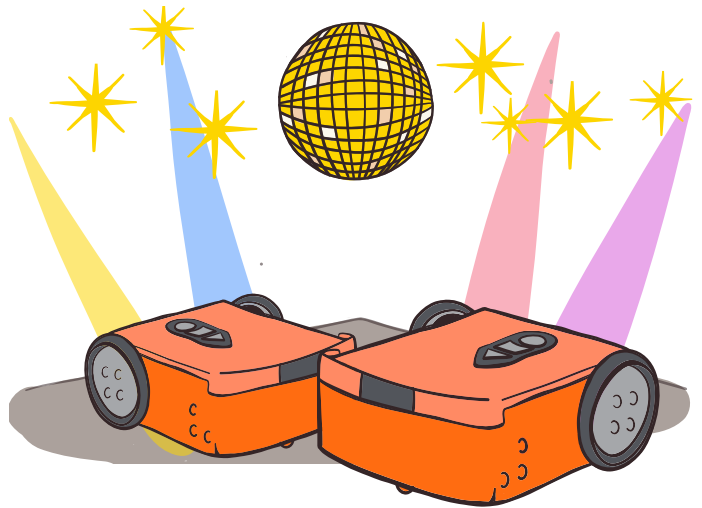
# Let's have a dance party!

Remember Edison's infrared light sensors? These sensors let Edison detect obstacles. We can also use these sensors to have two Edison robots talk to each other!

Let's make a program with EdBlocks that tells your Edison robot to do a dance when it receives a message. Your teacher will use an Edison to send out a message.

Your program needs to wait to receive that message, then have Edison start dancing.

**When the message goes out, the dance party will start!**

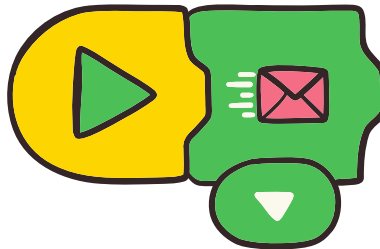


## What to do with EdBlocks

Your teacher will set up a program on their Edison robot that is going to send out a pink envelope message.

Your teacher's program will look like this one here:

Your program needs to tell your Edison to start dancing once the pink envelope is received. Using the EdBlocks app, create a program with your own dance routine for Edison. Use turns, LED lights, and sounds to make it really special.



## What to do with Edison

Download your program to Edison. Now it's time to dance!

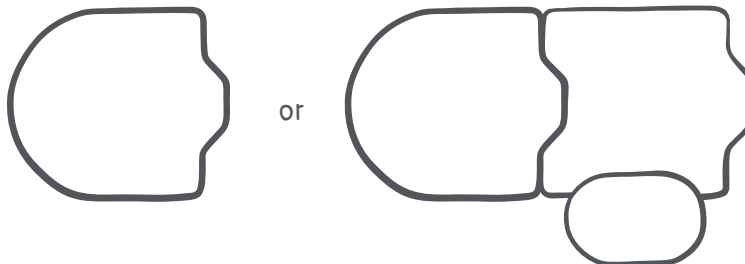
As a group, have everyone get their robot ready by pressing the play (triangle) buttons. Once the robots receive the pink message, each robot will start to dance.

**It's party time!**

## Find the answer

1. There are two ways to have Edison receive the pink message. Look at EdBlocks and find them both.

Draw your answer here:



2. What does your dance routine program look like?

Take a screen shot of your program and print it out for your teacher.



# CERTIFICATE OF AWARD

This certifies that

Student's name

has completed the EdBlocks lesson activities program.

**Don't stop now!**

**This is just the start of your robotics and coding adventure!**

Teacher's signature

Date

