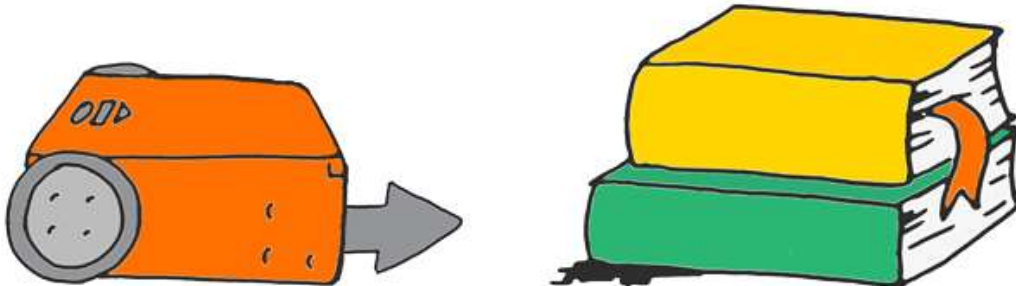


# Let's detect obstacles

We can write a program that will stop Edison from running into objects. This program needs Edison's infrared light sensors to work.



## 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 and Edison

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

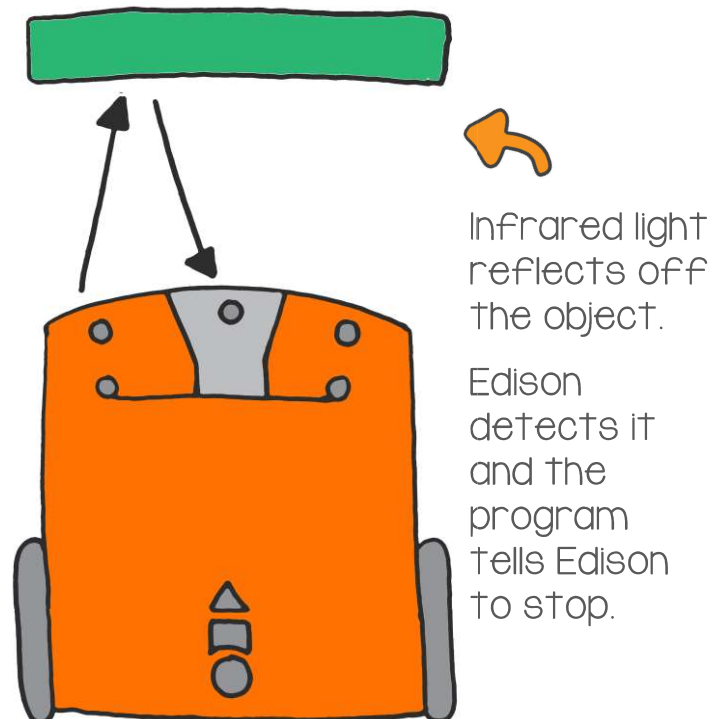
Edison has two IR light emitter diodes (or LEDs) on the front, one on the left and one on the right. Edison also has an IR sensor on the front, right in the middle.

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.

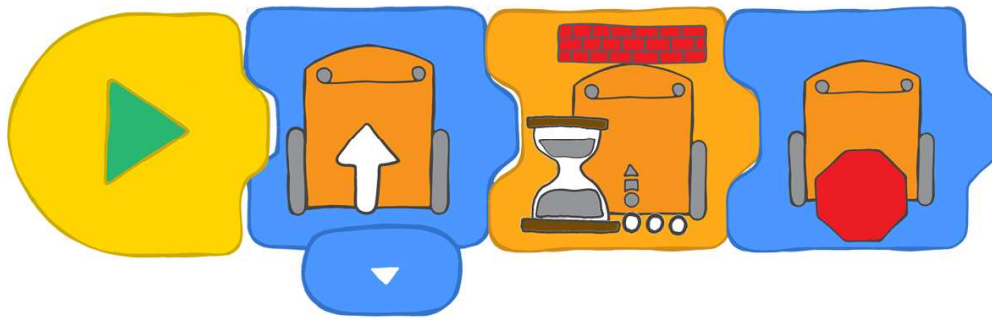
That light is reflected off any objects nearby and bounces back towards Edison. Edison can detect that light with the IR sensor.

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 into the program below.



What is this program telling Edison to do?

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 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.

Did Edison stop before hitting 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 colours. Record your results below.

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