Follow The Guidelines

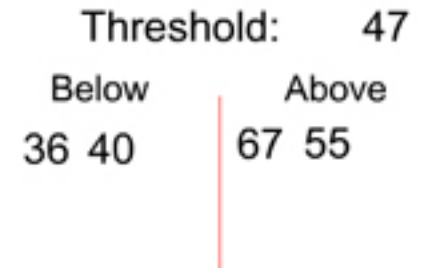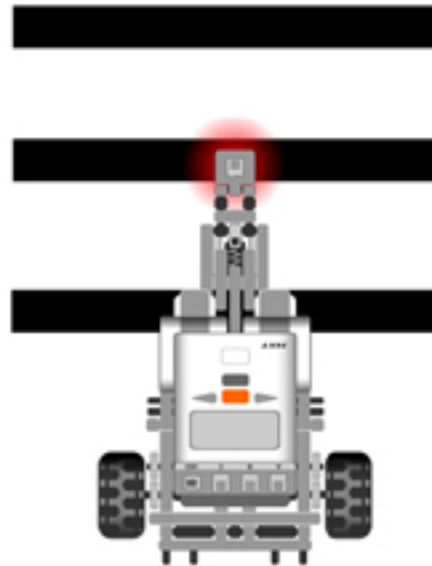**Introductory Presentation**

Opening Activity

Make a prediction about how light sensors will use thresholds.

Keep in mind:

- We used thresholds with the Sound Sensor in the Clap On, Clap Off Activity

- Light sensors can read values from 0 to 100

- Thresholds divide the sensor readings into two categories

Opening Activity

A light sensor uses thresholds to divide the values that it receives into categories of "light" and "dark," much like the Sound Sensor divides values into "loud" and "quiet."
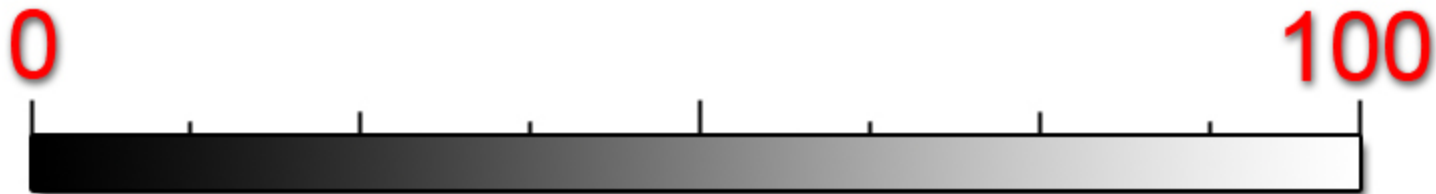
Threshold: 47

Below   Above
36 40 | 67 55

Light Sensor:

Dark

Light Sensor is over dark surface

Discussion Questions

What is the difference between the values that the Light Sensor reads for darker colors versus lighter colors ?

0   100

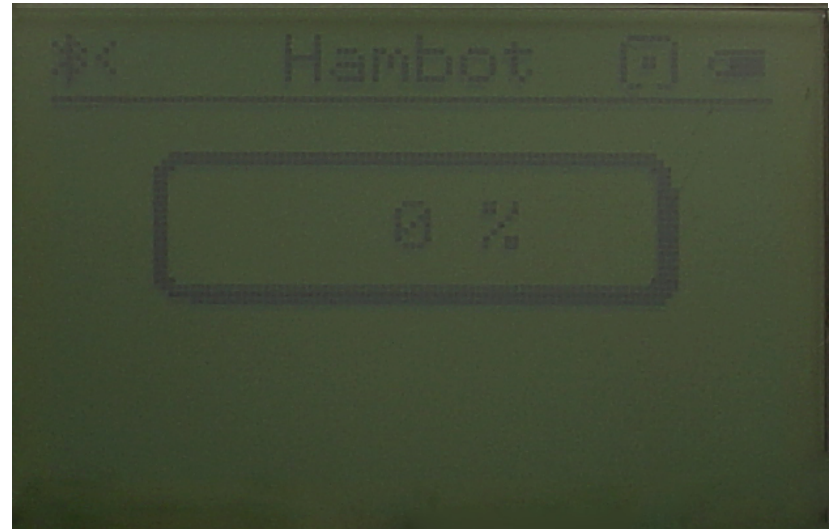*Higher numbers equal brighter colors and lower numbers equal darker colors*

Discussion Questions

You can read the Light Sensor values by going into View Mode

First, select the "Reflected Light" option

Then, select the port number

Finally, read the light sensor value

Review

Remember from Clap On, Clap Off that we are able to calculate thresholds by taking example values with the Sound Sensor.

Value that the Light Sensor reads for lighter colors = 70

Value that the Light Sensor reads for darker colors = 52
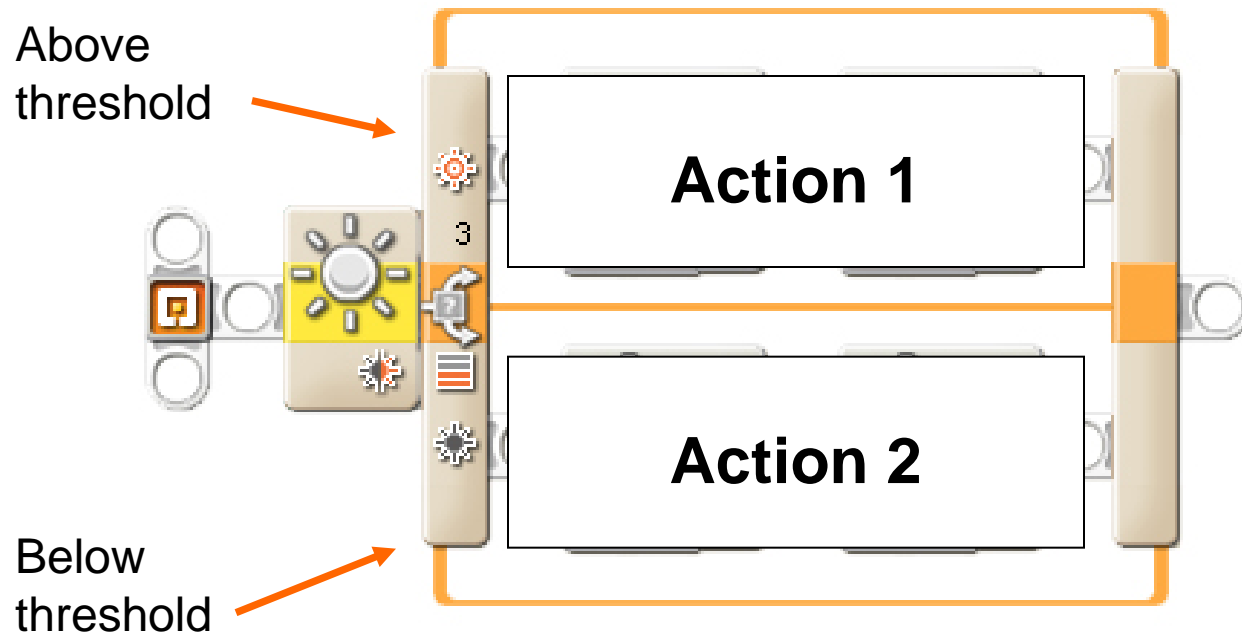
Threshold = 61

With the example values from the Light Sensor, calculate the sample threshold for the Light Sensor.

Review

In Clap On, Clap Off, we used the threshold to tell the robot to wait for a value above or below the threshold.
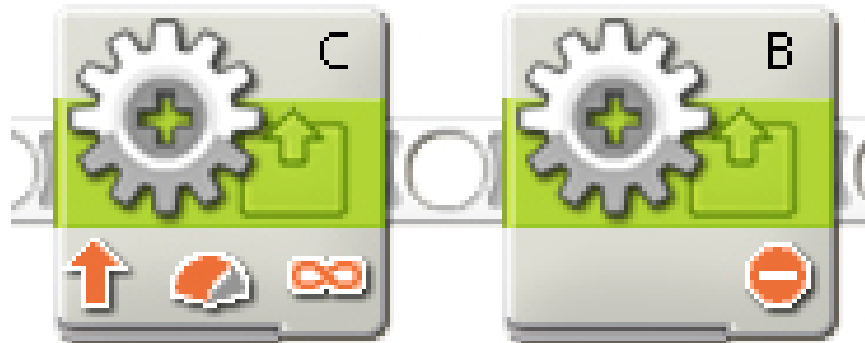
Preview

Above threshold

Below threshold

Action 1

Action 2

Now we will use our threshold in a Switch block so that it has to make a decision between two different actions.
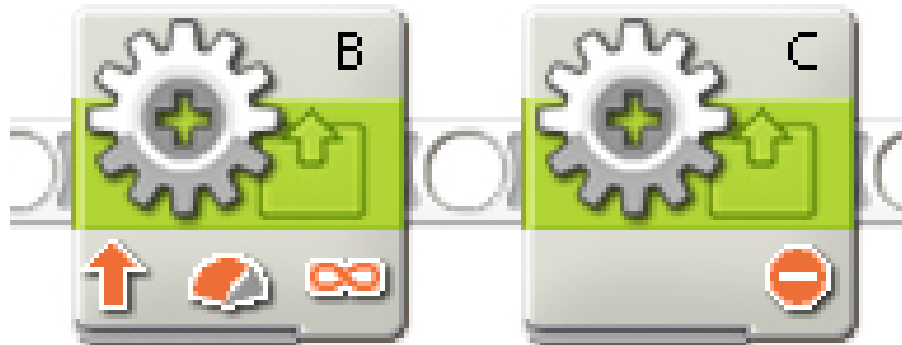
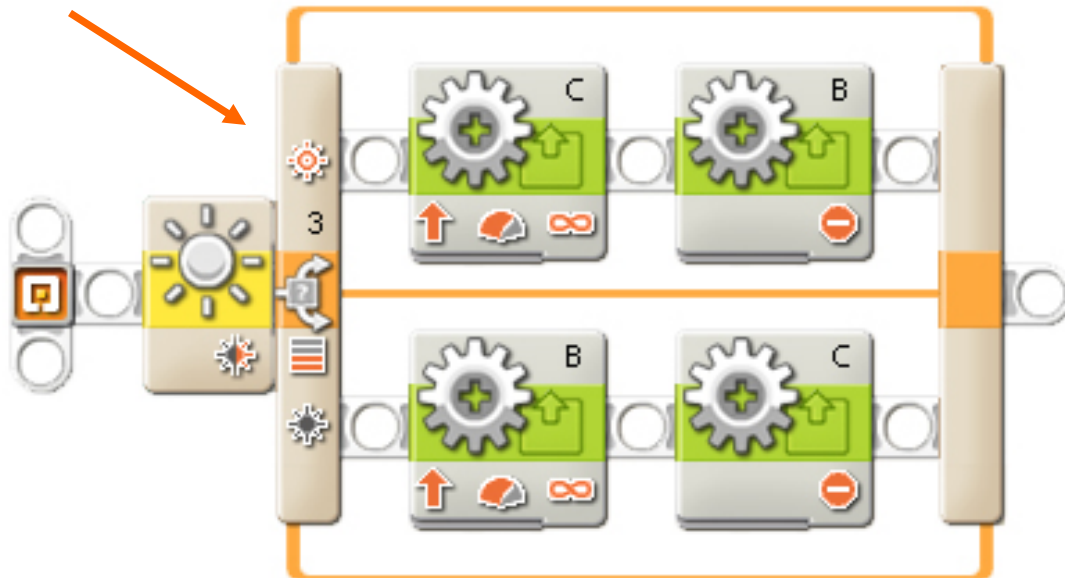# Preview

What will "action one" do?

Make a right turn

Preview

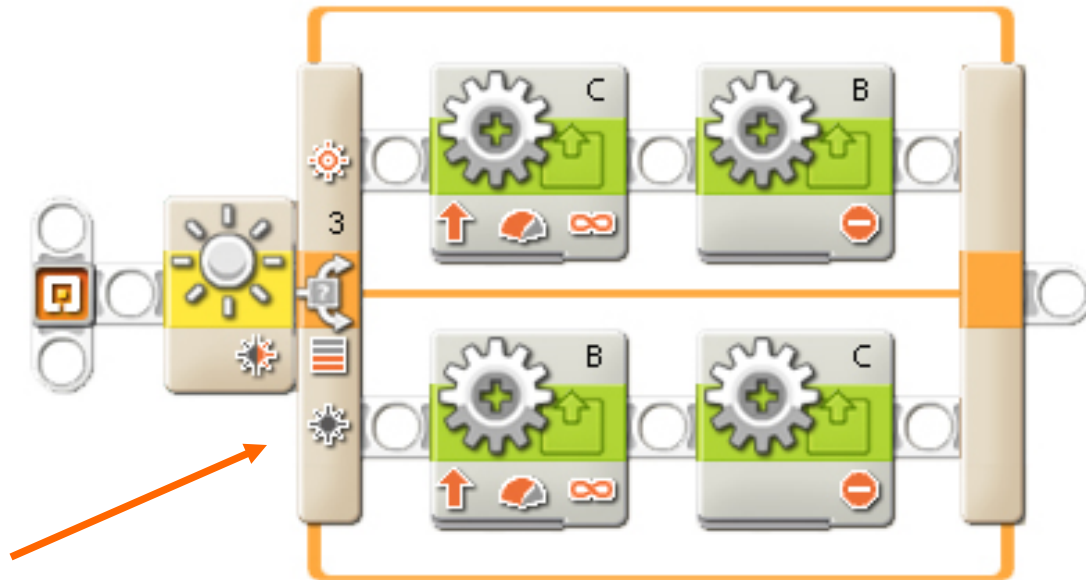What will "action two" do?

Make a left turn

Preview

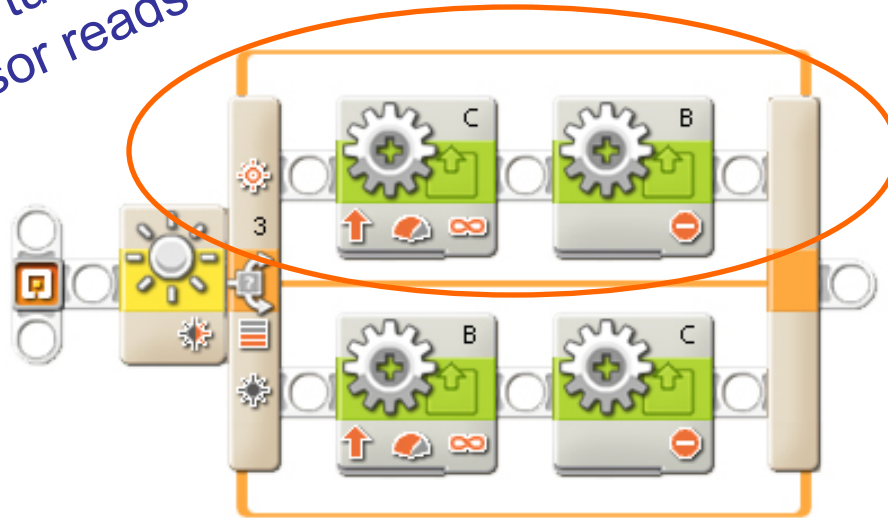The robot will do the side with the filled-in sun if it sees a value above the threshold

Preview

The robot will do the side with the dark sun if it sees a value below the threshold
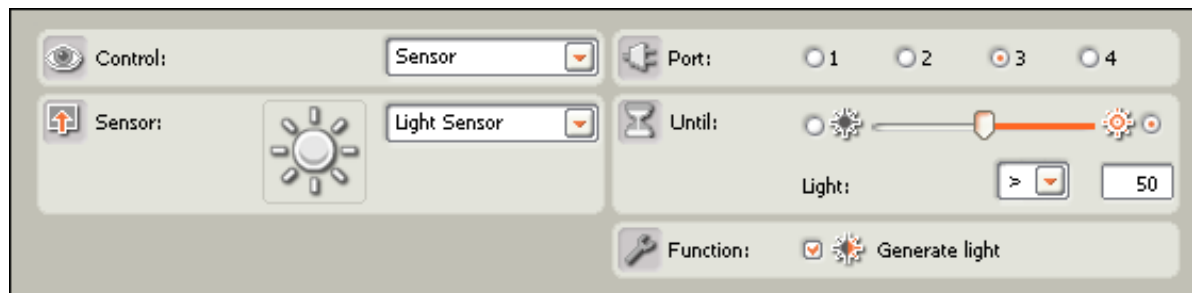
Preview

Which direction will the robot turn if the Light Sensor reads 54?
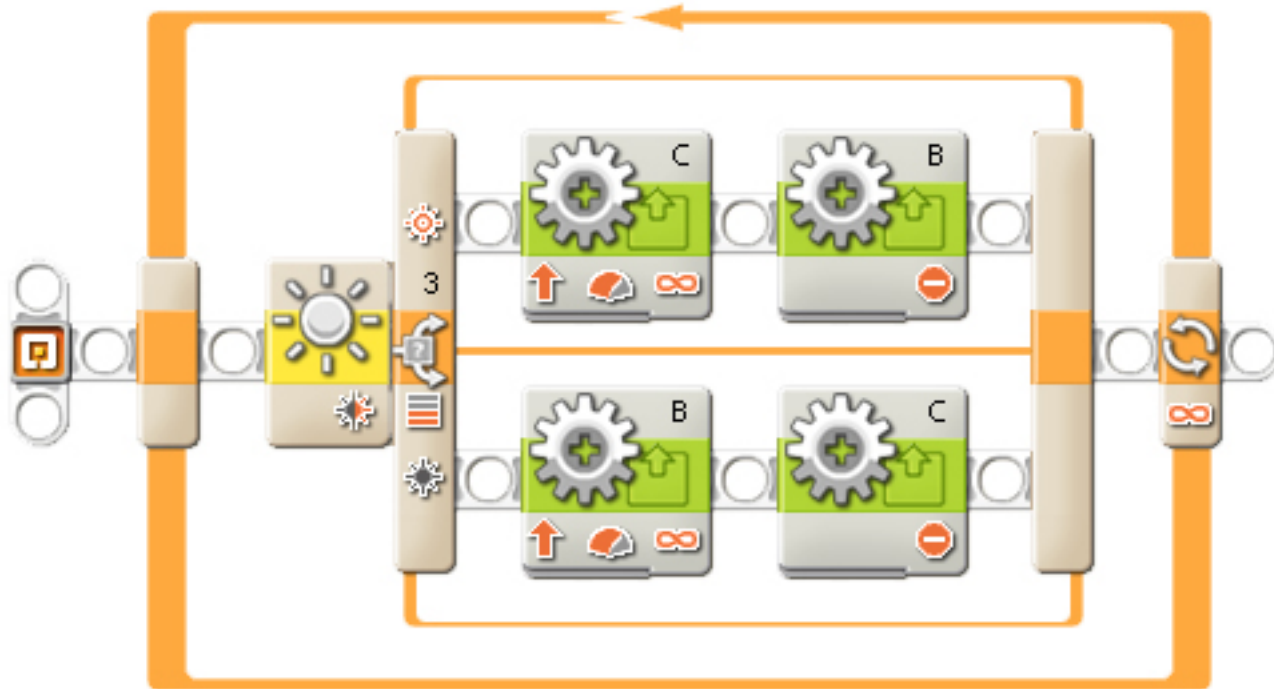
54 is above threshold, so your robot will make a right turn

Hint: look at the threshold

Preview

We will also add a Loop block, which allows your robot to perform the same set of actions many times (click to see)

Preview

As you complete the activity, decide why you would want to run the same behavior many times?

Good Luck!

Now you have the necessary knowledge to get started in the Follow The Guidelines Activity.