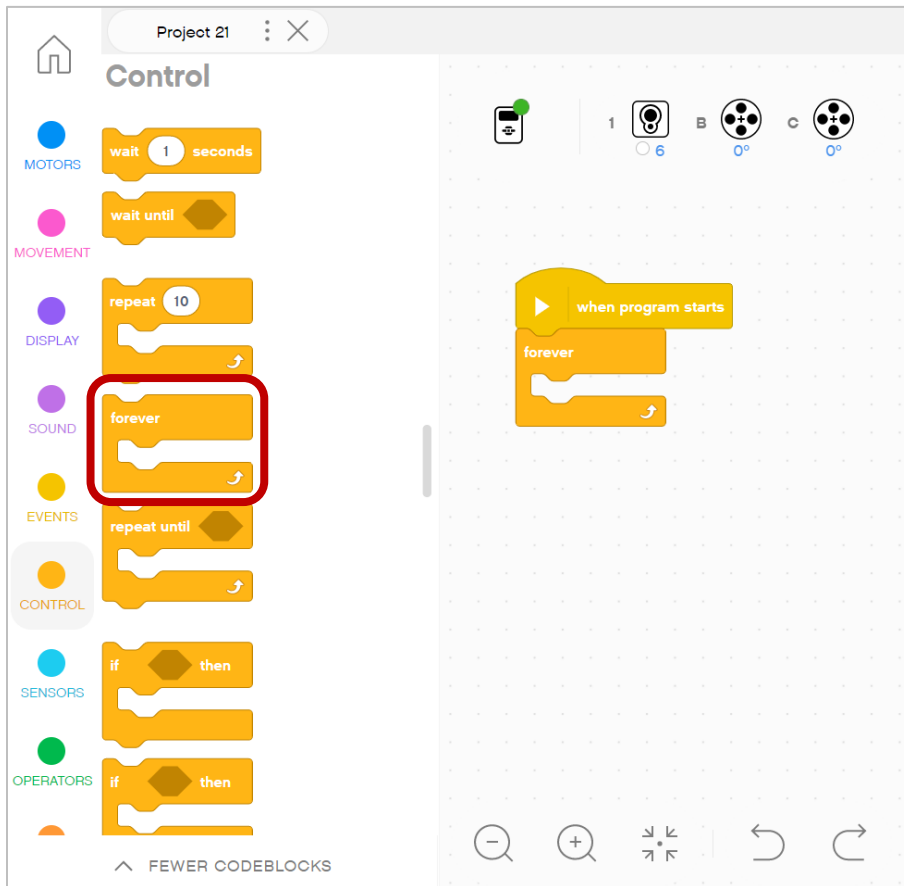


Programming Sensors

Color Sensor: Step-by-step Instructions

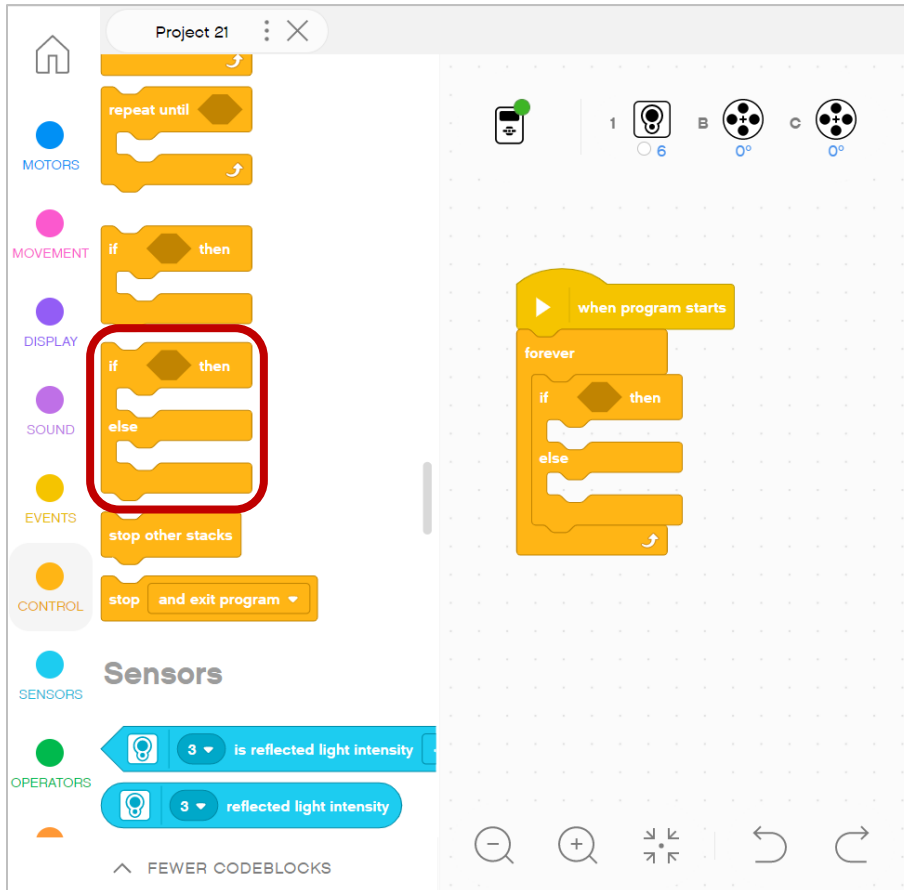
1) Forever <Loop>



Drag a Forever <Loop> from the Control Panel onto the programming canvas.

This way, the program will test for a color repeatedly.

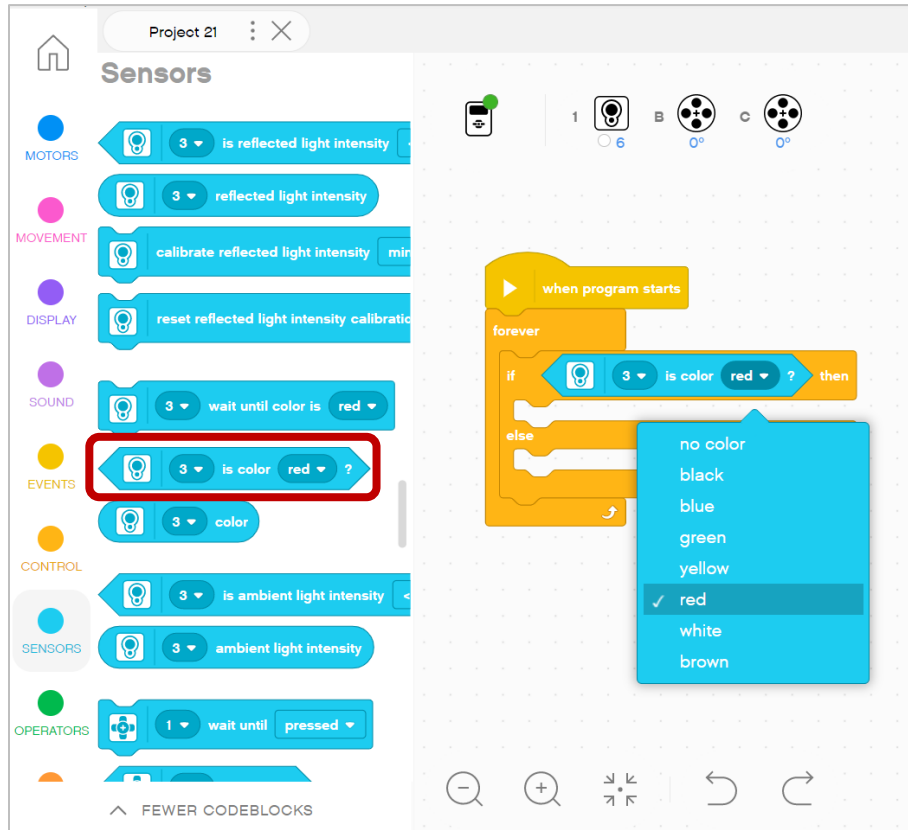
2) <IF-THEN-ELSE> Block



The <IF-THEN-ELSE> Block determines what the robot will do when it detects a color (IF-THEN), and what to do when the color is not detected (ELSE).

Make sure to place it “inside” the <Loop> Block.

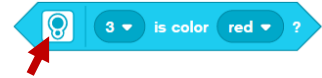
3) Color Sensor



Drag a Color Sensor Block from the Sensors menu and “insert” it into the top of the <IF-THEN-ELSE> Block.

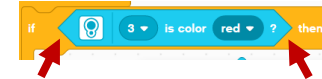
Note 1:

The icon on the left shows an outline of the sensor.



Note 2:

The sensor block’s shape has to fit the <IF-THEN-ELSE> Block.



4) Set Color and Port

Match port on robot with port on Sensor Block. Here, it is port 1.

Set color here

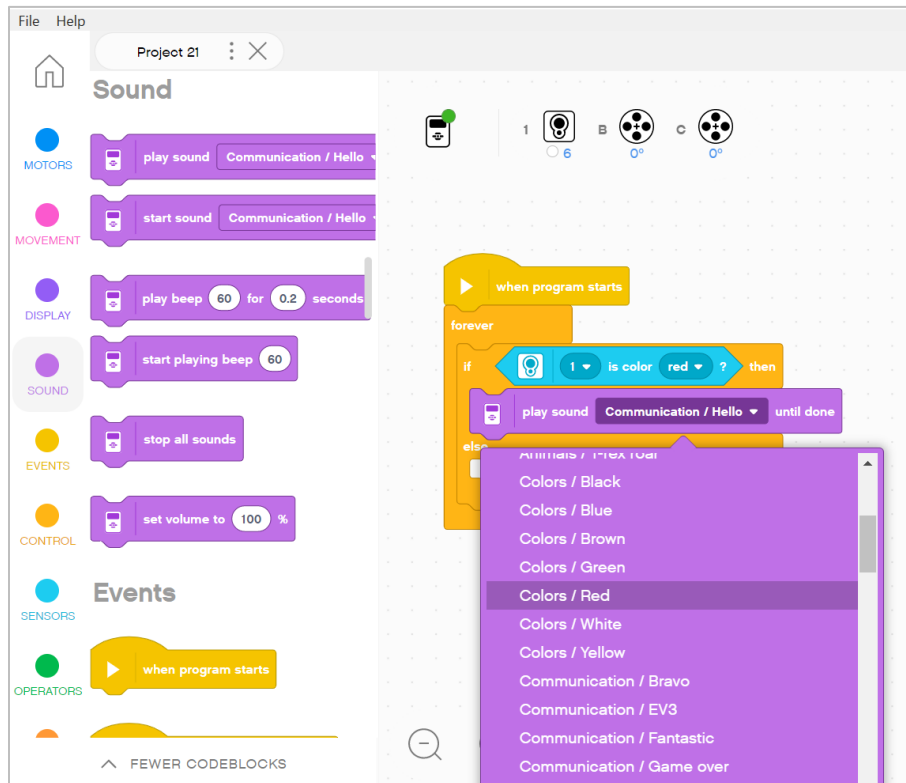
Set the color you want the sensor to detect.

Here, we selected “red”.

Make sure the Port on the Sensor Block matches the Port on the robot (on the back, labelled 1-4).

Here, the color sensor is plugged into Port 1 and it is also shown on screen.

5) Adding Sound

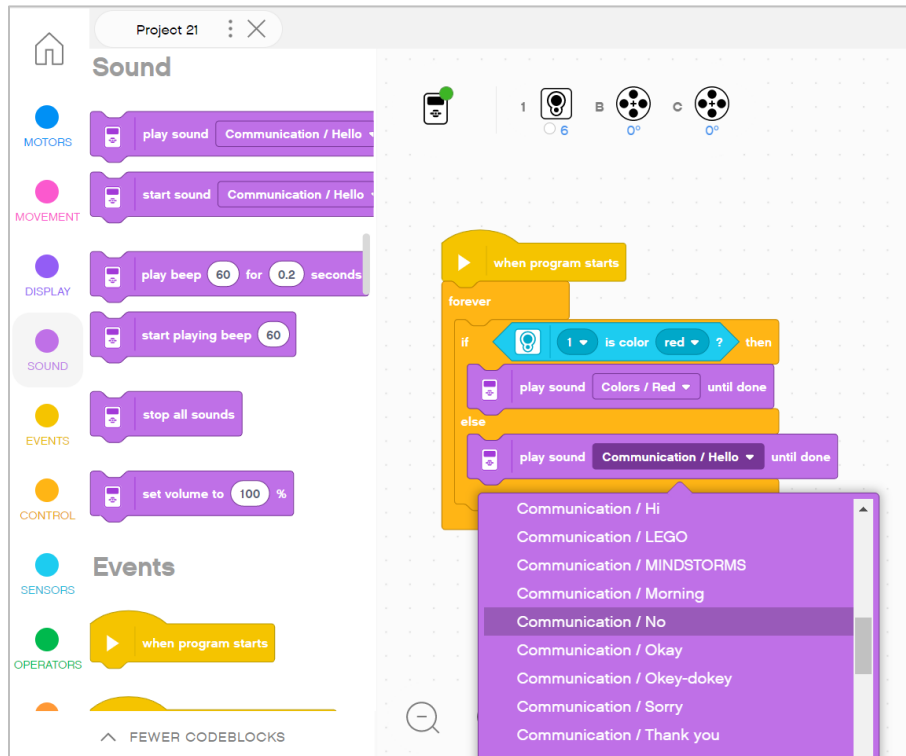


Drag a <Sound> Block into the IF-THEN part.

Then, choose a sound you want the robot to play when it sees the chosen color.

We chose the sound “red”.

6) Adding Sound 2



The screenshot shows the Scratch programming environment with a project titled "Project 21". The "Sound" category is selected in the left sidebar. The main workspace contains the following code blocks:

- when program starts** (yellow)
- forever** loop (orange) containing:
 - if** block (blue) with condition: "1" (selected) **is color** "red" **?** **then**
 - play sound** block (purple) with "Colors / Red" selected and "until done" duration.
 - else** block (blue) containing:
 - play sound** block (purple) with "Communication / Hello" selected and "until done" duration.

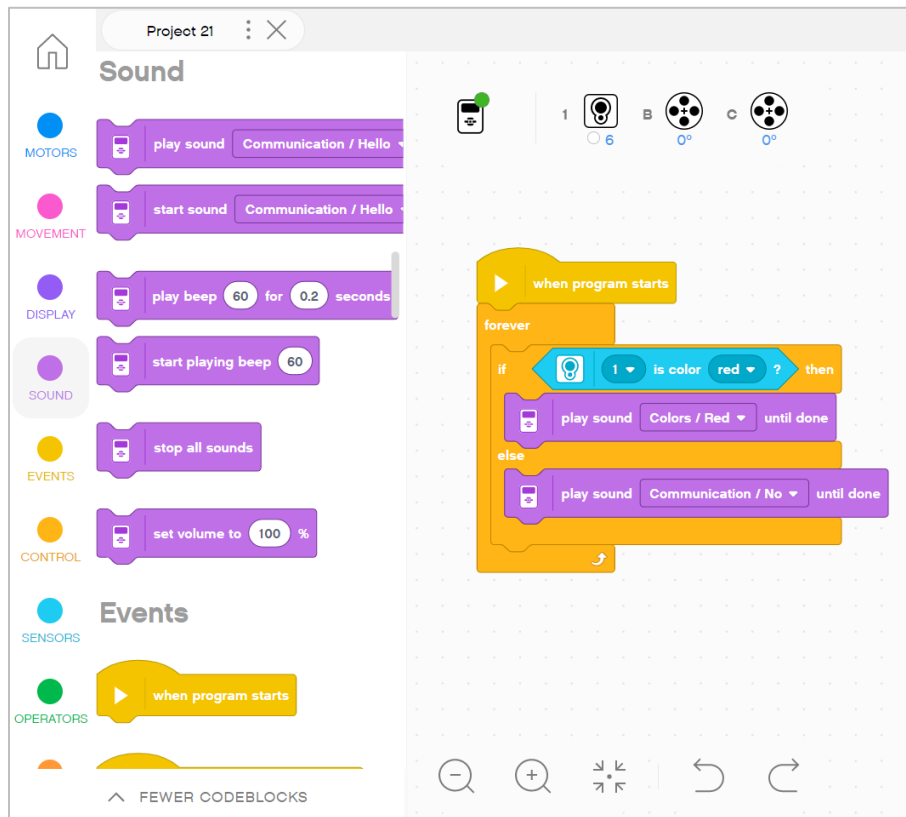
A dropdown menu is open below the "else" block, showing a list of sound options: Communication / Hi, Communication / LEGO, Communication / MINDSTORMS, Communication / Morning, Communication / No, Communication / Okay, Communication / Okey-dokey, Communication / Sorry, and Communication / Thank you. The "Communication / No" option is currently selected.


Next, choose a sound you would like the robot to play when it does not see the color.

Add it to the ELSE part.

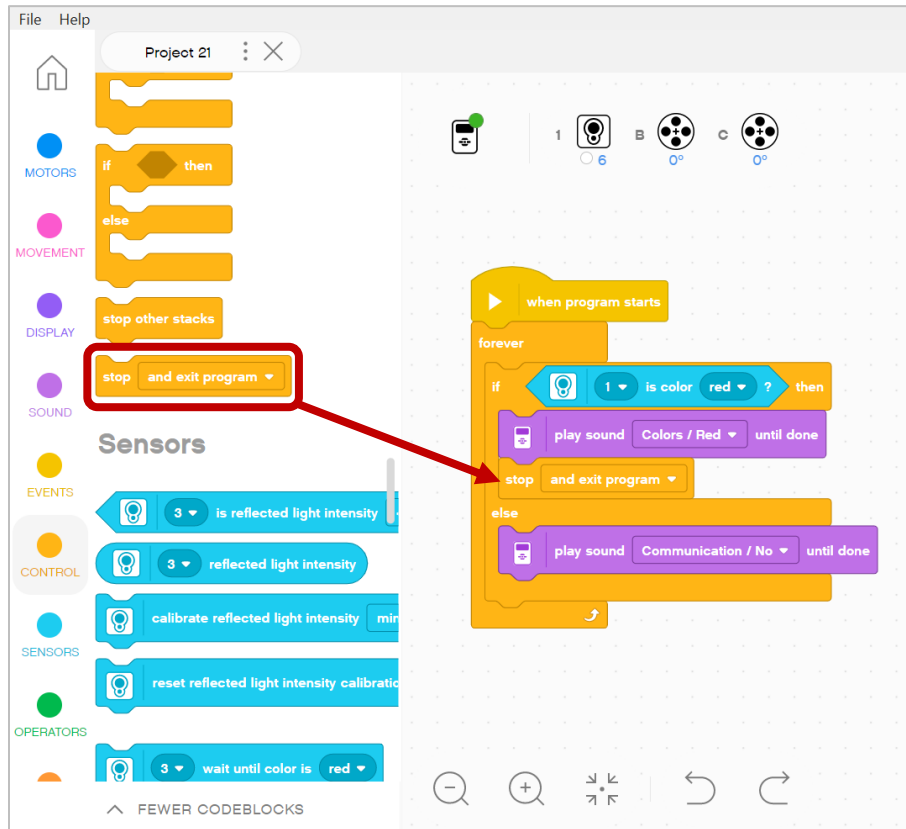
We chose "no".

7) Test Your Program



Test your program by pressing  and downloading it to the robot.

8) Stop Loop on Red



To stop the robot when it detects red, select the <Stop> Block from the Controls menu.

Insert it after the sound confirming that “red” was found.