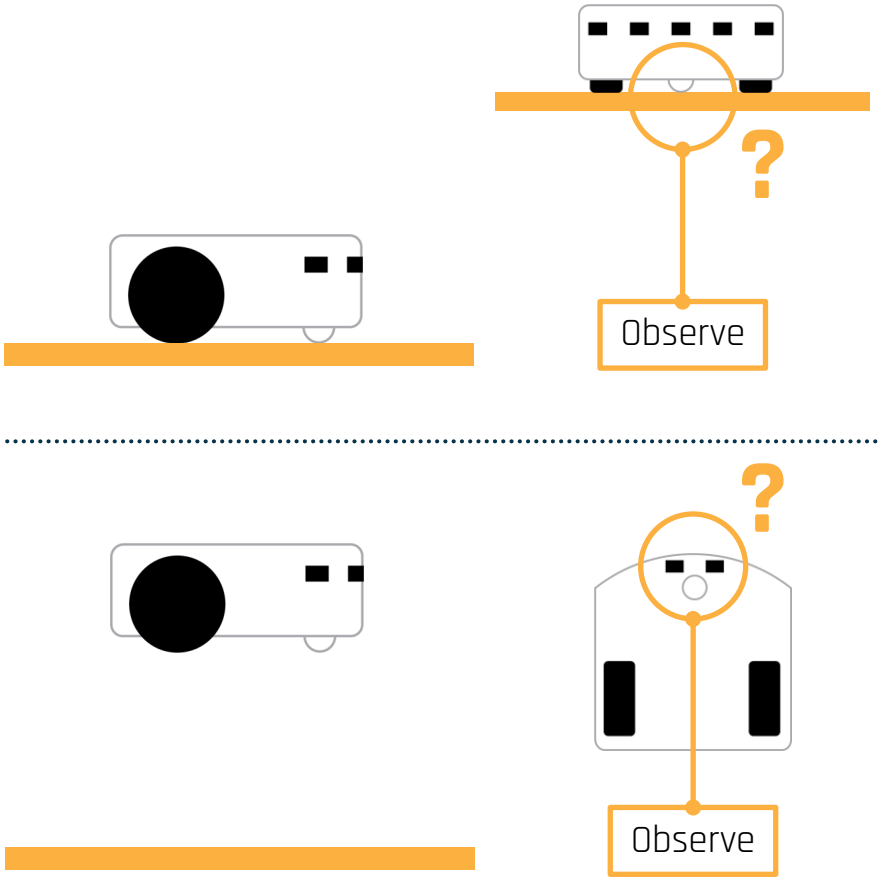
How to program ground sensors in VPL

Ground proximity sensors

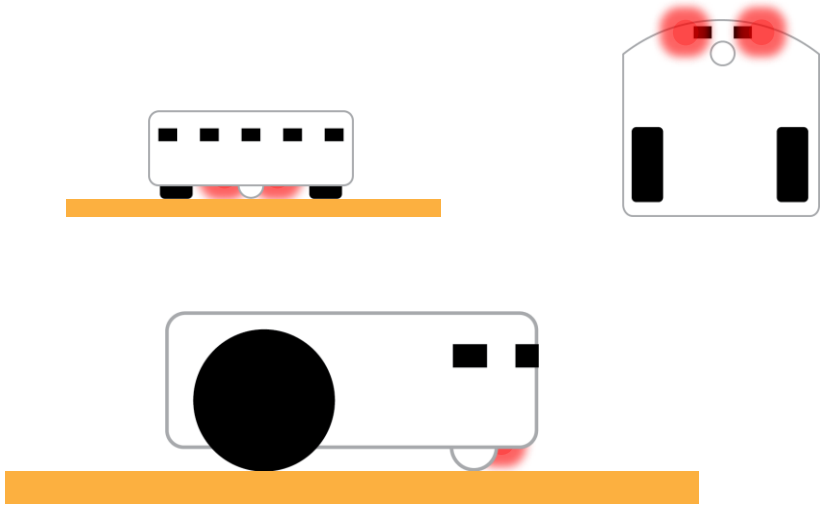
What do you observe with the ground sensors when Thymio is on a surface?

When Thymio is held high above a surface, are the LEDs next to the ground proximity sensor lit?

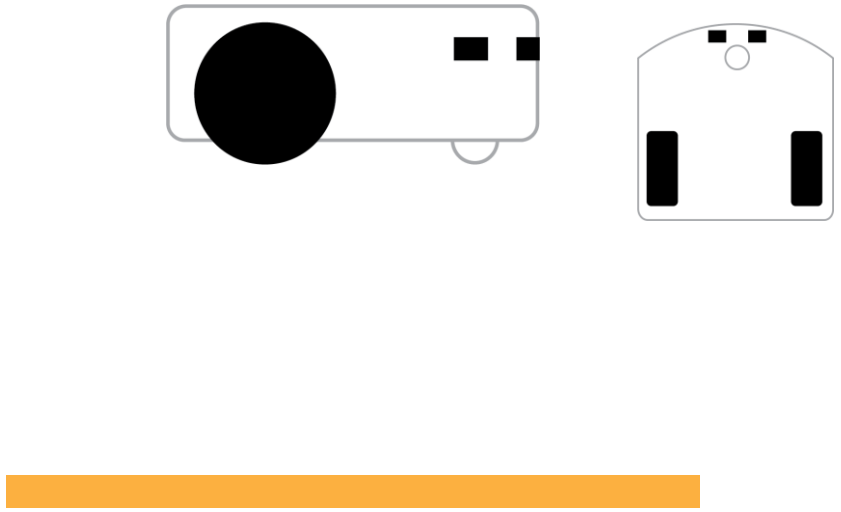


Events of ground proximity sensors

If there is an object close to the ground sensors, the sensors will detect it. The LED lights next to the ground sensors will light up red.



If Thymio detects nothing with its ground sensors the LEDs will not light up.

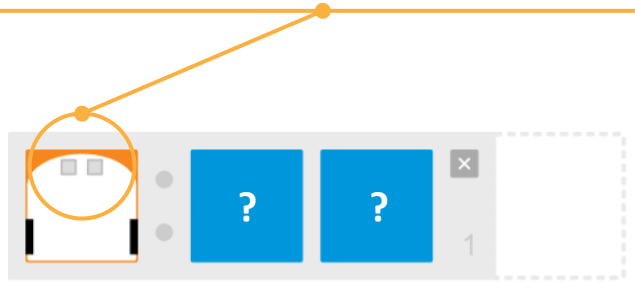


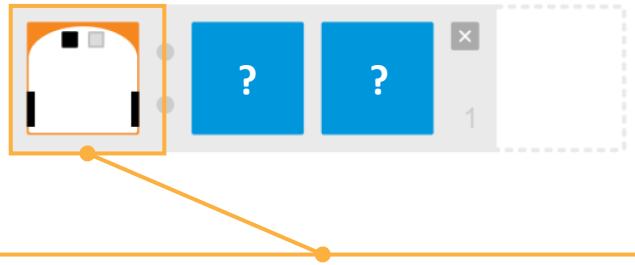
Events of ground proximity sensors in VPL

Thymio **detects something** with its two ground sensors.

Thymio **detects nothing** with its two ground sensors.

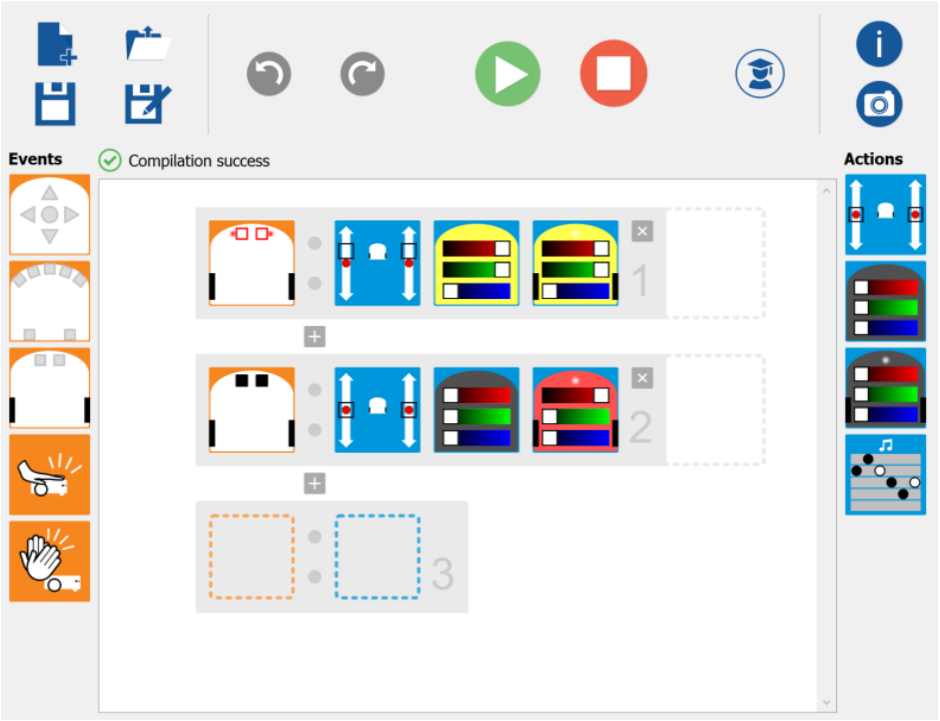
! Grey sensors on the VPL icon: no metter what the sensors detect, the actions will be launched.





! For example, this icon means that the actions will be launched only when the left sensor detects nothing. What happens with the other sensor is not important.

Program ground sensors



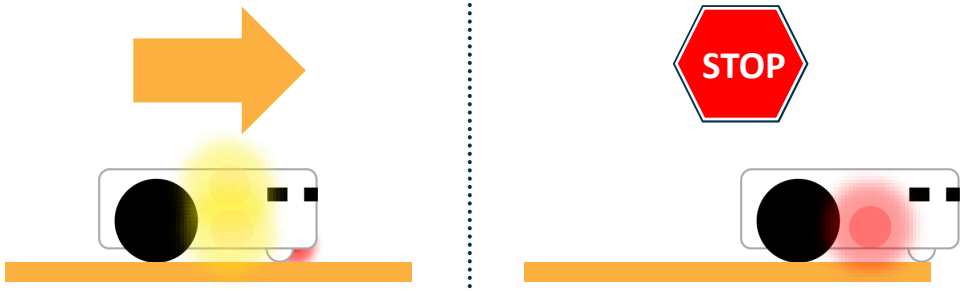
1. Create the program shown in the picture:

   Line 1 :
   When Thymio detects the ground, it will turn on its motors to move straight and its top and bottom LEDs will turn on in yellow.

   Line 2 :
   When Thymio detects no ground, it will stop its motors, its top LEDs will turn off and its bottom LEDs will turn on in red.

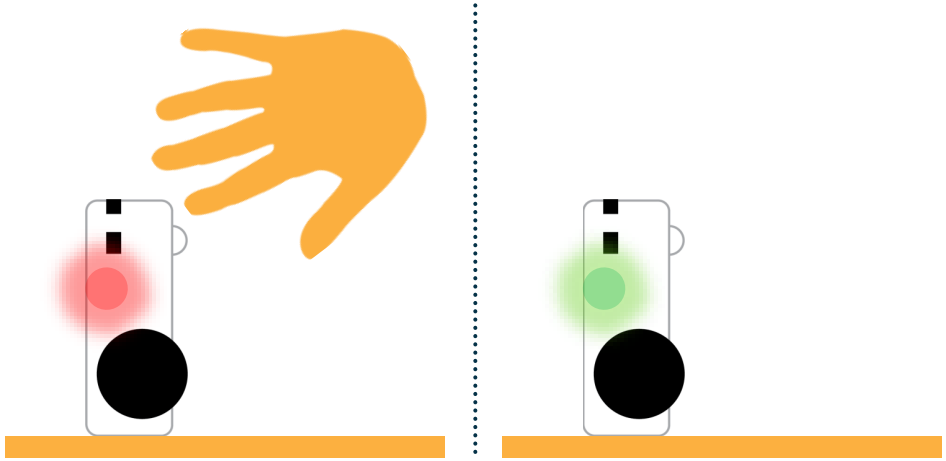
2. Place your robot on a table with a not dark surface.
3. Send the program to the robot. Will the robot fall down from the edge of the table?

! Place your robot on a table with a surface that is not dark. If your tables are dark-coloured, then try this experiment using a piece of white paper taped down along the edge of the table.



Challenge

Program the following behaviour of the robot:
If the ground sensors detect nothing, the top LEDs turn on in green. If it detects something with one of the ground sensors, its LEDs turn on in red.



You can find the correct answer on the next page

Answer to the challenge