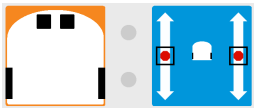
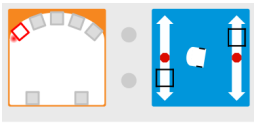
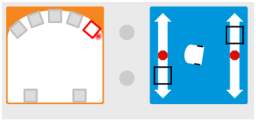
## Examples



The robot stops when the end of a table is detected.



The robot turns towards you when you are detected by the rightmost or leftmost sensor.



The robot turns away you when you are detected by the rightmost or leftmost sensor.

The robot moved off a line on the floor and turns back.

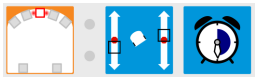
A clap changes the bottom colour of the robot.

When the timer counts down to zero, turn right.

## Examples with multiple actions

An event-actions pair with multiple actions.

An event-actions pair that depends on the current state and changes the state (advanced mode).



When the center sensor detects an object, turn left and set a two-second timer.

Tap changes the first part of the state from 1 to 0 and turns off the top lights.

Tap changes the first part of the state from 0 to 1 and turns the top color magenta.

## References

- VPL reference: https://www.thymio.org/en:thymiovpl.
- VPL tutorial: https://www.thymio.org/local--files/en:visualprogramming/thymio-vpl-tutorial-en.zip.
- Sources of this document in ref-cards at: http://github.com/aseba-community/thymio-vpl-tutorial/.

# VPL Reference Card (Version 1.5)

**Moti Ben-Ari, Stéphane Magnenat, Jiwon Shin**



## VPL user interface

Clear the editor; return to simple mode.

Open an existing program.

Save the program.

Save the program with a new name.

Undo the previous operation.

Redo the previous undo.

Load and run the program on the robot.

Stop the program on the robot.

Change to advanced mode.

Display the VPL documentation.

Export the program in a graphics format.

Delete this event-actions pair.

Add an event-actions pair.

Drag and drop — Move an event-actions pair.

Control drag and drop — Copy an event-actions pair.

**Event blocks**

Buttons are touched.
Red buttons are active.

(Advanced mode) Remote control arrows.
Signal from the remote control, arrows buttons.

(Advanced mode) Remote control keypad.
Signal from the remote control, keypad buttons.

Horizontal sensors detect an object.
White = an object is detected.
Black = No object is detected.

(Advanced mode) As above, but the slides can be used to set the thresholds.

Ground sensors detect light or dark.
White = a lot of reflected light is detected.
Black = little reflected light is detected.

(Advanced mode) As above, but the slides can be used to set the thresholds.

The robot has been tapped.

(Advanced mode) The robot has been tapped.

(Advanced mode) The pitch (forwards and backwards) of the robot is within the red segment.

(Advanced mode) The roll (left and right) of the robot is within the red segment.

The robot detects a loud noise.

(Advanced mode) The timer has counted down to zero.

**Action blocks**

Set the power of the left and right motors.
Move a slider up (forward)
or down (backwards).

Set the colour of the top of the robot.
Move the sliders to mix red, green and blue.

Set the colour of the bottom of the robot.
Move the sliders to mix red, green and blue.

Play music.
Click on a bar to set a note.
White notes are longer than black notes.
Click on a note to change white ↔ black.
Click again to silence this note.

(Advanced mode) Start a timer in the range of 0–4 seconds.
Click on the clock face to set the time.

(Advanced mode) Set the current state.
Grey = do not change the value.
White = set to 0.
Yellow = set to 1.