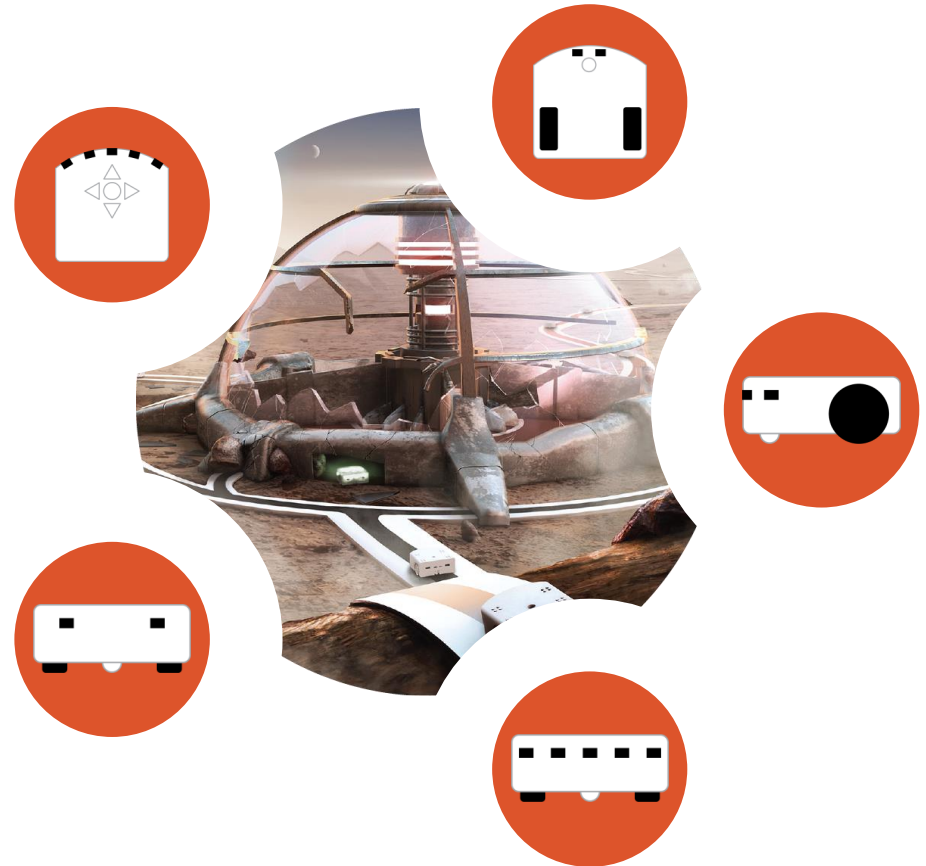


How to program with VPL and VPL advanced

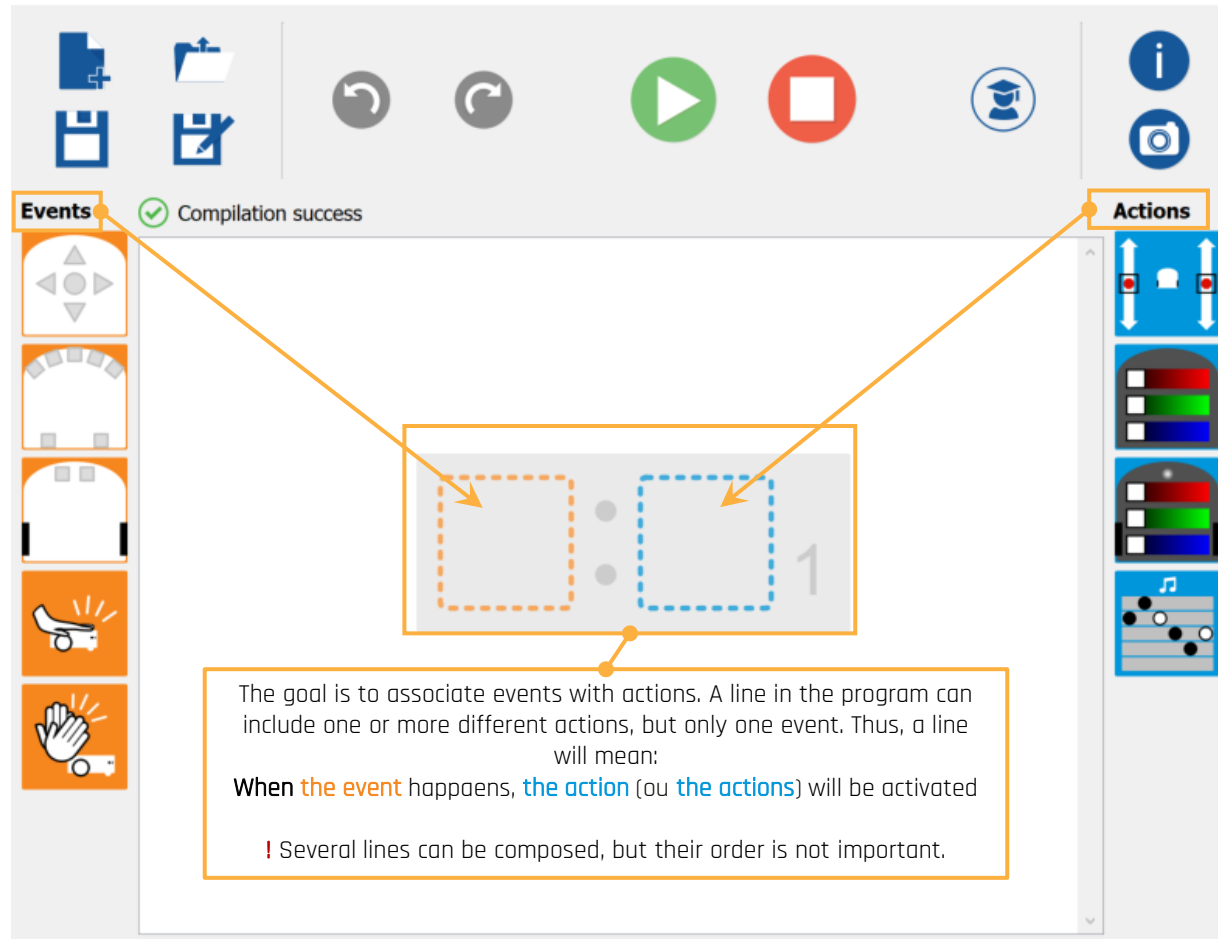


How to program Thymio on Mars

Programming of the Thymio robot on Mars is done with Aseba 1.6.1 and it can be programmed via Aseba Studio, VPL or advanced VPL



VPL (Visual Programming Language) Interface



The screenshot shows the VPL interface with a central programming block. The block has an 'Events' slot on the left and an 'Actions' slot on the right. A text box below the block explains the goal of associating events with actions. The interface also features a toolbar at the top with icons for file operations, undo, redo, play, stop, and help, and a status bar at the top right with an information icon and a camera icon. A 'Compilation success' message is visible at the top left of the main workspace.

Events ✓ Compilation success **Actions**

Buttons on the outer case of Thymio
Horizontal proximity sensors
Ground proximity sensors
Shock or incline sensor
Sound sensor

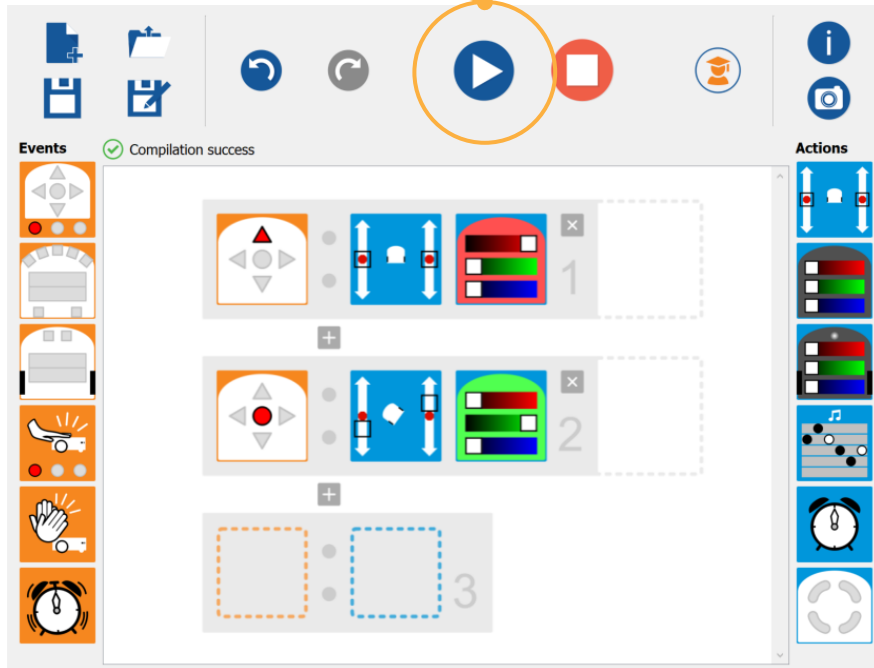
Motor speed left and right
Top LEDs RGB (red, green, blue)
Bottom LEDs (red, green, blue)
Music

The goal is to associate events with actions. A line in the program can include one or more different actions, but only one event. Thus, a line will mean:
When the event happens, **the action** (ou **the actions**) will be activated

! Several lines can be composed, but their order is not important.

How to program with VPL

Click to send the program to the robot



1. Create the program shown in the picture:

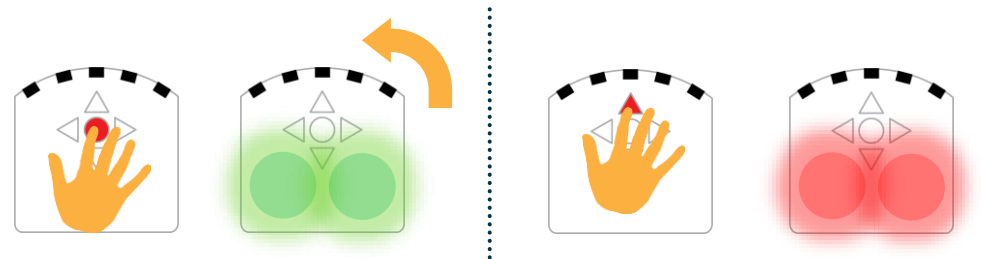
Line 1:

When the front arrow button is pressed, Thymio will stop its motors and its top LEDs will turn on and be red.

Line 2:

When the round button is pressed, Thymio will activate its motors and turn left.

2. Send the program to the robot.
3. Test the program! Thymio is waiting for your programmed event to happen:



Advanced VPL interface

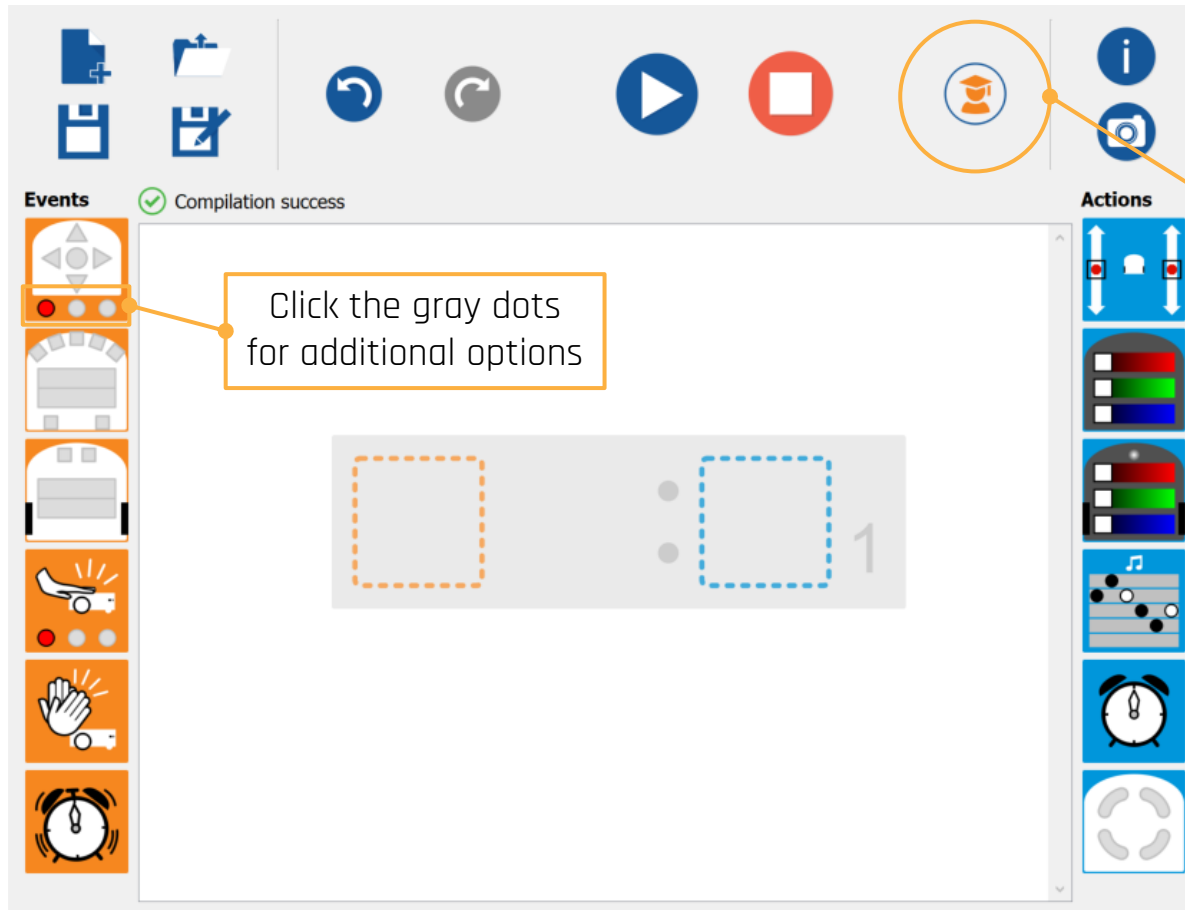
Remote control buttons
and keypad



Incline sensor



Elapsed time timer



Events ✓ Compilation success

Click here to go to the advanced mode

Click the gray dots for additional options

Actions

Start time timer

States

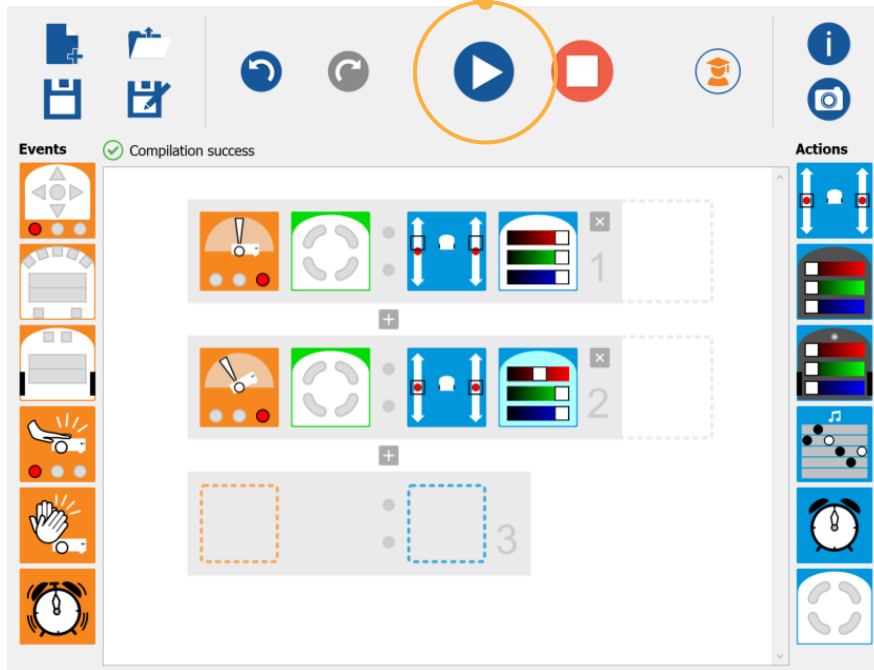
Click here to go to the advanced mode

Start time timer

States

How to program with advanced VPL

Click to send the program to the robot



1. Create the program shown in the picture:

Line 1:

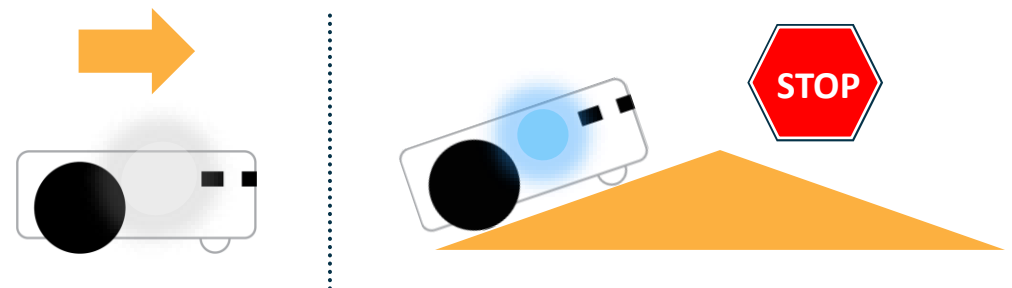
When Thymio is on a flat surface, it moves forward and lights up white.

Line 2:

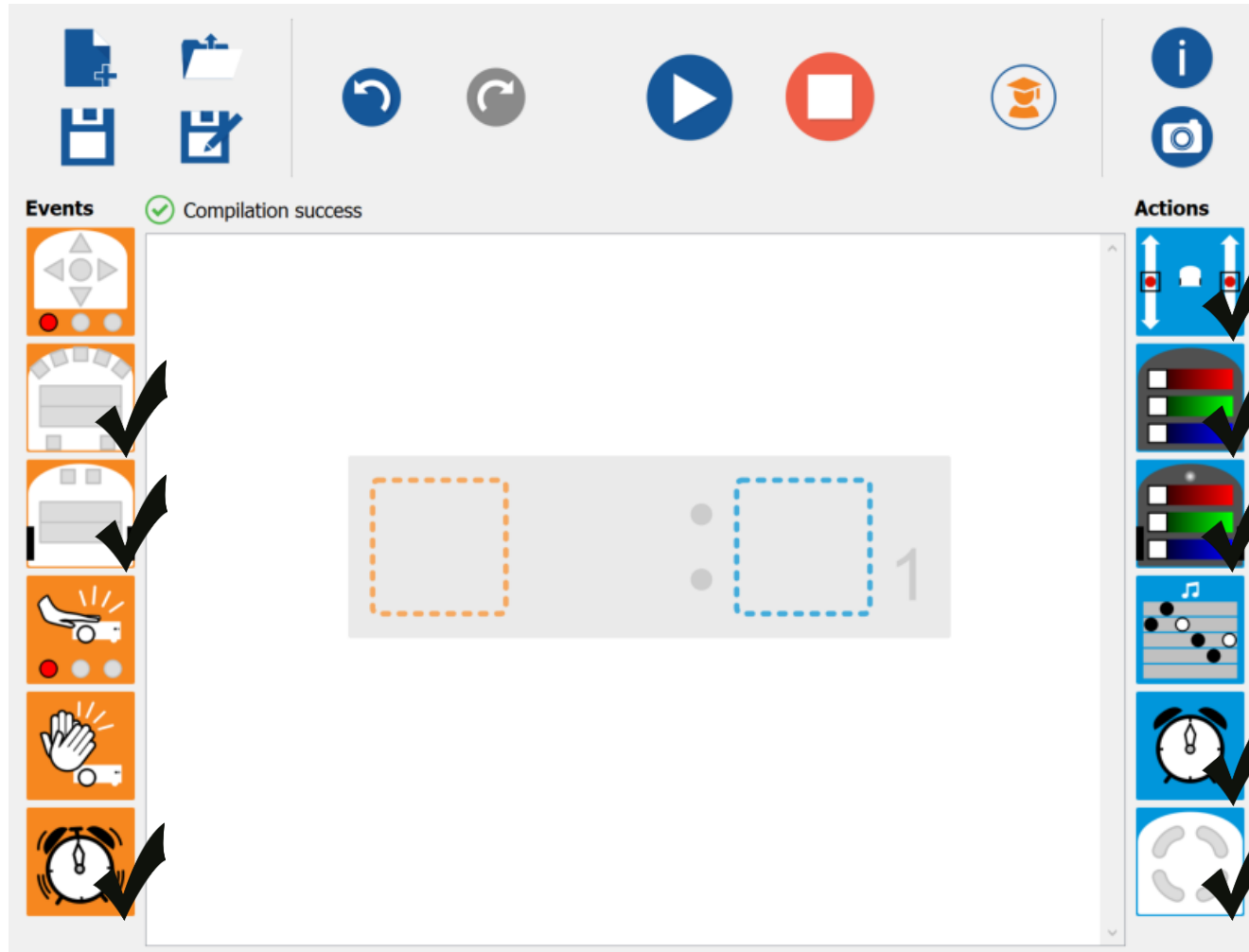
When Thymio is on a slope, it stops and lights up blue.

2. Send the code to the robot and test it:

! A slope can be built with a material available in your classroom (a book, Thymio's box etc).



Events and Actions blocks used for a Mission



Horizontal proximity sensors

Ground proximity sensors

Elapsed time timer

Actions

Motor speed left and right

Top LEDs RGB (red, green, blue)

Bottom LEDs (red, green, blue)

Start time timer

States