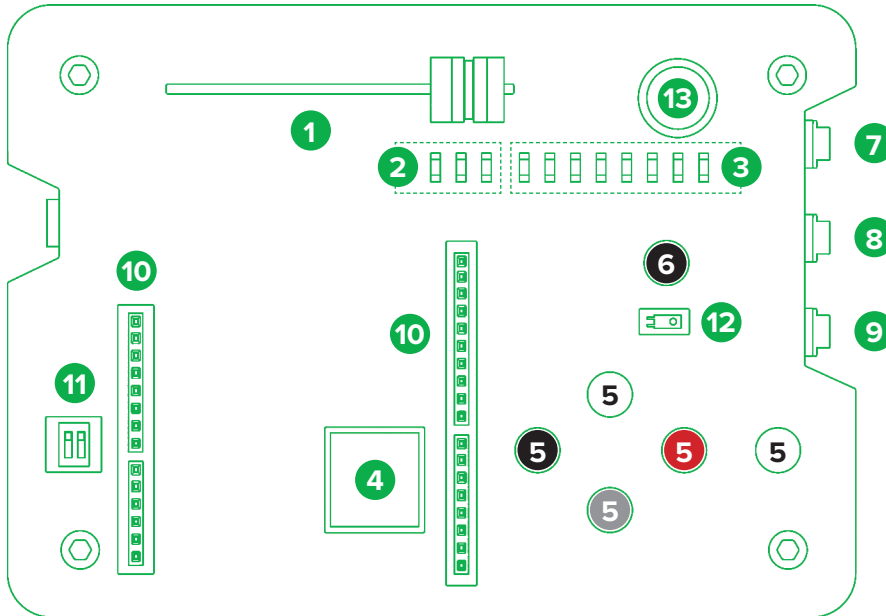


PARTS OF THE LABORATORY



1. Slide control (slide potentiometer)
2. Three LEDs (red, yellow, green)
3. Controlled 8 LED matrix
4. Loudspeaker
5. Five buttons
6. Reset button
7. D13 line connector: Line for reading and writing digital data (0/1).
8. A1 line connector: Line for reading analogue data (0-100). Can also be used as line D13.
9. A0 line connector: Line for reading analogue data (0-100). Can also be used as line D13.
10. Arduino Uno compatible connectors
 - 11. Dip switches:
 - 1-ON = Part of the laboratory's own components (#1, #3, #4, #12, #13) are disconnected, making it possible to use the laboratory as Arduino Uno. Buttons and external connectors (A0, A1, D13) are functional. All #10 lines of the connectors are in use.
 - 1-OFF = All of the laboratory's own components are in use. Part of the #10 lines of the connectors are connected to the laboratory's own components.
 - 2-ON = Serial communication goes to the connector's #10 lines (D0/RX, D1/TX). USB controller (FTDI circuit) is switched off.
 - 2-OFF = Serial communication functioning through USB lead, FTDI circuit is on.
12. Light sensor (phototransistor)
13. Sound sensor (microphone)

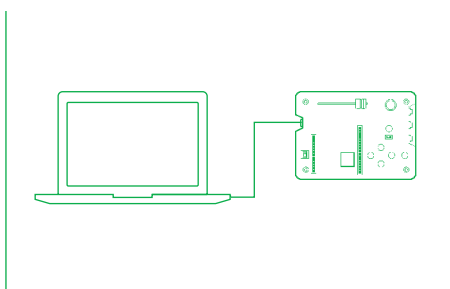
COMPATIBILITY

Download software for programming the laboratory (Windows, Mac, Linux): <http://files.robbo.world>

ESTABLISHING CONNECTION

- Attach one end of the USB cable to the laboratory and the other end to the computer (IMAGE 1).
- Open the Robbo Scratch software on your computer.
- The computer finds the laboratory automatically.
- Wait until the circle on the Control panel turns green as a sign of established connection. If the circle does not turn green, press the Update firmware button.

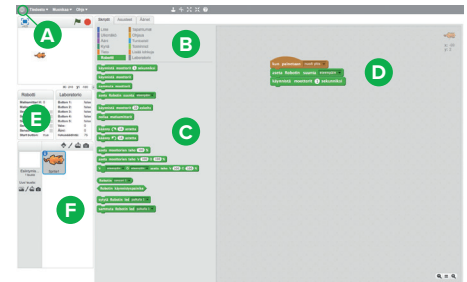
IMAGE 1



PROGRAM YOUR LABORATORY

Connect the laboratory to the machine and see what happens in the Laboratory section, when you move the slide controller, press the switches or speak at different volumes.

- The laboratory is programmed using the Robbo Scratch program, which contains the following items:
- A. **Globe icon:** change language here.
 - B. **Command menu:** in this menu you find the command groups.
 - C. **Command group:** here you see the commands.
 - D. **Programming section:** drag the commands to this section one below the other.
 - E. **Sensor and button values** can be traced in this section.
 - F. **Scene:** In this section you can move figures (in the picture a cat).



PROGRAM THE LABORATORY TO FUNCTION AS A CONTROLLER

The laboratory can be transformed to a controller as follows:

1. Choose the commands of the right colour from the command menu (see "Programming using the laboratory", point B).
2. Write the code from up to down.
3. Press the spacebar.
4. Try to move the figure on the scene forward and backward and right and left using the colour buttons (see "Laboratory parts", point 5).

