# Miele Washing Machine Experience Kit

# What’s in the kit

|  |  |
| --- | --- |
| Picture | Description |
|  | **Breadboard** folosit pentru a aranja componentele. |
| Image result for rgb led | **RGB – LED** contains a red, green and blue LED chip internally. Each of the chips can be controlled separately though the respective lead. The fourth lead is the common cathode. |
| Image result for l298n motor driver |  |
| Image result for lcd display 16x2 |  |
|  |  |
| Image result for potentiometer |  |
| Image result for reed switch |  |
| Image result for jumper wires male to male |  |
|  |  |

# Overview of Arduino Integrated Development Environment

# Experiment 1 - Door closed detection & start button operation

1. What you need: Breadboard, washing machine, wires
2. Set up the breadboard as shown:

[Drawing or picture]

1. The wires from the door contact in the washing machine need to be connected to pin x and y, the wires from the start button to a, b and the pins of the RGB led in c d e f
2. Open the project, locate function, etc… [So when the door is closed, the green LED should be switched on, if it’s opened, green led should be off]
3. When the start button is pressed, red led on, when released red led off
4. Compile, download code….
5. Check functionality. Close door – green led on? Open door – green led off? Push start button – red led on? Release start button – red led off? All good? Great, continue.

# Experiment 2 - Detect TwinDos cartridges present

1. What you need: Completed experiment 1 setup, 2x reed contacts
2. Set up the breadboard as shown:

[Drawing or picture]

The wires from reed contact 1 go to a, b, from reed contact 2 go to x, y

1. Locate function…. When cartridge 1 is inserted, let blue led flash 1x, when cartridge 2 is inserted let blue led flash 2x
2. Check….

# Experiment 3 - Select washing program

(potentiometer & ADC)

# Experiment 4 - Control motor

(H-bridge, PWM)

# Experiment 5 - Read from temperature sensor

(I2C or 1-wire)

# Experiment 6 - Control heating

(resistor, simple hysteresis controller)

# Experiment 7 - Create a washing program

(data structures, state machine?)

# Experiment - 8 Control speaker

(indicate end of program)