

# STEM Qboidz & Junior Robotics Set

## E16.1 USER MANUAL

The **Qboidz & Junior Robotics education set** is the ultimate solution for Preschool & early Primary school students of ages 5-7. It is the combination of the large tub of Qboidz (E10) which allows more than 90 models to be created from the younger age of 3, and the Junior Robotics set (E15) that steps up the complexity for the higher ages and includes the ERP MINI controller, sensors, light and motor! The merging of creativity with the ability to code and animate models, provides a unique combination for open-projects and multi-level thinking.





## Engino® Robotics philosophy

Intellectual development helps students to develop their ideas while acquiring new information. This is essential for the development and improvement of creativity and laboratory skills. The combination of MINI 2.0 controller with the patent pending KEIRO™ software is an ideal solution for teaching robotics.

Engino® is providing educational products with multiple innovative ideas. The MINI 2.0 controller allows **five interconnected ways of programming**, so that users can choose the desired method according to their age and experience.



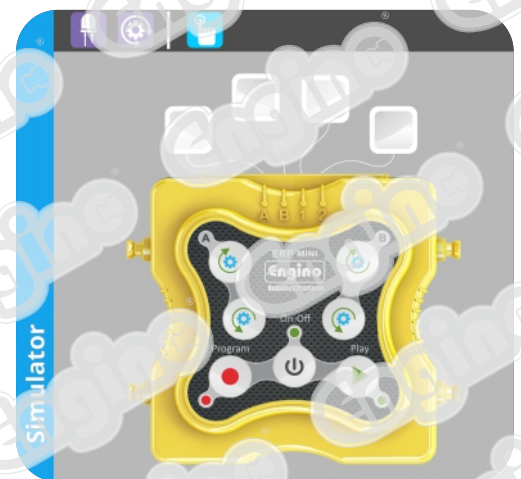
## Manual programming

This first level of programming is about interacting physically with control devices. The action of pushing buttons is a method that all children are familiar with.

Students can record any sequence of commands directly from the MINI 2.0 controller and save it on the device. The action can then be recalled and repeated for unlimited number of times. This fundamental programming method is essential in teaching the procedure of commands and sequence of events.

## Simulator

This is a special window in the KEIRO™ software that simulates the functions of the actual controller, with digital buttons instead of physical. Once the MINI 2.0 controller is connected to a device (either PC or tablet), the user can record a program and get a visible feedback from the robot. While the program is being recorded, the flow diagram is generated and appears as visual blocks.



## KEIRO Code

A “pseudolanguage” (not an actual programming language) created specifically for the KEIRO™ software.

It has many known terms of programming such as BEGIN, IF, END, etc. It is the ideal tool for introducing advanced programming, as it offers a quick preview of the program in a textual form.

```
KEIRO Code
BEGIN:
  MOTOR: PORT: A
        STATE: ON FOREVER
        Direction: CLOCKWISE
        Speed: 100
        Delay (s): 0
        AFTER PREVIOUS
  IF: TOUCH: Port: 1 == TRUE
    LED: Port: A
        State: ON FOR DURATION
        Delay (s): 0
        Duration (s): 1.5
        AFTER PREVIOUS
  ENDIF
END
```

