

FaceBot - Tangible STEM & Robotics Set

E17.1 USER MANUAL

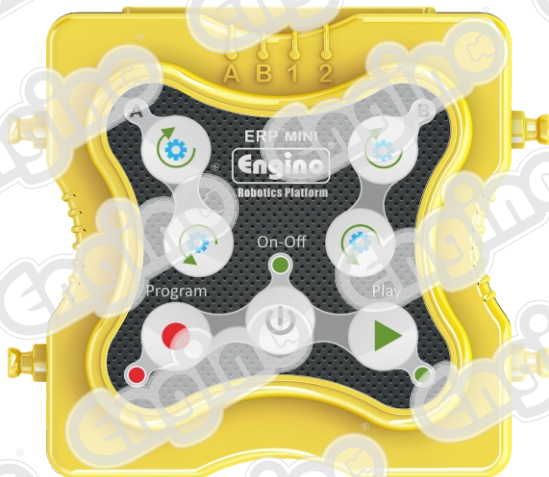
This **FaceBot - Tangible STEM & Robotics Set** is specially designed for Preschool students of ages 5-7. It provides a unique coding concept by introducing the new FaceBot, a constructional bot-car that can have click-on different "faces". Through the "faces", kids are engaged more through story telling and real-life scenarios. This buildable robot includes 2 dual sensors (can be used as proximity or colour) along with 2 **ENGINEO**® motors, and the iconic **ERP MINI** controller. This controller has onboard buttons to allow manual programming as a first step into algorithmic thinking, but is also programmable with our **KEIRO™** software. The set comes with tangible programming tiles which children can connect like a puzzle and physically see their code. An ingenious board game is included to challenge kids with different decision paths and help them visualize their solutions before transferring the code to the App and drive the robot. The other side of the board game has a line-following track with coloured stations that empower conditional statements! Extra parts are included in the set to create individual models besides the FaceBot.



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
```



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