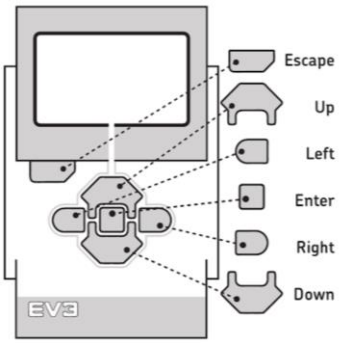
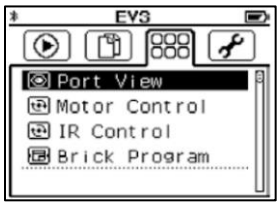
Brick Basics



EV3 Brick Face:
NOTE: The Center/Enter button turns on the Brick.

Run Recent Menu:
Displays recently run programs.

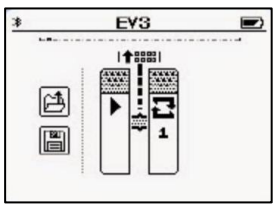
File Navigation Menu:
Displays files, folders and projects that have been saved to the brick.



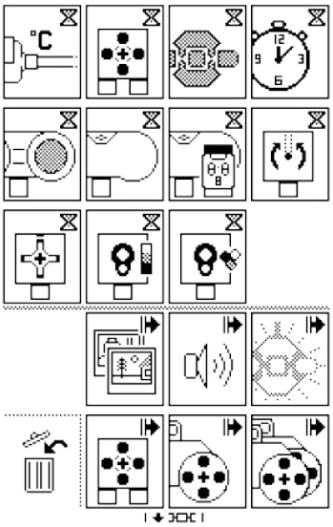
Brick Apps Menu:
Displays the various programs available on the brick.

Settings Menu:
Can adjust the volume, power-down to sleep mode to save battery, connect to Bluetooth and WiFi, rename the Brick and how much available memory is on the Brick.

Power-Off Menu:
To power-off the brick, select the back button until this menu appears. Then use the right arrow key to select the check mark and then select the Center button to power-off the brick.



Brick Program Option
To create an on-brick program select the Brick Program option. The Start screen provides you with a Start and a Loop block that are connected via a Sequence Wire. You can add up to 16 blocks to a program.



Brick Programming Palette
The screen cannot display all of the command blocks at once. To scroll through all the command blocks, select the up button.

Command blocks that wait for input will have an hourglass in the top right corner.

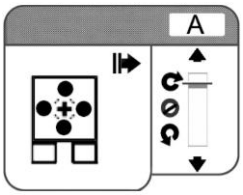
Command blocks that create output actions will have an arrow pointing to the right in the right-hand corner.

The trash removes the current block.

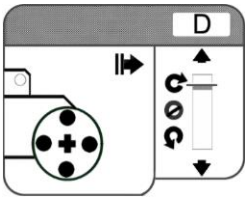
To navigate through the menus, use the Up, Down, Left or Right buttons on the Brick.

To make a selection use the Center button on the Brick.

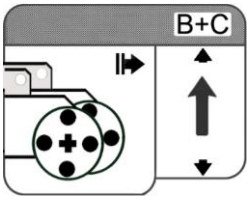
Select the Back button to return to the programing screen.



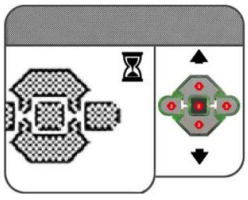
Medium Motor Block
This block works in conjunction with the Medium Motor accessory and attaches to port A and includes a built-in Rotation Sensor. The Medium Motor block can turn on or off, control the power level, or run for a specified amount of time or rotations and prepares the motor to rotate.



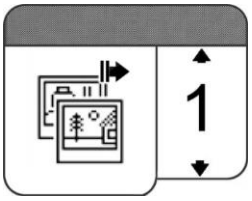
Large Motor Block
This block works with the Large Motor accessory, attaches to port D and includes a built-in Rotation Sensor with 1-degree resolution for precise control and prepares the motor to rotate.



Large Motor Steering Block
This block works with the Large Motor accessory and attaches to ports B & C and is intended to be the driving base for robots.

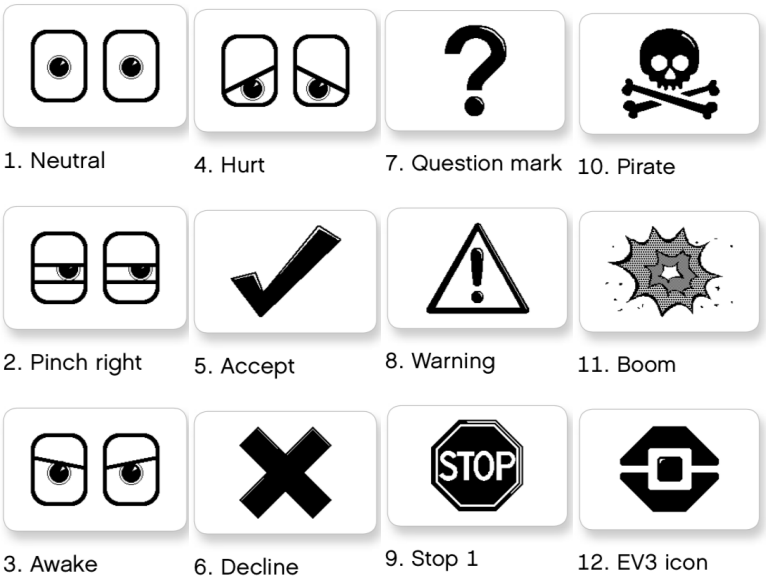


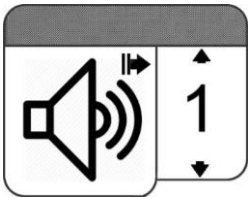
Brick Light Block
This block turns the status light surrounding the EV3 Brick buttons on and off. You can change the light color and tell it to blink or not.



Display Block

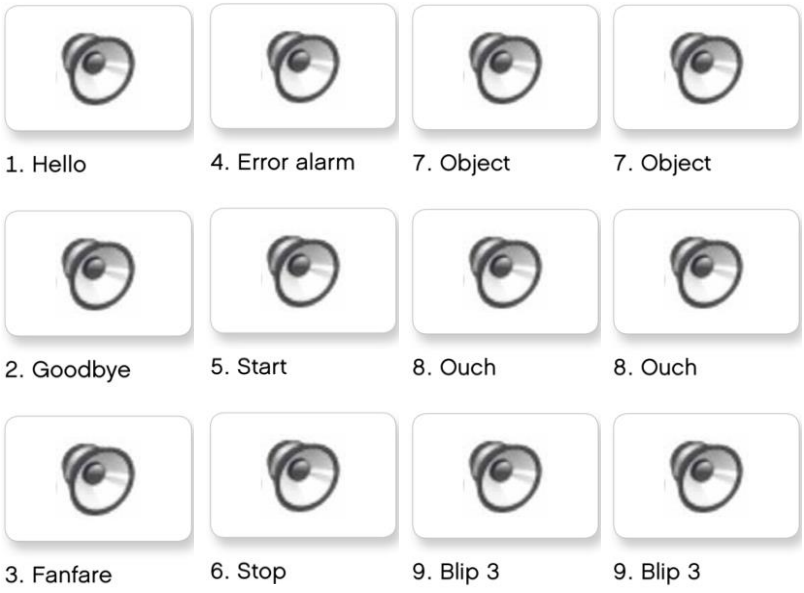
There are 12 images available on the brick that will display a preset image on the front of the EV3 brick while a program is running.

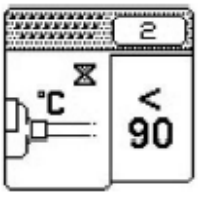




Sound Block

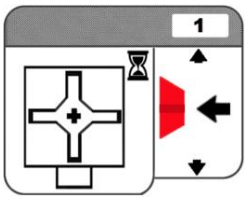
There are 12 sounds available on the brick that can be used while a program is running.





Temperature Sensor Block

This block uses a sensor that detects temperature fluctuation.



Touch Sensor Block

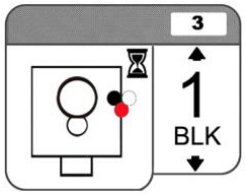
This block waits for the Touch Sensor connected to input port 1 to be pressed, released, or bumped.

This block has 3 states of use. They are as follows:

Wait to be pressed.

Wait to be released.

Wait to be pressed and released.

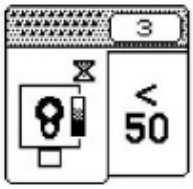


Color Sensor Color Mode Block

This block uses the digital sensor that can detect the color or intensity of light that enters the small window on the face of the sensor.

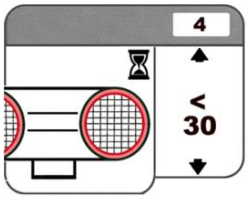
In Color Mode, the Color Sensor recognizes seven colors and the absence of color. This enables the robot to differentiate between colors and allows programming to sort colored objects, speak the names of the color as they are detected, or stop action when it sees red. The colors are assigned number as follows:

0	1	2	3	4	5	6	7
No Color	Black	Blue	Green	Yellow	Red	White	Brown



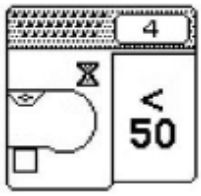
Color Sensor Reflected Mode

This block waits for the Color Sensor connected to input part 3, used in Reflected Light Intensity mode, to measure a value beyond a certain threshold expressed as a percentage. The sensor measures the light of the LED reflected by surfaces.



Ultrasonic Sensor Block

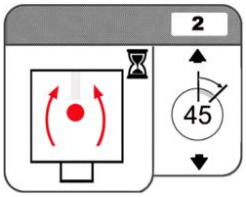
This block uses the Ultrasonic Sensor which measures the distance to an object in front of it by sending out high-frequency sound waves and measuring how long it takes the sound to reflect back to the sensor.



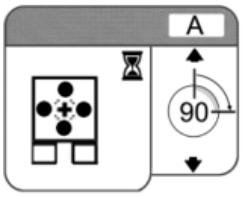
IR Sensor Proximity Mode Block

This block measures the distance from an object lessor or greater than the specified value. The IR Sensor measures distances expressed as a percentage that does not correspond precisely to a distance.

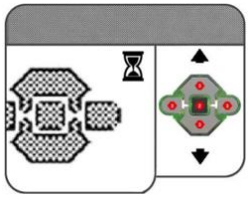
IR Sensor Remote Mode Block
This block uses the Infrared Sensor in Remote Mode. Set Channel to the channel used by the IR beacon. The Button ID of the currently pressed button, or combination of buttons, is output in Button ID.



Gyro Sensor Block
This block uses a digital sensor that detects rotational motion on a single axis.

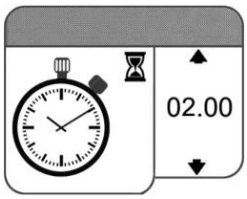


Medium Motor Wait Block
This block waits for the built-in rotation sensor of the Servo Motor attached to port A to measure a change in the shaft angle equal to the threshold specified as a parameter, expressed in degrees either clockwise or counterclockwise.



Brick Light – Wait for Button Press Block
This block waits for an EV3 Brick button to be pressed. This will allow you to start a brick program and then the controller will wait for you to press a brick button to start to execute the rest of the program.

				
Right	Left	Down	Up	Center



Timer Block
This block sets how long a specific Action Block should operate. These blocks can be combined to create longer wait times.

.25 sec	.50 sec	1 sec	2 sec	5 sec	10 sec	20 sec	60 sec

Loop Block
This block is the last block in every Brick Program sequence and can not be moved or deleted. The Loop block controls the number of times a program runs and does not included in the Block Pallet

∞	**10**	**5**	**4**	**3**	**2**	**1**
Repeats Forever	Repeats 10X	Repeats 5X	Repeats 4X	Repeats 3X	Repeats 2x	Execute Once