

# Intro to On-Brick Programming

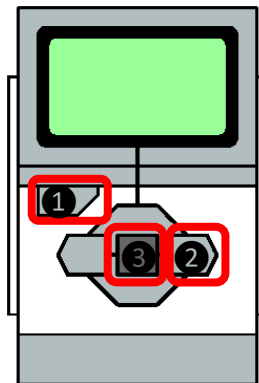
## Lesson 3



The EV3 brick comes with some basic programming commands download right on the brick. These simple commands can be used to make the robot move, make sounds or show a graphic image on the screen. You do not need to know any programming languages to program the EV3 Brick. You can follow a basic flow chart to create does not need to be connected to create a program that makes the robot move by following a basic structure using sequences, choices and loops.

### Turning the Brick On and Off:

Press the Center button to turn on the EV3 Brick. After you press the button, the **Brick Status Light** will **turn** red and the Starting screen will be displayed. When the light changes to green, your **EV3 Brick** is ready. This can take up to 40 seconds for the EV3 Brick to turn on.

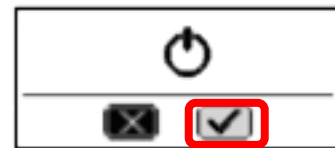
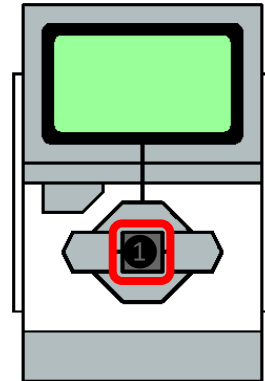


To **turn** the **EV3 Brick** off, press the Back button until you see the Shut Down screen.

Select the right arrow button to select the check mark button.

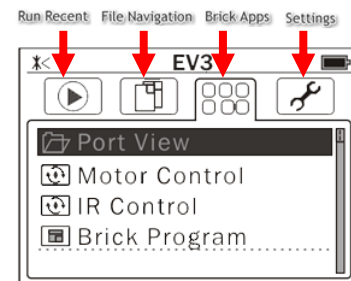
Select the center button to turn the brick off.

The Shutdown screen will now appear as the Brick is powering off.



### Navigating the Brick Apps:

There are four preinstalled applications on the EV3 Brick. They are **Run Recent**, **File Navigation**, **Brick Apps**, and **Settings**. Use the left and right buttons on the brick face to move between the menus. Use the up and down buttons to move inside each menu.

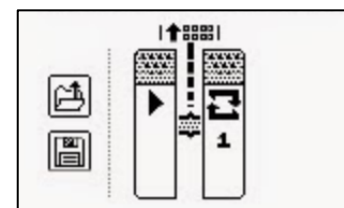
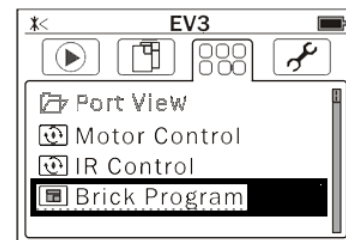


### Creating a Program:

Navigate using the right button to select the **Brick Apps** menu. Use the down button to select the **Brick Program** option and select the center button.

The start screen provides you with a Start and a Loop block that are connected via a Sequence Wire. There is also a folder button where you can search for previously saved programs and a save button.

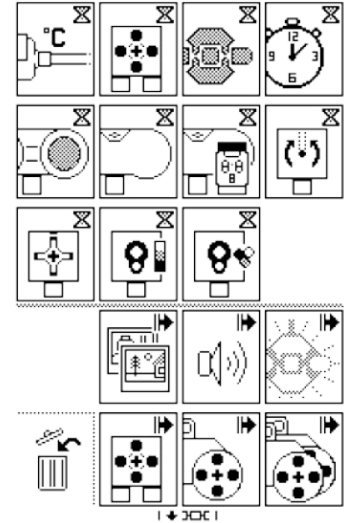
You can add up to 16 blocks to a program on the Brick.



## Add a Block to a Program:

Select the up button to see the Brick Programming Palette. You can refer to the **Brick Basics** handout to see what each brick does.

Use the left, right, up and down button to select either an action block or a wait block and then select the center button to return to the Brick Program screen to modify the options.

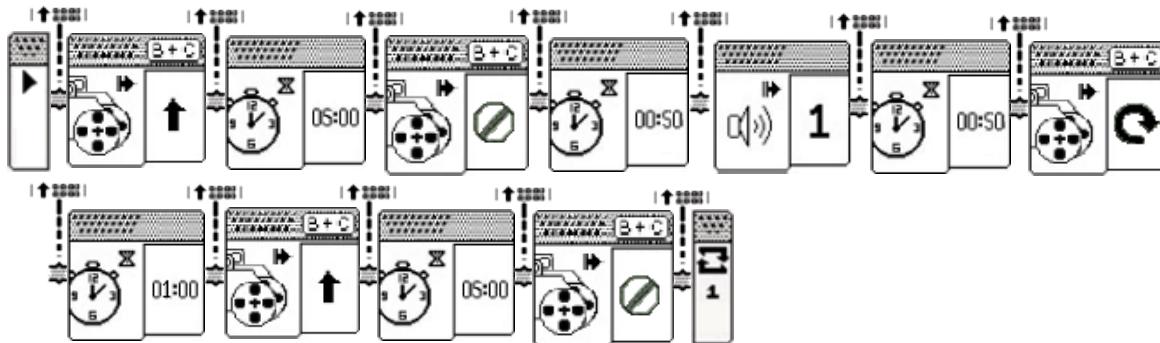


## Create the Hello Program:

The first on brick program will have the basic robot build do the following steps:

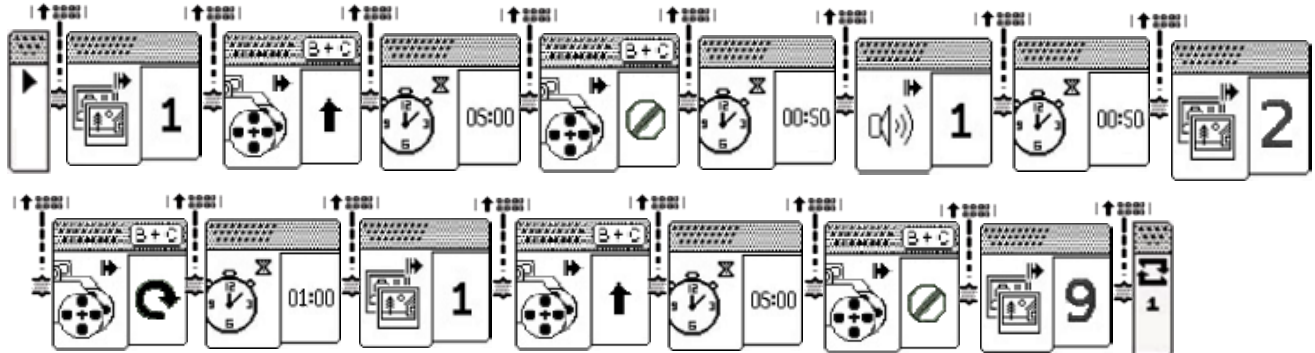
1. Go forward 5 seconds
2. Wait for ½ a second
3. Say Hello
4. Turn to the right 180 degrees
5. Stop where it started
6. Save the program as **Hello**

## Solution:



**Challenge:** Use all 16 blocks and have the robot have neutral eyes when moving forward. Use the pinch right eyes when turning right. Use the Stop image when the program completes.

## Solution:

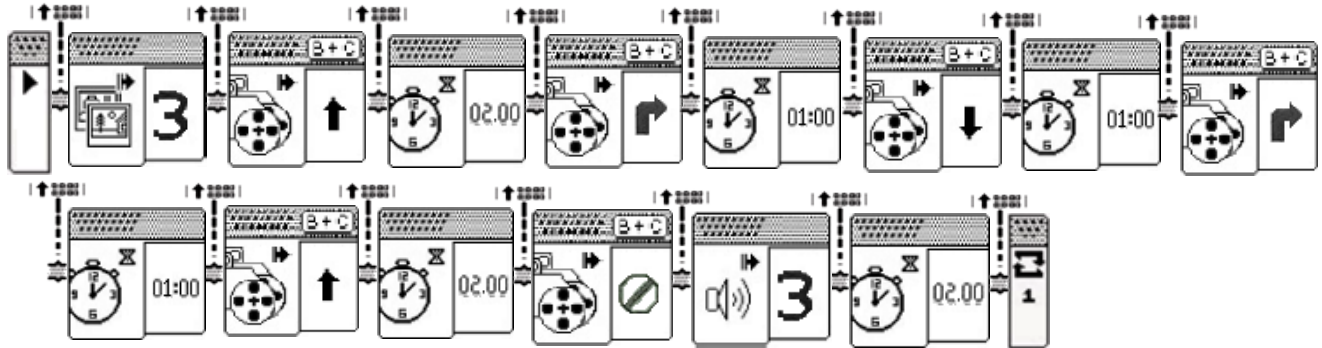


### Create a 3-Point Turn Program:

Have the robot do a 3-point turn. Program the robot to have neutral eyes while doing the routine and play the victory sound when complete.

Save the program as **3-point turn**.

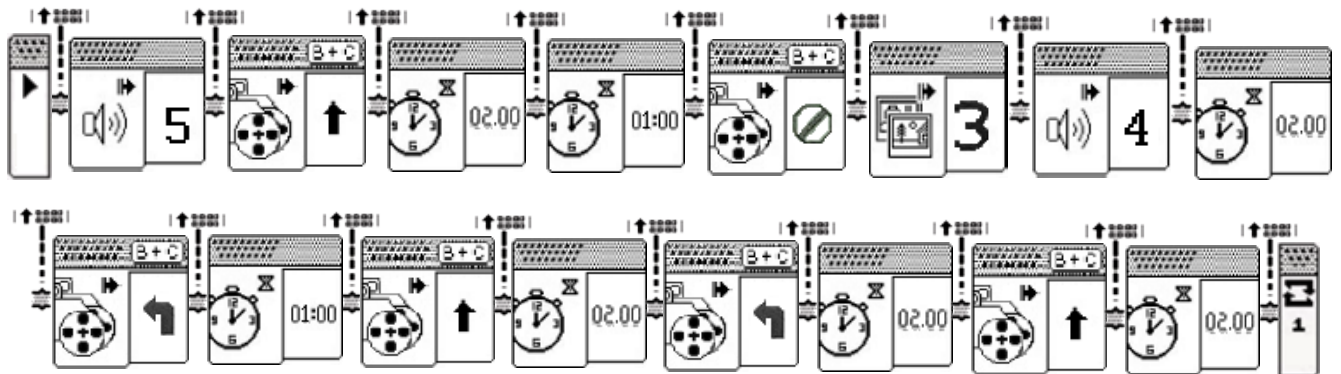
### Solution:



### Create a Tantrum Program:

Have Go forward 3 seconds and say “start” as it takes off. When it comes to a stop have it have awake eyes and play the error alarm sound. Turn left and go forward, turn left and return to starting point.

### Solution:



Lesson Challenge: Have the students create a dance routine using the various preprogrammed actions. Include eye movements and sound.