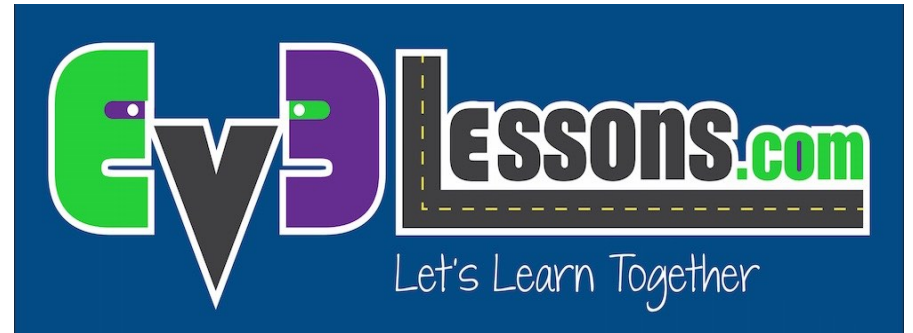
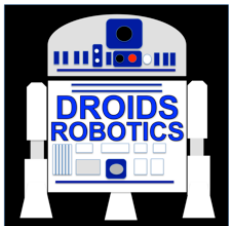


# BEGINNER EV3 PROGRAMMING LESSON



Topics Covered:  
Basic Sequencer



By: Droids Robotics

# LESSON OBJECTIVES

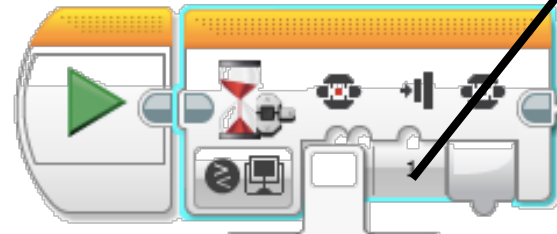
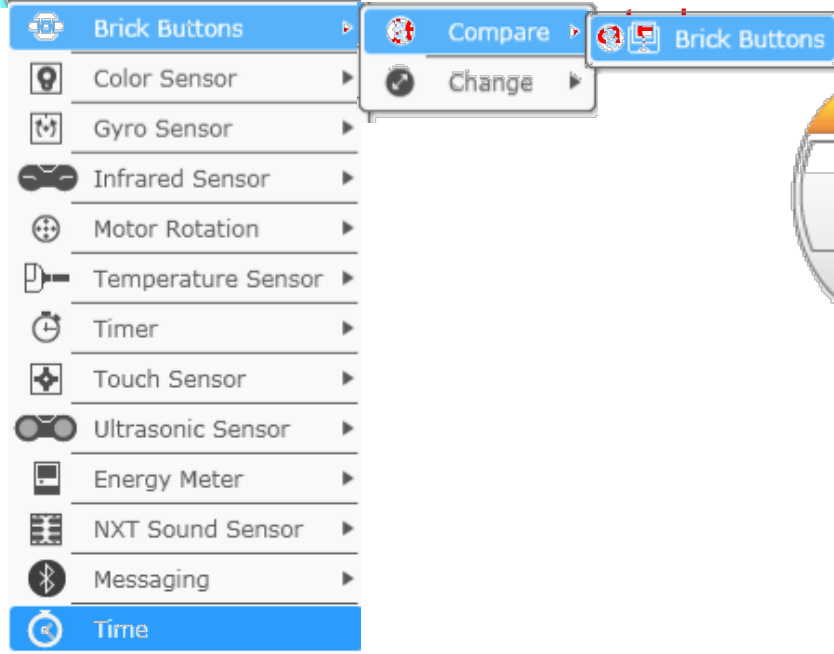
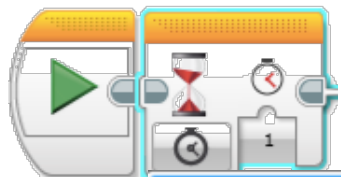
1. Learn how to use the Wait for Button Press Block
2. Learn what a Sequencer is and why it is useful
3. Learn how to make a Sequencer

# USING EV3 BRICK BUTTONS AS A SENSOR

- **All the EV3 brick buttons (except the OFF button) are like the touch sensor**
- **You can use the buttons to make a game, run different actions based on each button, or make a sequencer (explained on slide 4).**
- **You do not need to waste a sensor port on a touch sensor if you plan to use the touch sensor like a button.**
- **The first step to making a Basic Sequencer is to learn how to use the “Wait for Button Press” feature. See next slide (slide 3)**

# HOW TO USE A “WAIT FOR BUTTON PRESS” BLOCK

Wait Block – Click on the bottom left corner and select Brick Buttons – Compare – Brick Buttons



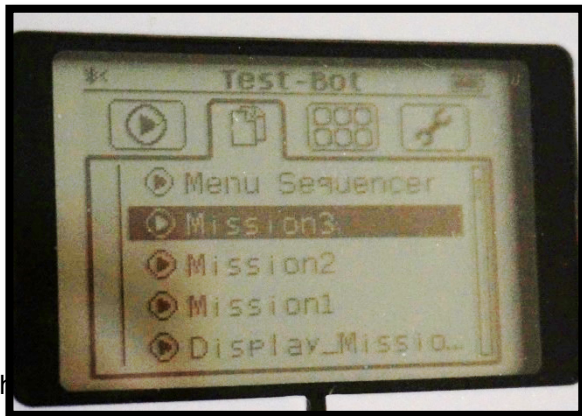
Droids recommend #2 (bumped) – most reliable

You can choose any button except the off button

# WHAT IS A SEQUENCER AND WHY USE ONE?

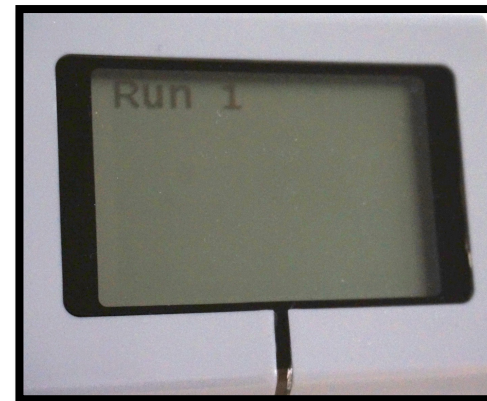
- A sequencer is a program that puts your missions in the order you choose. It is sometimes called a Master Program or a Menu System.
- Advantages: You will not need to search for the program in a jumble of programs on the brick. This will save you time on your runs.
- Disadvantages: You will not be able to re-run each program easily with a basic sequencer (check our more advanced Menu System lesson)

Programs on brick



Copyright

Sequencer



# STEP 1: CREATE A “DUMMY” SEQUENCER

The goal of this program is to create a basic master program that plays 3 runs in a row with waits in between each run, so you have time to set up.

Create a Sequencer that waits until you press the button to play the (next) actions. This will also display which mission will be played next. “Dummy” just means that you don’t have your actions yet.

Display that Run 1 will be played

Wait until the center button is pressed



Display that Run 2 will be played

Wait until the center button is pressed

Display that Run 3 will be played

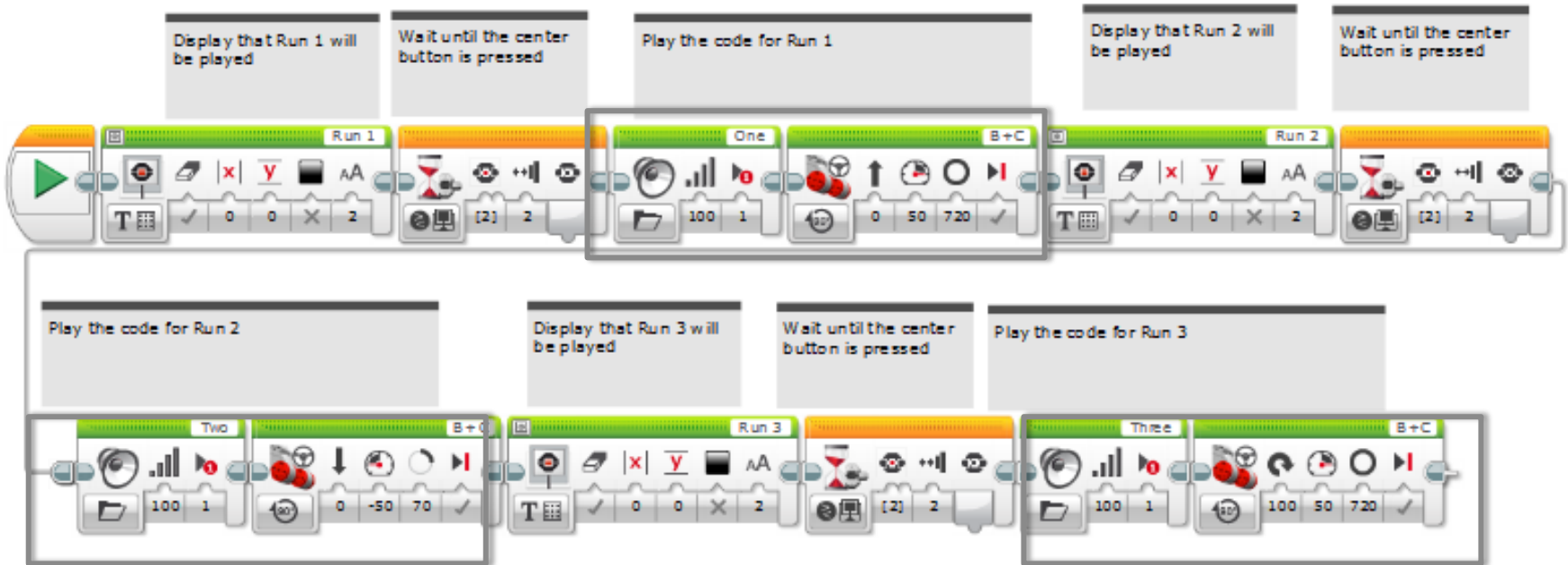
Wait until the center button is pressed



# STEP 2: ADD ACTIONS

The goal of this program is to create a basic master program that plays 3 runs in a row with waits in between each run, so you have time to set up.

Copy and paste each of your actions after each button press. Note: these missions just move and turn (don't really do much!). Replace with your own code.



➤ This sequencer code is set up for 3 actions (add/remove as needed)

# DISCUSSION GUIDE

## What did this sequencer allow you to do? Why is this useful?

- It let you run one action on your robot after another. On the EV3 Brick, it can be hard to locate your programs. This ensures that multiple programs you have written will be in a sequence.



# CREDITS

- This tutorial was created by Sanjay Seshan and Arvind Seshan from Droids Robotics.
- More lessons are available at [www.ev3lessons.com](http://www.ev3lessons.com)
- Author's Email: [team@droidsrobotics.org](mailto:team@droidsrobotics.org)



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