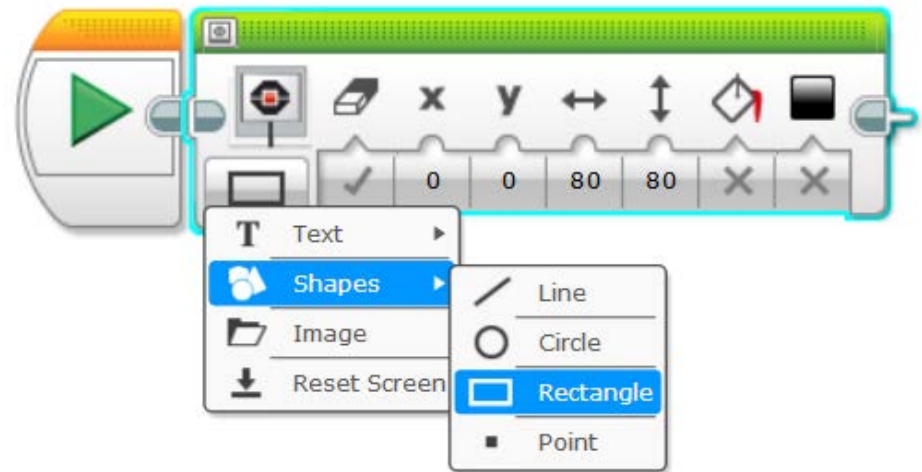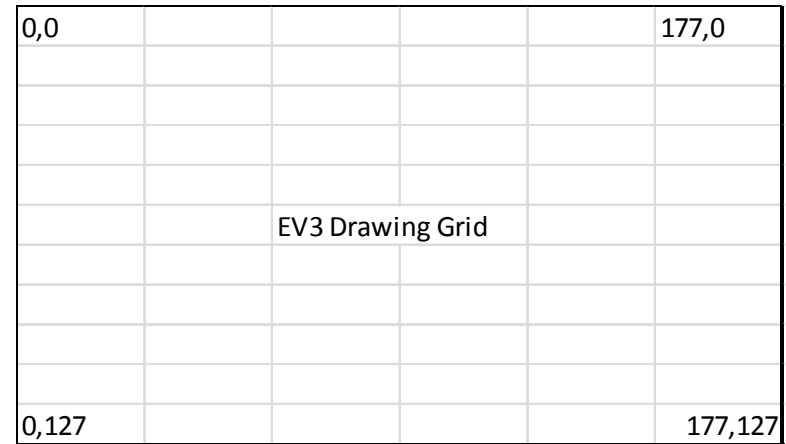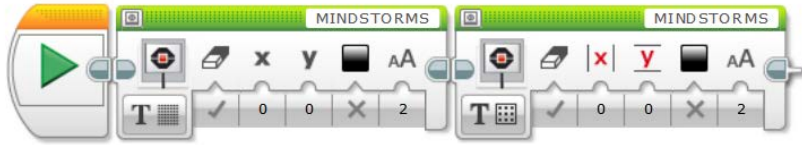# Using the EV3 Display Block

Tom Bickford

Maine Robotics

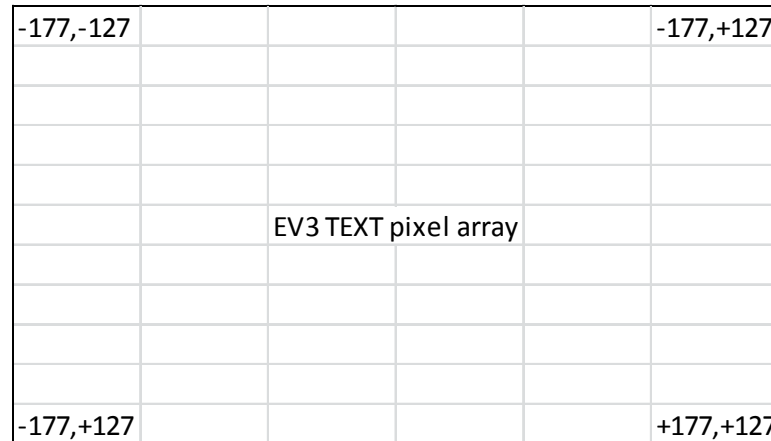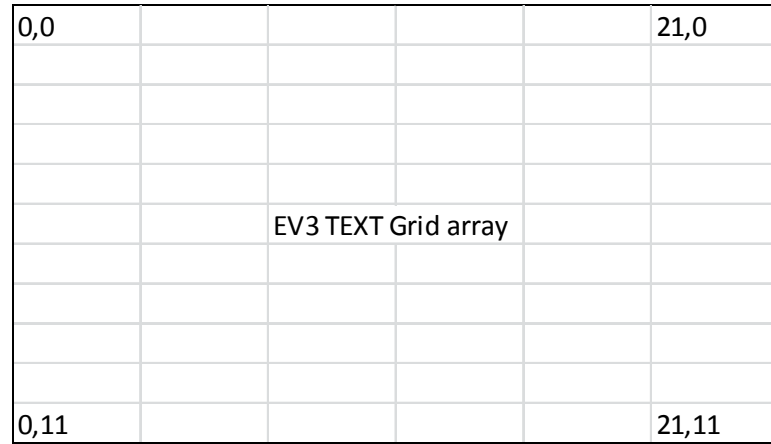© 2015

The EV3 Display Block

- Okay, we want to display objects (lines, points, circles, rectangles) on the EV3 Screen
- Note that the screen is inverted top to bottom from what most of us use for graphing purposes, but we can get around that
- If you were to draw an object (like a line or a dot or a circle) the object corresponds to the coordinates on the *EV3 Drawing Grid*
- Dots will be at the coordinates
- Circles will be centered on the coordinates
- Rectangles will start at the coordinates
- And Lines have two sets of Coordinates (x1,y1) and (x2,y2)

EV3 Drawing Grid

The EV3 Display Block

- Okay, we want to display text on the EV3 Screen
- We have two choices:
- Text – Grid
  - On the Grid Display, the screen is broken into Rows and Columns.
    - There are 22 Columns (0 to 21) and
    - There are 12 Columns (0 to 11)
- Text – Pixel
  - On the Pixel Display, the screen is broken into Quadrants, like on a quadrant graph.
    - There are 355 pixels going from left to right (-177 to +177) and these represent your x coordinate.
    - There are 255 pixels going from top to bottom (-127 to +127) and these represent your y coordinate.
- Text messages are tied to the coordinate used (either Grid or Pixel) and that coordinate represents the START and TOP of your text message.
- So a message "HELLO" located on a GRID at 0,0 would start in the upper left corner
- And the same message located on a PIXEL at 0,0 would start in the dead center of the display (but would display to the RIGHT and just BELOW that center point).

0,0				21,0
		EV3 TEXT Grid array		
0,11				21,11

-177,-127				-177,+127
		EV3 TEXT pixel array		
-177,+127				+177,+127

Egad! Things to remember…

- So depending on whether you are:
  - Displaying text (by row and column)
  - Displaying text (by pixel placement) or
  - Displaying a drawing…

- You are using three different graphic arrays.