How to CODE your Extension Board using BLOCKLY– 10 LED's & 2 Tunes.

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Below is a get started <u>Sample Only</u>, if using BLOCKLY to CODE your Extension Board on your Picaxe 14M2 Microcontroller.

Copy and paste your own Tunes from the TUNES FOLDER into BASIC where "Star Wars and the Imperial March" are below.

Annotations/explanations are with red arrows below, they are not part of the BLOCKLY program.

NOTE– The sample below is for 10 circuits & 2 Tunes, only put in 1 if you only have 1 Tune and the first 4 outputs if you only have 4 wires or circuits from your microcontroller to your LED's etc.

Design Brief-
Using BLOCKLY, CODE your Extension Board to run 10 LED's & 2 Tunes.

start

BASIC
high B.0,B.1,B.2,B.3,B.4,B.5,c.0,c.1,c.2,c.4 ← Turns ON all 10 circuits at once.
wait 2 ← Waits all ON for 2 seconds.
low B.0,B.1,B.2,B.3,B.4,B.5,c.0,c.1,c.2,c.4 ← Turns OFF all 10 circuits at once.

BASIC 'Star Wars Theme
tune 2, 6, ($AA,$85,$43,$42,$40,$8A,$C5,$43,$42,$40,$8A,$C5,$43,$42,$43,$C0,$65,$65,$65,$EA,$C5,$43,$42,$40,$8A ← Copy and Paste your own 1st Tune from the Tunes Folder.

turn output B.0 on for 1000 ms
turn output B.1 on for 1000 ms
turn output B.2 on for 1000 ms   Only put in starting from the top B.0, the number of circuits or wires from your microcontroller to your LED's.
turn output B.3 on for 1000 ms   ie - 4 wires then only the first 4 outputs.
turn output B.4 on for 1000 ms ← Turns ON all 10 circuits or sets of LED's for 1000 milliseconds (1 second), one at a time then off.
turn output B.5 on for 1000 ms   Change the time down for quicker and up for slower durations of LED's.
turn output C.0 on for 1000 ms
turn output C.1 on for 1000 ms
turn output C.2 on for 1000 ms
turn output C.4 on for 1000 ms ← Copy and Paste your own 2nd Tune if required, from the Tunes Folder.

BASIC 'Star Wars Imperial March
tune 2, 8, ($27,$27,$27,$63,$6A,$27,$63,$6A,$27,$6C,$02,$02,$02,$43,$6A,$26,$63,$6A,$27,$6C,$07,$67,$67,$07,$46

BASIC
high B.0,B.1,B.2,B.3,B.4,B.5,c.0,c.1,c.2,c.4 ← Turns ON all 10 circuits at once.
wait 2 ← Waits all ON for 2 seconds.
low B.0,B.1,B.2,B.3,B.4,B.5,c.0,c.1,c.2,c.4 ← Turns OFF all 10 circuits at once.

restart all tasks ← Loops to restart from the top, all the CODE above to make it run continuously.

Alter the above as describe, to make your own personal flashing and sounding Extension Board.

You can use the Simulation on PICAXE EDITOR 6 to test you CODE but you will need your headphones/ear buds to hear the Tunes, on the schools computers.

Once Happy, Download your CODE to your Microcontroller and run it. If you want to alter it you can change it as many times as you wish and Download again.

CONGRATULATIONS on Designing, Building, Coding and Finally Running your own individual Microcontrolled Model.

WELL DONE!