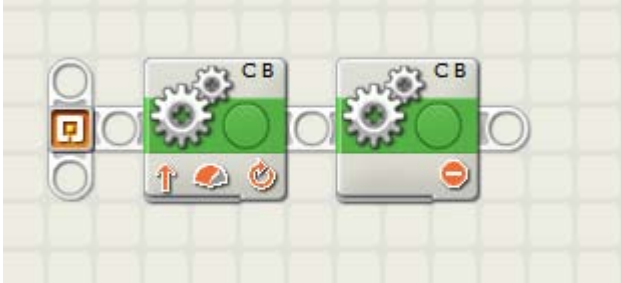


NXT Programming Cheat Sheet

Run Forward

Move Blocks – Runs both motors from one icon. Will synchronize both motors. Can be programmed to wait for unlimited, rotations, degrees, or seconds.



Motor Blocks – Runs one motor per icon. When programmed on unlimited the motors will run together. When rotations, degrees or seconds are selected, then the motors will run alternately.

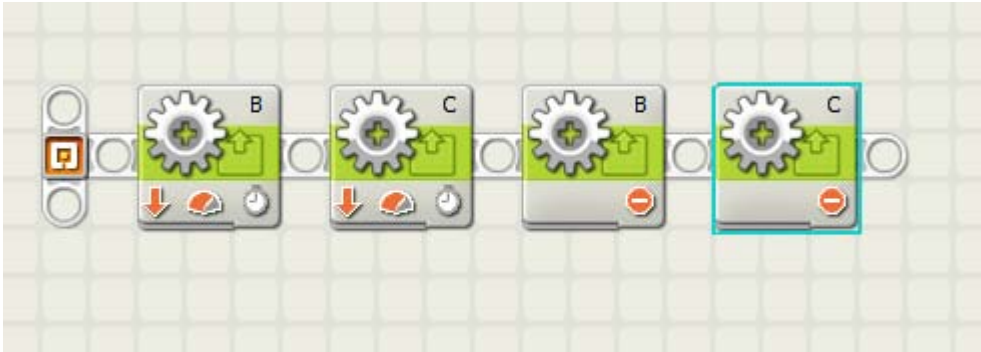


Run Backwards

Move Blocks – opposite direction used from forward program



Motor Blocks – opposite direction used from forward program



Turns

Move Blocks- Both motors will run simultaneously. Use direction arrow in configuration panel to change degree of turn. The farther away the direction pointer is from center, the tighter the turn.



Motor Blocks- Only one motor will run. The turn will be sharp and in place. This is called a swing turn.



Point Turn – Uses motor blocks and runs the motors in opposite directions. However, to prevent the motors from running alternately, the use of a wait for block is needed. This turn will allow the robot to turn in one place.



Display and Sounds

Display – Use the display and wait for icon underneath the Move Block palette.

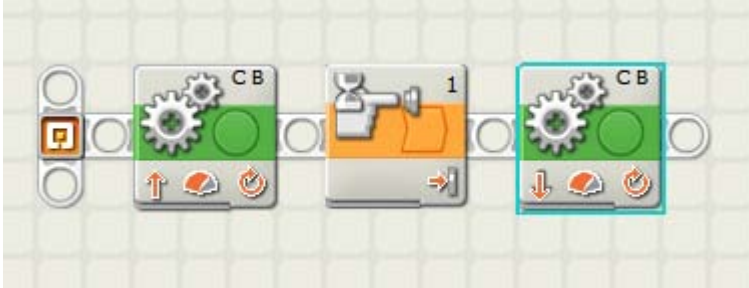


Sound – Use the sound icon from the Motor Block icon. Make sure the Wait for Completion is checked or the sound will not replay the next time the program is downloaded.

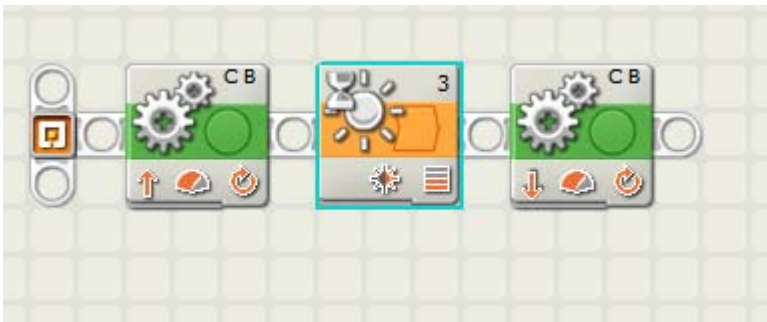


Sensors

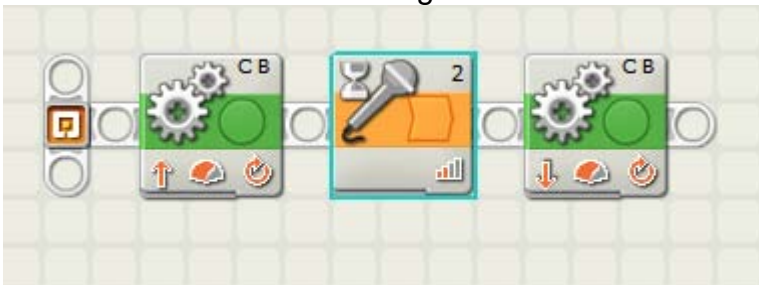
Wait for Touch – Make sure to include the Move Block after the Wait for block or the program will not know how to react once the sensor has been activated.



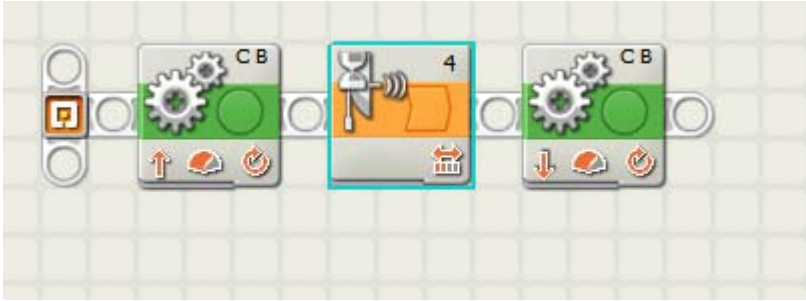
Wait for light – using the View Menu on the NXT, locate Reflected light and calibrate an average between two opposing colors before using.



Wait for Sound – the Wait for Sound block uses dBA [adjusted decibels] so make sure to calibrate in dBA through the View window of the NXT



Wait for Distance – Measures in centimeters and inches

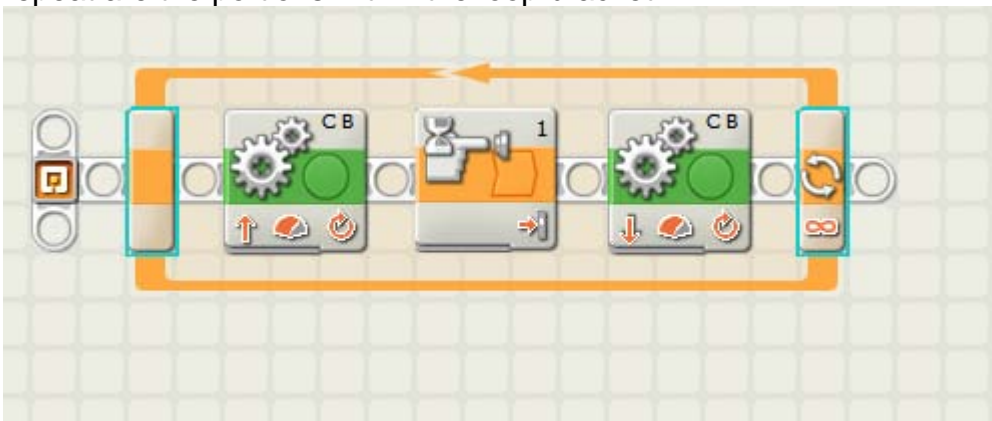


Wait for rotation – rotation sensors are built into the servo motors. You may set a Wait for Rotation icon within the program. This function is also served in the configuration panel of the Move and Motor blocks. Can also be set for degrees or number of rotations.



Loops and Task Splits

Loops – Make sure to set how many times the loop will run in your program from the configuration panel. Remember, the only parts of your program that will repeat are the portions within the loop bracket.



Task Splits – This icon is used when you have an if/then statement in your program. In this case, when the light sensor reads more than our threshold value it will run the motors. If the light sensor reads less than the threshold value, then the robot will play a sound instead.

