**VEX Testbed - Programming activities**

1) Build the VEX Testbed platform. Use the instructions on my website

2) Refer to the video tutorials on my “Web Sites” tab (scroll to VEX Robotics and click on the link for VEX Testbed programming). Use the first 4 videos to learn how to start programming with RobotC for VEX robotics.

3) Programming

 1 – turn on one motor

 2 – turn on both motors

 3 - make both motors turn in the same direction

 4 – make one motor run for 10 seconds, stop, then the other motor runs for 10 seconds

 5 – open the claw then close the claw

 6 – push button to start both motors turning in the same direction for 10 seconds

 7 – push button to open claw, push limit switch to close the claw

 8 – push button to start both motors turning, make them stop when limit switch is pushed

 9 – push button to start claw and both motors, make claw close and motor stop when limit switch is pushed

4) Line follower and potentiometer (instructions to come)

5) Encoder – add a shaft encoder to one of the wheel/motor assemblies on your testbed. Connect it with the cortex and identify it in the Motor/Sensor setup.

 Programming

 1 – make the motor turn 5 times then turn off

 2 – make the motor turn 10 times, turn off, then the other motor runs for 5 seconds

 Calculate the distance your wheel makes in 1 rotation. To do this, measure the diameter of the wheel (use a dial caliper). Take half of the diameter to get the radius. Put that number into the equation for the circumference of a circle (circumference = π X diameter). This will give you the distance that the wheel turns in 1 rotation.

 3 – make the wheel turn the equivalent of 3 feet and then turn off

Turn on 1 motor, turn on both motors, make both motors turn in same direction, one runs for time period stops then other turns on

 Push button to start both motors, push start and use limit switch to turn off