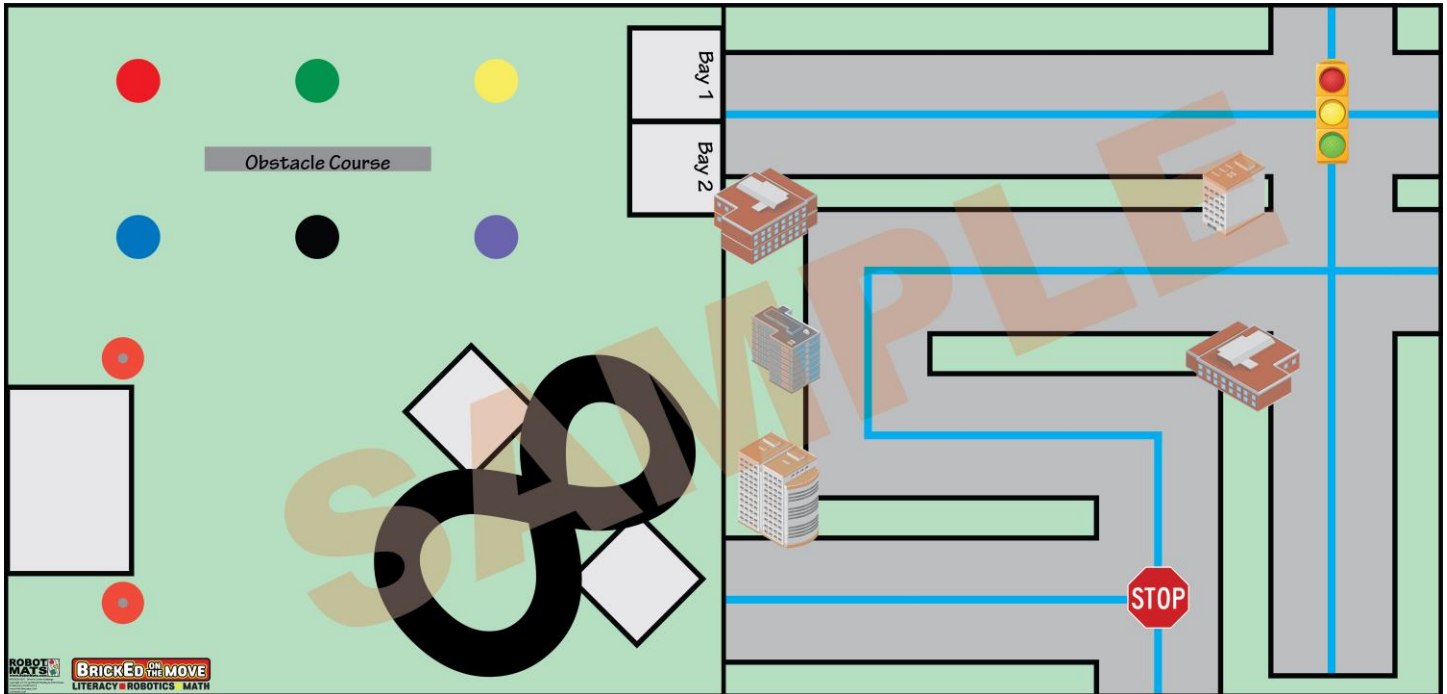


Curriculum Activities for Driving Course Curriculum Sample 1

This sample is provided to give you some guidance in developing your own challenges.

This mat is meant to serve as an intro to EV3 moves and sensors. Each activity allows participants to practice moves, turns, and coding blocks.

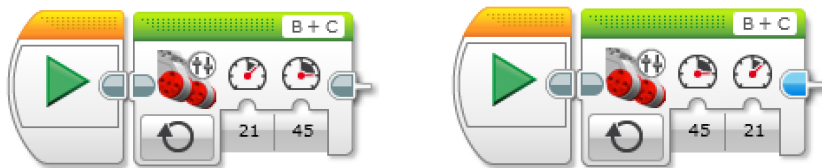


OBSTACLE COURSE: Objective: Practice point and pivot turns, use move tank and move steering blocks. Use sound blocks and color sensor

ACTIVITY 1: Run the course

Completion without missing any cones:

- 15 points, time points 25 first, 20 second, 15 third, 10 fourth, 5 fifth
1. Place robot in Bay 1 facing the course.
 2. Drive robot to the right around yellow to begin.
 3. Weave in and out around green and red.
 4. Turn all the way around red and then continue over to blue.
 5. Weave around black and purple
 6. Circle purple and head into Bay 2



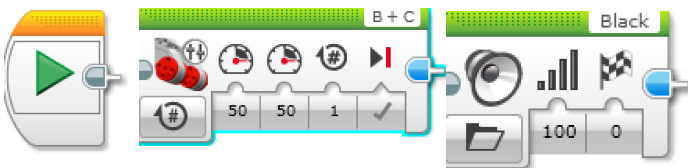
Explore Move tank and which wheel needs to go slowest to complete this task efficiently!

ACTIVITY 2: Speak to me!

All available colors are audible and course is completed 30 points

- Time points: 25 first, 20 second, 15 third, 10 fourth, 5 fifth)
1. Place robot in Bay 1 facing the course.
 2. Drive robot to the yellow circle to begin. Stop and say yellow.
 3. Go to the right around yellow and turn left to face green. Stop and say green
 4. Go around green and face red. Stop and say red.
 5. Turn all the way around red and then continue over to blue. Stop and Say Blue.
 6. Face black and say black. Weave around black
 7. Circle purple and head into Bay 2

Key coding blocks to use



ACTIVITY 3: USING THE COLOR SENSOR

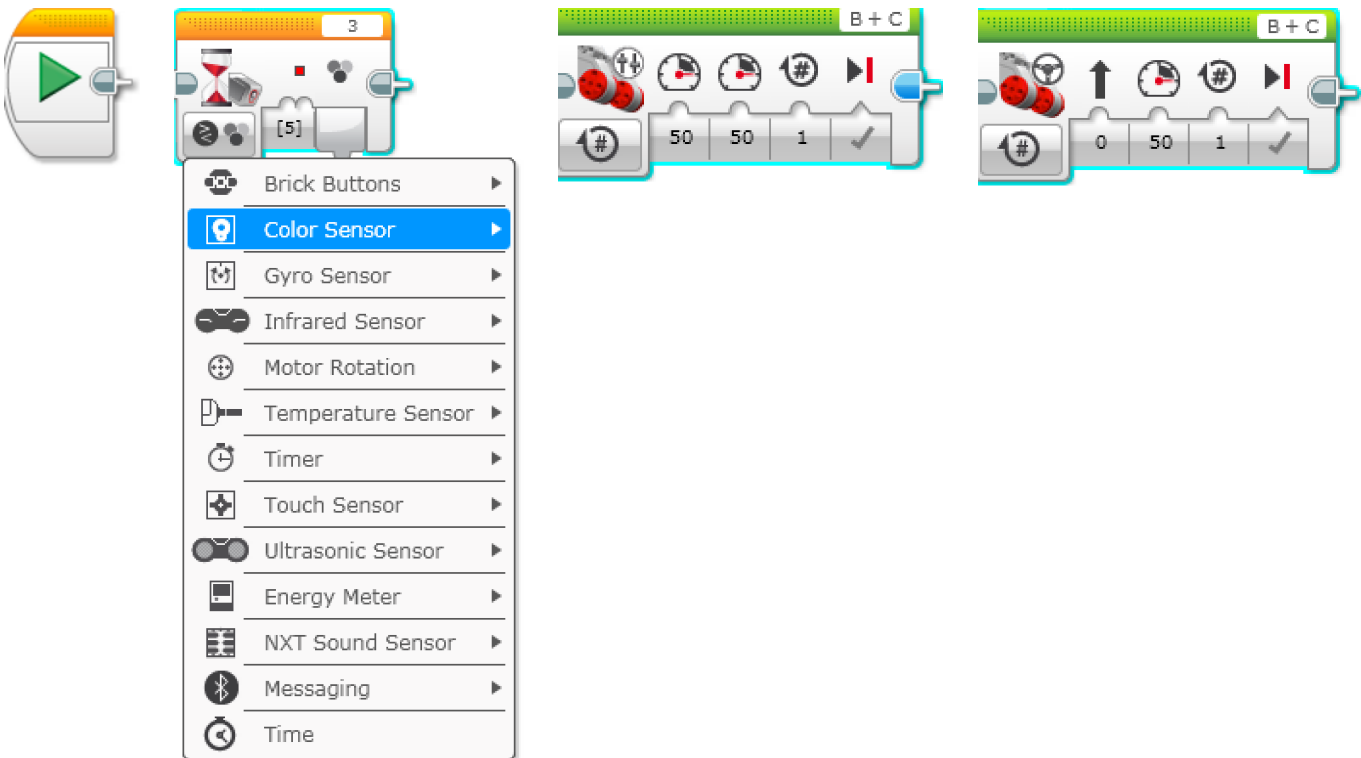
Completion of course with correct program 50 points; Time points:

- Time points: 25 first, 20 second, 15 third, 10 fourth, 5 fifth)

Attach the color sensor to the EV3 robot facing downward on the front.

1. Place the robot in Bay 1
2. Program the robot to stop when it sees the color and say the color before moving to the next one.
3. Say only those colors included in the Mindstorms color palette.

Key coding clocks to use:



PARALLEL PARKING: Objective: Use turn types, move tank, move steering Blocks, and medium motor block Use sound block, use design engineering skills

Completion of turns and parking in three points 50 points; 2-point deduction for each additional turn required to park.

1. Place the robot in Bay 1
2. Drive around the board crossing the yellow, green, red and blue circles.
3. Pull up in front of the parking space with the two red cones.
4. Make a 3-point turn to parallel park between the cones and inside the white box (parking space)
5. Say Fantastic!

Key coding blocks to use:

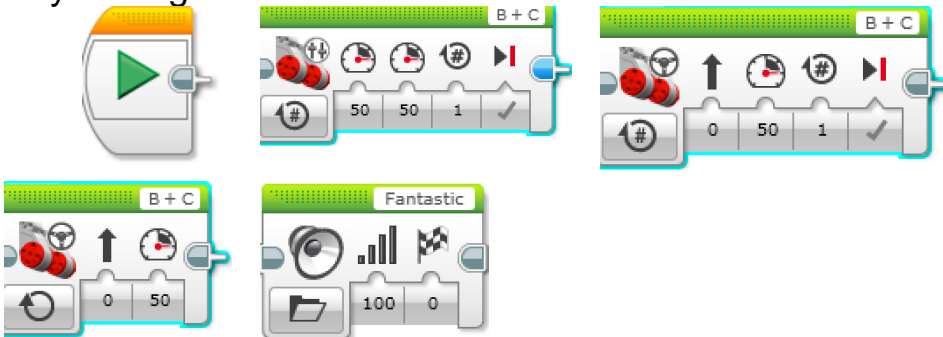
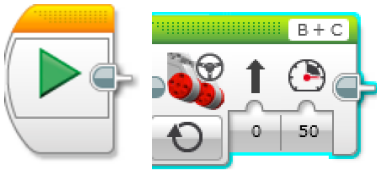


FIGURE 8: Use seconds & rotations

Completion without going off road: 15 points, time points 25 first, 20 second, 15 third, 10 fourth, 5 fifth)

1. Place the robot in one of the white boxes by the figure 8 facing in to the intersection of the design.
2. Time how long it takes for you complete the figure 8 and return to the opposite box from the one you started. (Use seconds, rotations and on)

Key coding blocks to use:

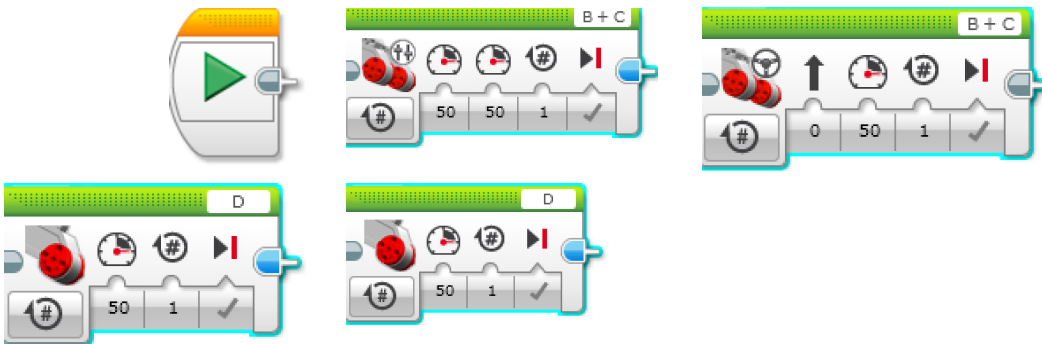


MANUEVER THE STREETS (objective: practice turn types, stops, move tank and move steering blocks)

ACTIVITY 1: Basic driving Completion of task 75 points

1. Place your robot in the middle of Bay 1 & 2.
2. Drive forward and stop at the stop light.
3. Turn right and go one block
4. Turn right and continue to the next intersection
5. Continue to the stop sign. Stop and turn.
6. Back up to the stop sign.
7. Turn back to the left and then go forward through the maze of streets.
8. Return to the starting point.

Key coding blocks to use:



ACTIVITY 2: Move the Load

Number of boxes retrieved within 5 minutes (25 per box) If all boxes all retrieved and additional 25 points, and then a time reward is given:

- Time points: 25 first, 20 second, 15 third, 10 fourth, 5 fifth)

Set up:

- Extra materials needed: small boxes or LEGO built boxes
- Each building should have a box on top of it.

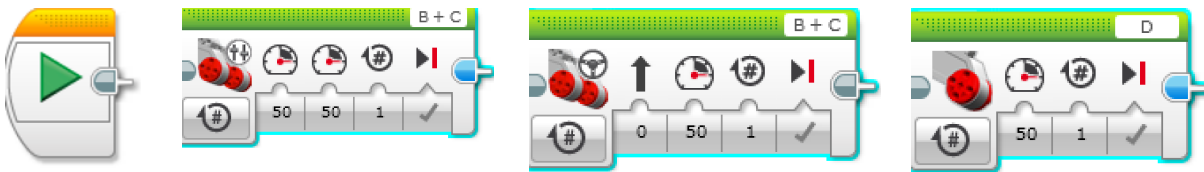
Task: Move all the freight into one of the two bays at the top of the roadway. (5 pieces) in less time than anyone else.

Design Challenge: Add the medium motor and a device to lift/move freight across the track. Look at the EV3 software for some suggestions!

Procedures:

1. Build a device to move the boxes.
2. Place robot on the board in the white box beside the figure 8 closest to the street.
3. Plan a path to collect each box.
4. Move the freight **ONE AT A TIME** to one of the bays at the end of the track. Be sure to stop at all stop signs and lights.
5. Time your task.

Key coding blocks to use:





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Mat Concept and Curriculum Created by



DRIVING COURSE POINT SHEET

TEAM NAME _____

Course	Completion points	Time Points	Extra points (+) Deductions (-)	Total points per activity
Obstacle Course				
Activity 1				
Activity 2				
Activity 3				
Parallel parking				
Activity 1				
Figure 8				
Activity 1				
Maneuver the Streets				
Activity 1				
Activity 2				
Total points				