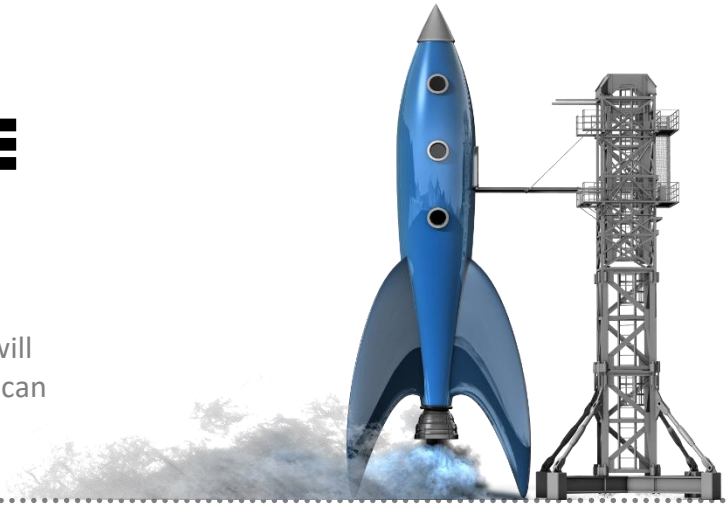
LOST IN SPACE

TEST FLIGHT

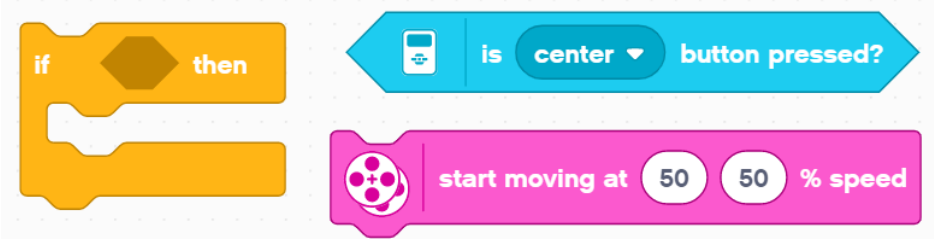
When you complete all these tasks, you will receive your launch clearance. Then you can start on the Lost in Space mission tasks.



TASK 1:
MOVING

Drive forward when the "bottom" button is pressed and backward when the "top" button is pressed.

(Hint: If-then blocks only check conditions one time. How would you get the block to check over and over again?)



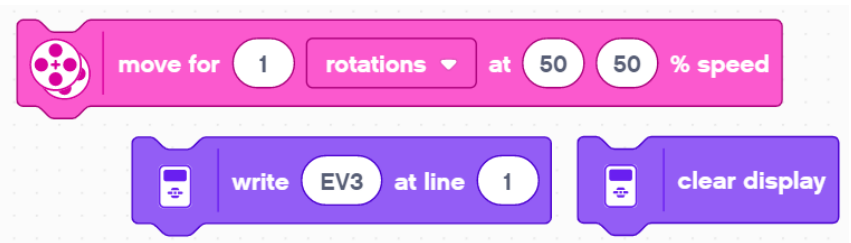
TASK 2:
TURNING

There are three kinds of turns:

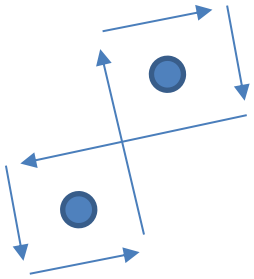
- SPIN TURN (one wheel goes forward and the other backward)
- PIVOT TURN (one wheel goes forward and the other is stopped)
- ARC (gradual) TURN (both wheels go forward but one goes faster than the other)

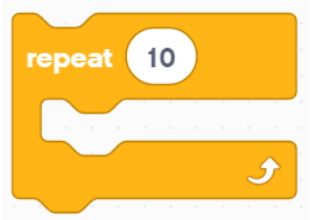
Program your robot to demonstrate all three types of turns. They should go when you press a different brick button and you should write which kind of turn it is on the brick screen.

(Hint: The MOVE WITH TANK brick can be adjusted to make all 3 turns.)



TASK 3:
COMPLEX MOVEMENT





Make a "figure-8" around two satellites. The robot should finish in the same spot it started.

(Hint: When you know how far to drive and turn, use a REPEAT brick to repeat the steps.)

TASK 4:
USING THE COLOR SENSOR

Attach a color sensor to your robot so it can sense when it reaches a line on the floor. Since you don't know how far your bot needs to travel, use a START MOVING block together with a WAIT UNTIL block checking to see when the color sensor reaches a certain value.

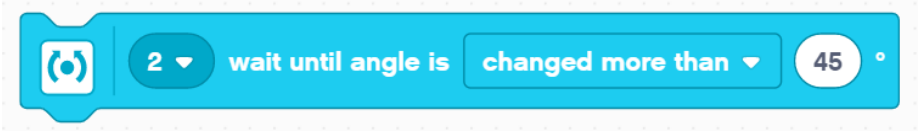
Drive to each color of line (red, yellow, and white). When you detect the line, stop the robot and have it say the color before moving to the next line.

(Hint: When using any sensor, it is helpful to use PORT VIEW on the EV3 brick to check what the robot is seeing.)

TASK 5:
SPINNING AROUND

Attach a gyro sensor to your robot so it can sense how far your robot has turned. Since you don't know how far your bot needs to travel, use a START MOVING block together with a WAIT UNTIL block checking to see when the gyro sensor reaches a certain value.

When you press the left brick button, turn 90 degrees to the left (counter-clockwise). When you press the right brick button, turn 90 degrees to the right (clockwise).



TASK 6:
TALK TO THE HAND

Attach an ultrasonic sensor to your robot so it can sense how far away objects are.

If the robot is closer than 10 inches from your hand, it should move backward. If it is more than 15 inches from your hand, it should move forward. In between those two distances, it should stop.

(Hint: If you need more than two choices with an if-then-else block, you can "nest" them, or put them together.)