

LEGO MINDSTORMS  
EV3 ROBOT  
FOR BEGINNERS

40 CLASSES OVERVIEW  
45 MINUTES EACH

BY: MELISSA MULERT

TEACHER PREP	<p>BUY PLASTIC BINS WITH LIDS TO HOLD ROBOT (LARGE ENOUGH TO PUT TRAY OF PIECES AT THE BOTTOM AND ROBOT ON TOP OF THE TRAY)</p> <p>TAPE PARTS INVENTORY TO THE TOP OF THE BINS (BRICK, MOTORS, SENSORS, ETC)</p> <p>DOWNLOAD EV3 SOFTWARE ONTO DESKTOP, LAPTOP, OR IPAD</p> <p>READ THROUGH USER GUIDE ON HOMEPAGE OF EV3 SOFTWARE</p>
CLASS 1	<p>SAFETY RULES</p> <p>INTRODUCTION TO THE ROBOT PARTS</p> <p>FREE PLAY WITH BEAMS AND CONNECTORS</p>
CLASS 2	<p>BUILD A SIMPLE ROBOT DRIVING BASE (FROM EV3 BOOKLET OR FROM ONLINE)</p> <p>CONNECT YOUR LAPTOP AND ROBOT BY BLUETOOTH (SAVES A LOT OF TIME)</p>
CLASS 3	<p>INTRODUCTION TO THE EV3 SOFTWARE (NAME A PROJECT, NAME A PROGRAM, BLOCKS)</p> <p>MOVE FORWARD &amp; MOVE BACKWARD</p>
CLASS 4	<p>3 WAYS TO TURN (PIVOT, SPIN, &amp; SMOOTH)</p>
CLASS 5	<p>FOLLOW THE MAZE #1 (MOVE FORWARD, RIGHT/LEFT 90 DEGREE TURNS)</p>
CLASS 6	<p>CONTINUE FOLLOW THE MAZE #1</p>
CLASS 7	<p>FOLLOW THE MAZE #2 (FORWARD/BACKWARD USING SMOOTH TURNS)</p>
CLASS 8	<p>CONTINUE FOLLOW THE MAZE #2</p>
CLASS 9	<p>BUILD A PLOW FOR THE FRONT OF THE ROBOT</p>
CLASS 10	<p>USE THE PLOW TO PUSH AN OBJECT FROM A START LINE TO A FINISH LINE</p>
CLASS 11	<p>BUILD AN ARM FOR THE ROBOT</p> <p>PICK UP AN OBJECT</p>
CLASS 12	<p>FOLLOW THE MAZE #3 (MOVE WHILE LIFTING AND SETTING DOWN AN OBJECT)</p>

CLASS 13	CONTINUE FOLLOW THE MAZE #3
CLASS 14	USE A PUSH SENSOR TO SENSE A WALL
CLASS 15	CONTINUE TO USE A PUSH SENSOR
CLASS 16	USE A COLOR SENSOR TO STOP ON A BLACK LINE ON THE GROUND
CLASS 17	CONTINUE TO USE A COLOR SENSOR TO STOP ON A BLACK LINE ON THE GROUND USE A COLOR SENSOR TO FIND VARIOUS COLORS ON THE GROUND
CLASS 18	CONTINUE TO USE A COLOR SENSOR TO FIND VARIOUS COLORS ON THE GROUND
CLASS 19	USE A COLOR SENSOR TO FOLLOW A BLACK LINE
CLASS 20	CONTINUE TO USE A COLOR SENSOR TO FOLLOW A BLACK LINE WRITTEN REFLECTION OF CLASS SO FAR
CLASS 21	USE A GYRO SENSOR TO GO STRAIGHT
CLASS 22	CONTINUE TO USE A GYRO SENSOR TO GO STRAIGHT
CLASS 23	USE A GYRO SENSOR TO MAKE A 90 DEGREE TURN
CLASS 24	CONTINUE TO USE A GYRO SENSOR TO MAKE A 90 DEGREE TURN
CLASS 25	USE AN ULTRASONIC SENSOR TO SENSE A WALL
CLASS 26	CONTINUE TO USE AN ULTRASONIC SENSOR TO SENSE A WALL
CLASS 27	USE A SOFTWARE LOOP TO REPEAT A SERIES OF DIRECTIONS
CLASS 28	CONTINUE TO USE A SOFTWARE LOOP

CLASS 29	EXPLAIN SUMO ROBOT COMPETITION BUILD A SUMO ROBOT
CLASS 30	CONTINUE TO BUILD A SUMO ROBOT
CLASS 31	MAKE A SIMPLE LOOP PROGRAM TO STAY INSIDE THE SUMO RING USE A SWITCH IN YOUR PROGRAM TO SAY IF ROBOT SEES WHITE, DO THIS. IF IT SEES THE BLACK OUT-OF-BOUNDS LINE, DO THIS.
CLASS 32	CONTINUE TO MAKE A SIMPLE LOOP PROGRAM
CLASS 33	SUMO ROBOT COMPETITION DAY 1
CLASS 34	SUMO ROBOT COMPETITION DAY 2
CLASS 35	LEARN ABOUT GEAR RATIOS TEST THE SPEED OF CURRENT SUMO ROBOT WHEELS
CLASS 36	CHANGE WHEELS SO THEY USE GEARS
CLASS 37	TEST OUT THE SPEED OF NEW WHEELS DISCUSS TUG-OF-WAR COMPETITION
CLASS 38	TUG-OF-WAR COMPETITION DAY 1
CLASS 39	TUG -OF-WAR COMPETITION DAY 2
CLASS 40	DISCUSSION OF HOW THE CLASS WENT WRITTEN REFLECTION