

Week One		Week Two		Week Three (and beyond)	
Moving In Straight Lines	Moving In Turns & Curves	Navigating the Mission Mats	Sensor Training	Attachment Training	Performance Task
2-3 days	2-3 days	1-2 days	2-3 days	1-2 days	5-6 build days
<p><b>Begin by having students learn the basics of writing programs to make their robots move in a straight line.</b></p> <ul style="list-style-type: none"> <li>• Configuring Blocks</li> <li>• Straight Move</li> <li>• Robot Rotations</li> <li>• 50-10-30 Challenge</li> </ul>	<p><b>Next, students will learn how to program the robot to make controlled, predictable turns and curves.</b></p> <ul style="list-style-type: none"> <li>• Practicing Turns</li> <li>• Curved Move</li> </ul>	<p><b>Once comfortable with the basics of straight and curved movement, students will practice steering their robots around obstacles.</b></p> <p><b>We used the "FLL World Class" mat, but any LEGO Robotics mission mat could be used. Simply create a basic obstacle course for the robots to navigate.</b></p> <ul style="list-style-type: none"> <li>• World Class 1</li> <li>• World Class 2</li> </ul>	<p><b>Adding sensors to their programs allows for greater control of the robot's movement around the mat. Sensors are critical to success on the final missions.</b></p> <ul style="list-style-type: none"> <li>• Touch Sensor</li> <li>• Color Sensor</li> <li>• Modify WC1 &amp; 2</li> <li>• Ultrasonic Sensor</li> <li>• Final "Blind" Sensor Challenge</li> <li>• Advanced Option: Line Follower</li> </ul>	<p><b>By now, students should know how to control their robot's movement. The next step is to engineer, build and program motorized attachments to manipulate objects on the mission mat.</b></p> <p><b>You can modify the attachment training challenges to prepare students for the specific LEGO mat you will use.</b></p> <ul style="list-style-type: none"> <li>• Cuboid Challenge</li> <li>• Ring Challenge Practice</li> </ul>	<p><b>Allow about one week for students to engineer attachments to complete the final missions and to create and practice their programs.</b></p> <p><b>Final mission run times will dictate how much time should be allowed for final testing. Plan for each team to have 3-4 attempts.</b></p> <ul style="list-style-type: none"> <li>• Begin Practicing for Final Missions</li> <li>• Final Missions on LEGO mat</li> </ul>