



**CHALLENGE**



# Scope and Sequence: 40-Hour Option

Activity	Description	Hours
<b>Robot Skill Learning</b>	<b>LEGO® Education Unit Plan(s)</b> <i>(options at bottom)</i>	<b>10</b>
<b>Guided Experience</b>	<b>Engineering Notebook: Sessions 1-12</b>	<b>18</b>
Session 1	Robot Lesson 1 and Project Spark 1	1.5
Session 2	Robot Lesson 2 and Project Spark 2	1.5
Session 3	Project Spark 1 and Robot Lesson 1	1.5
Session 4	Project Spark 2 and Robot Lesson 2	1.5
Session 5	Robot Lesson 3 and Pseudocode	1.5
Session 6	Robot Lesson 4 and Choose Problem	1.5
Session 7	Project Research and Robot Lesson 5	1.5
Session 8	Robot Lesson 5 and Project Development	1.5
Session 9	Project Continuation and Solve Missions	1.5
Session 10	Presentation Work and Solve Missions	1.5
Session 11	Prepare Robot and Project Presentations	1.5
Session 12	Practice Presentations and Robot Matches	1.5
<b>Continue Robot Skills</b>	<b>LEGO Education Unit Plan(s)</b> <i>(options at bottom)</i>	<b>10</b>
<b>Tournament</b>	<b>Present Solutions and Compete in Matches</b>	<b>2</b>

## LEGO MINDSTORMS® Education EV3 Unit Plans

<u>Robot Trainer</u> (7 Hours)	<u>Engineering Lab</u> (8 Hours)	<u>Coding Activities*</u> (10 Hours)	
<ul style="list-style-type: none"> <li>Moves and Turns</li> <li>Objects and Obstacles</li> <li>Grab and Release</li> <li>Colors and Lines</li> <li>Angles and Patterns</li> <li>The Factory Robot</li> </ul>	<ul style="list-style-type: none"> <li>Trial and Error</li> <li>First Gear</li> <li>Shifting Gears</li> <li>Sliding Down a Slope</li> <li>Free Falling</li> <li>Drive Up a Slope</li> </ul>	<ul style="list-style-type: none"> <li>Autonomous Parking</li> <li>Reversing Safely</li> <li>Automatic Headlights</li> <li>Line Detection</li> </ul>	<ul style="list-style-type: none"> <li>Object Detection</li> <li>Unlocking a Car</li> <li>Cruise Control</li> <li>Roaming Vehicles</li> <li>Autonomous Intersection</li> </ul>