



# Robot Design

Team Number \_\_\_\_\_

Judging Room \_\_\_\_\_

Directions: For each area, clearly mark the box that best describes the team's accomplishments. Please complete the "Comments" block with appropriate words or phrases and provide written comments to acknowledge each team's hard work and to help teams improve. Exemplary performance beyond the Accomplished level may be indicated by circling "+". Optional: Circle the team's strength(s).

	Beginning	Developing	Accomplished		
<b>Mechanical Design</b>	<b>Durability</b> Evidence of structural integrity; ability to withstand rigors of competition			+	<b>Strength Area</b>
	quite fragile; breaks a lot	frequent or significant faults/repairs	rare faults/repairs		
	<b>Mechanical Efficiency</b> Economic use of parts and time; easy to repair and modify			+	
	excessive parts or time to repair/modify	inefficient parts or time to repair/modify	appropriate use of parts and time to repair/modify		
	<b>Mechanization</b> Ability of robot mechanisms to move or act with appropriate speed, strength and accuracy for intended tasks (propulsion and execution)			+	
imbalance of speed, strength and accuracy on most tasks	imbalance of speed, strength and accuracy on some tasks	appropriate balance of speed, strength and accuracy on most tasks			
<b>Programming</b>	<b>Programming Quality</b> Programs are appropriate for the intended purpose and would achieve consistent results, assuming no mechanical faults			+	<b>Strength Area</b>
	would not achieve purpose AND would be inconsistent	would not achieve purpose OR would be inconsistent	should achieve purpose repeatedly		
	<b>Programming Efficiency</b> Programs are modular, streamlined, and understandable			+	
	excessive code and difficult to understand	inefficient code and challenge to understand	appropriate code and easy to understand		
	<b>Automation &amp; Navigation</b> Ability of the robot to move or act as intended using mechanical and/or sensor feedback (with minimal reliance on driver intervention and/or program timing)			+	
frequent driver intervention to aim AND retrieve robot	frequent driver intervention to aim OR retrieve robot	robot moves/acts as intended repeatedly w/ occasional driver intervention			
<b>Strategy &amp; Innovation</b>	<b>Design Process</b> Ability to develop and explain improvement cycles where alternatives are considered and narrowed, selections tested, designs improved (applies to programming AND mechanical design)			+	<b>Strength Area</b>
	organization AND explanation need improvement	organization OR explanation need improvement	systematic and well-explained		
	<b>Mission Strategy</b> Ability to clearly define and describe the team's game strategy			+	
	no clear goals AND no clear strategy	no clear goals OR no clear strategy	clear strategy to accomplish the team's well defined goals		
	<b>Innovation</b> Creation of new, unique, or unexpected feature(s) (e.g. designs, programs, strategies or applications) that are beneficial in performing the specified tasks			+	
original feature(s) with no added value or potential	original feature(s) with some added value or potential	original feature(s) with the potential to add significant value			

## Comments

*Great job...*

*Think about...*

Judges: Use the back for additional comments if needed!

This version of the FIRST LEGO League rubric is ONLY approved for use in select pilot regions during the 2018-2019 INTO ORBIT<sup>SM</sup> Season.

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