



# Robot Design

Team Number 22337

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

Directions: For each skill area, clearly mark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, then put an 'X' in the first box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please circle the team's areas of strength.

**Beginning**

**Developing**

**Accomplished**

**Exemplary**

Comments: Mechanical Design	Durability Evidence of structural integrity; ability to withstand rigors of competition			
	N D	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			
	N D	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)		appropriate use of parts and time to repair/modify		
N D	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	appropriate balance of speed, strength and accuracy on every task

\* Excellent use of attachments +  
 \* Could have used Sensors for some/few missions.  
 \* Overall Excellent work !!

Comments: Programming	Programming Quality Programs are appropriate for the intended purpose and would achieve consistent results, assuming no mechanical faults			
	N D	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			
	N D	excessive code and difficult to understand	inefficient code and challenge to understand	appropriate code and easy to understand
<b>Automation/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)		appropriate code and easy to understand		
N D	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	robot moves/acts as intended every time with no driver intervention

Comments: Strategy & Innovation	Design Process Ability to develop and explain improvement cycles where alternatives are considered and narrowed, selections tested, designs improved (applies to programming as well as mechanical design)			
	N D	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			
	N D	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		clear strategy to accomplish the team's well defined goals		
N D	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	original feature(s) that add significant value

Strengths:

**Mechanical Design**

**Programming**

**Strategy & Innovation**



**FIRST**  
**LEGO**  
**LEAGUE**

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	Mechanization Ability of robot mechanisms to move or act with appropriate speed, strength and accuracy for intended tasks (propulsion and execution)			
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Comments: Programming	Programming Quality Programs are appropriate for the intended purpose and would achieve consistent results, assuming no mechanical faults			
	N would not achieve purpose	would not achieve purpose	should achieve purpose	should achieve purpose
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	N organization AND explanation	organization OR explanation	systematic and well-explained	systematic, well-explained and well-documented
	D need improvement	need improvement		
	Mission Strategy Ability to clearly define and describe the team's game strategy			
	N no clear goals AND no clear strategy	no clear goals OR no clear strategy	clear strategy to accomplish the team's well defined goals	clear strategy to accomplish most/all game missions
Innovation Creation of new, unique, or unexpected feature(s) (e.g. designs, programs, strategies or applications) that are beneficial in performing the specified tasks				
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D				

Nice to see replaceable parts and pinless attachments. May be focus on how sensors could be added.

Strengths:

Mechanical Design

Programming

Strategy & Innovation



**FIRST**  
**LEGO**  
**LEAGUE**

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

AJ

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D Team mentioned sensors. Perhaps use of more sensors could help them achieve more missions. Use of some additional motors or sensors could be considered as well.				

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