

Scoring Form – Poster Presentation and Display

TEAM NAME: _____

TEAM SPOKESPERSON: _____

POSTER PRESENTATION & DISPLAY (25% of composite score)

Poster Presentation – Team should use poster and lab notebook as a guide.

(A) Mars Rover Design (process and final design justification)	Possible points	Points Awarded
1. Steps in the design process (what was done and the order it was done)	0 – 2 pt.	
2. Major turning points in design process (good and bad)	0 – 2 pt.	
3. Reason for choosing final Rover design	0 – 1 pt.	
4. Strengths of Rover	0 – 1 pt.	
5. Weaknesses of Rover	0 – 1 pt.	
(B) Additional Teamwork and Rover Design Information		
1. Explanation of Pie Charts (both the group and individual pie charts)	0 – 2 pt.	
2. Ideas for improving their Rover if time, budget, allowable items, etc. constraints were not present	0 – 1 pt.	
3. Material presented in an organized, thorough and convincing manner through quality of delivery, visual aids and team participation <i>(please add comments below)</i> _____ _____	0 – 5 pt.	
Total points for Poster Presentation (add sections A and B)	Total	/15

*Half points are allowable in this event. Please write your score for each item in the right-hand column, total the verbal score, and then total the overall event score when complete.

Please feel free to write additional comments below as necessary

Scoring Form - Poster Presentation and Display Continued....

TEAM NAME: _____

JUDGE'S INITIALS: _____

AFFIX JUDGE LABEL HERE

POSTER PRESENTATION & DISPLAY (25% of composite score)

Poster Display – Team should summarize and illustrate the contents of the lab notebook.

(A) Display provides evidence of the entire design process	Possible points	Points Awarded
1. Identifies the problem(s) – purpose of designing the Mars Rover	0 – 1 pt.	
2. States the goal(s) of the engineering team – (what Rover should be able to do)	0 – 1 pt.	
3. Presents brainstorming of ideas	0 – 2 pt.	
4. Shows selection and construction of the design	0 – 1 pt.	
5. Shows testing and revising of Rover design	0 – 1 pt.	
(B) Display reflects cooperation and teamwork		
1. Display is organized, arranged in a logical order, and contains descriptions such as picture captions, narratives, etc. to illustrate the overall project design process	0 – 2 pt.	
2. Pie chart for the whole team that shows the work divided between team members and indicates what individual members did	0 – 2 pt.	
Total points for Poster Display (add sections A and B)	Total	/10

*Half points are allowable in this event. Please write your score for each item in the right-hand column, and total your score when complete.

Please feel free to write additional comments below as necessary

Total points Poster Presentation & Display (total verbal and display score)	Total	/25
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Scoring Form – Lab Notebook

TEAM NAME: _____

JUDGE'S INITIALS: _____

AFFIX JUDGE LABEL HERE

LAB NOTEBOOK & BUDGET (20% of composite score)

	Possible points	Points Awarded
1. Lab notebook day-to-day entries reflect the engineering design process (<i>identifies problem(s); states goals; demonstrates brainstorming; details Rover design selection / construction; details Rover testing / revising</i>)	0 – 6 pt.	
2. Lab notebook includes a timeline and three itemized budgets , in this order, in the front of the notebook	0 – 4 pt.	
3. Pie charts of what individuals did themselves (% display, % design, % leadership, etc.) are present. There should be a pie chart for <u>EACH</u> member of the team.	0 – 4 pt.	
4. Lab notebook day-to-day entries are handwritten and maintained throughout the team's work on its Rover, notebook is organized, chronological and legible, and entries are labeled appropriately (<i>date – team members – activity(s) / design process step(s)</i>)	0 – 6 pt.	
Total Points for the Lab Notebook / Budget	Total	/20

*Half points are allowable in this event. Please write your score for each item in the right-hand column, then total the overall event score when complete.

- ☐ Team did not spend more than \$30 on additional LEGO® parts.
If more than \$30 was spent, team is disqualified from the competition.
- ☐ Team did not spend more than \$30 for construction of display.
If more than \$30 was spent, team receives 0 points for the Poster Presentation & Display.

Please feel free to write additional comments below as necessary

Scoring Form – Martian Rock Collection

TEAM NAME: _____

JUDGE'S INITIALS: _____

AFFIX JUDGE LABEL HERE

MARTIAN ROCK COLLECTION TEST (15% of composite score)

ROVER DRIVER: _____

ROVER ASSISTANT: _____

EMERGENCY MECHANIC: _____

Time Limit - 5 minute maximum					
Rock Collection Attempted (collector device <u>moved</u> AND <u>touched</u> one rock)		YES +5 pts.		NO +0 pts.	
Rocks Collected (team's goal is to collect <u>one</u> rock from each color group)					
Circle color(s) of rock(s) collected present on Rover at end of event	Gold +2 pts.	Silver +2 pts.	Amethyst +2 pts.	Blue +2 pts.	Red +2 pts.
Penalty Points (-1 for every time team must advance one vehicle length due to trap or tip over)			- points		
Total Points for Martian Rock Collection Test (add all points and subtract penalty points)			/15 points		

Marvin the Martian collected (attempt can only be made <u>after</u> one rock from each color group is collected)	YES NO
Additional rocks collected (attempt(s) can only be made <u>after</u> one rock from each color group is collected)	____ rocks

Catastrophic Breakdown

Do not record minor catastrophic breakdowns – teams are allowed an unlimited amount of minor breakdowns. **A team is allowed ONE major catastrophic breakdown.**

- ☐ Major Catastrophic Breakdown declared
- ☐ Re-attempt of course completed

Scoring Form – “Blind Driving” Test

TEAM NAME: _____

JUDGE’S INITIALS: _____

AFFIX JUDGE LABEL HERE

“BLIND DRIVING” TEAMWORK TEST (10% of composite score)

ROVER DRIVER: _____

ROVER ASSISTANT: _____

EMERGENCY MECHANIC: _____

Obstacles (circle each obstacle after it is successfully completed)

Obstacle #1 +2 pts.	Obstacle #2 +2 pts.	Obstacle #3 +2 pts.	Obstacle #4 +2 pts.	Obstacle #5 +2 pts.
Penalty for trap or tip over - advance Rover to next obstacle <u>without</u> awarding points for obstacle that was being attempted				
Course Time (5 minutes max.)			____ min ____ sec	
Total Points for Blind Driving (add all circled points above)			/ 10 points	

Catastrophic Breakdown

Do not record minor catastrophic breakdowns – teams are allowed an unlimited amount of minor breakdowns. **A team is allowed ONE major catastrophic breakdown.**

☐ Major Catastrophic Breakdown declared

☐ Re-attempt of course completed

Scoring Form – Hill Climb

TEAM NAME: _____

JUDGE'S INITIALS: _____

AFFIX JUDGE LABEL HERE

HILL CLIMB (10% of composite score)

ROVER DRIVER: _____

ROVER ASSISTANT: _____

EMERGENCY MECHANIC: _____

Climbed minimum 20° incline	YES +2 pts.		NO +0 pts.	
Circle each degree of incline as it is successfully completed (up to 60°)				
30° +2 pts.	40° +2 pts.	50° +2 pts.	60° +2 pts.	
If team is unable to complete a degree of incline above- complete appropriate intermediate 5° incline for 1 pt and conclude test				
Circle maximum incline completed	25° +1 pt.	35° +1 pt.	45° +1 pt.	55° +1 pt.
Total points for Hill Climb (add all circled points above)			/10 points	

Catastrophic Breakdown

Do not record minor catastrophic breakdowns – teams are allowed an unlimited amount of minor breakdowns. **A team is allowed ONE major catastrophic breakdown.**

☐ Major Catastrophic Breakdown declared

☐ Re-attempt of course completed
(must start at degree where breakdown was declared, NOT at beginning)

Scoring Form – Rover Speed Test

TEAM NAME: _____

JUDGE'S INITIALS: _____

AFFIX JUDGE LABEL HERE

ROVER SPEED TEST (10% of composite score)

ROVER DRIVER: _____

ROVER ASSISTANT: _____

EMERGENCY MECHANIC: _____

Course completed within 5 minutes			YES +5 pts.		NO +0 pts. (go to *)	
Course Time (5 minutes max.) ____min ____sec						
Circle appropriate course time range	0 - 0:59 +5 pts.	1:00 - 1:59 +4 pts.	2:00 - 2:59 +3 pts.	3:00 - 3:59 +2 pts.	4:00 - 4:59 +1 pts.	

* **Course NOT completed in 5 minutes** - points determined by distance from finish line

Distance from Finish Line (<i>in feet</i>)	<i>within 5 ft.</i> + 1 pt.	within 4 ft. + 2 pts.	within 3 ft. +3 pts.	within 2 ft. +4 pts.	within 1 ft. +5 pts.
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Total Point Penalties (-1 for every time team advanced one vehicle length due to trap or tip over)	Tally penalties in box -	- points
Total Points for Rover Speed Test (add all points and subtract penalty points)	/10 points	

Catastrophic Breakdown

Do not record minor catastrophic breakdowns – teams are allowed an unlimited amount of minor breakdowns. **A team is allowed ONE major catastrophic breakdown.**

- ☐ Major Catastrophic Breakdown declared
- ☐ Re-attempt of course completed

Scoring Form – Rover Weight

TEAM NAME: _____

JUDGE'S INITIALS: _____

AFFIX JUDGE LABEL HERE

ROVER WEIGHT (10% of composite score)

Rover Weight _____ grams (Circle appropriate weight category below)

400 grams or below
+10 pts.

401 – 500 grams
+8 pts.

501 – 600 grams
+6 pts.

601 – 700 grams
+4 pts.

701 grams or above
+2 pts.

Total Points for Rover Weight

/10 points

Rover Inspection (Please check box when confirmed)

- ☐ Rock Collection Device
- ☐ Rock Storage Unit
- ☐ No more than 3 battery boxes – AND – 3 motors
(3 battery boxes – OR – 3 motors are allowed)
- ☐ Motors are only 9-volt simple motors
(NO geared-down motors and/or non-LEGO® power sources allowed)
- ☐ Non - LEGO® components used in Rover construction are listed (**see back of scoring form for list**), sorted into the correct category, and are allowable

Other Comments Regarding Rover Construction:

Scoring Form – Rover Weight Continued....

Engineering Team: Please list all of the Non – LEGO® Allowable Elements included in your Rover design in the table below, sorted into the correct category. Please complete this list **PRIOR** to reaching the weight table.

Judge: Please review the following table after it has been filled in by the team to verify completeness, sorting accuracy, and whether items listed are allowable.

Cardboard	

Fabric	

Wood	

Foam	

Springs	

Rubber	

Paper	

Tethers	

Metal	
<i>Containers:</i>	
<i>Wire:</i>	
<i>Sheets:</i>	

Plastic	
<i>Bags:</i>	
<i>Containers:</i>	
<i>Cylinders:</i>	
<i>Utensils:</i>	
<i>Sheets:</i>	

Fasteners & Adhesives	