New Mexico Science Olympiad Mission Possible February 26, 2011

High School, **Div C** School Name: _____ Table# ____ Pic #_____

Setup start time: _____ Setup end time: _____ ☐ Pass Safety Inspection

Task Completion Time (m:ss) ___ : ___ = _____ seconds ☐ ≤180 sec? (t ends when last action stops)

Judge Name/s: _____ The device was run at: _____ MST

ACHIEVEMENTS (additions to score)		Qty	Multiplier	Points
6 a-d	**Task Sequence List (TSL) Rules**: 25 pts per box checked (6 a-d) ☐ TSL submitted on-time ☐ Correct TSL Format ☐ 100% Accurate TSL ☐ ALL tasks labeled properly in device		25	
6e	**30 Minute set-up:** Team is absolutely ready to go in ≤ 30 min. (6e)	0 or 1	50	
6f 3a	**Starting Task**: ☐ US Quarter ☐ starts above device, (6f, 3a) ☐ Q touches and snaps mousetrap which begins chain of events	0 or 1	100	
3. b c d e	**20 Point Tasks:** First-time use of: ☐ Wedge (force pushes wedge between two objects to separate) ☐ Pulley system: IMA = 3, Lift mass ≥ 15 cm, Mass ⇨ action ☐ Screw: Tip stays in contact with object, object moves ≥ 2 cm ☐ Class 3 Lever		20	
3. f g h	**30 Point Tasks:** First-time use of: ☐ Balloon: Gas inflated, inflated balloon ⇨ action ☐ Closed Hydraulics system ⇨ action ☐ Air volume motion (not pheumatic) moving air ⇨ action		30	
3. i j	**40 Point Tasks:** First-time use of: ☐ Closed Chemical Reaction creates gas, gas ⇨ action ☐ Circular ⇨ Linear motion (no gears or screws) Linear ⇨ action		40	
3. k l	**50 Point Tasks:** First-time use of: ☐ Temperature Reduction of object, ΔT ⇨ action ☐ Stack 5 wood blocks: size ≥ 5x5x2 cm, blocks start separated, stay within device boundaries, lower blocks support uppers		50	
6l 3n	**Final Task Completion (FTC)**: All conditions must be met: ☐ Completion occurs @ ≤ 180 sec) ☐ Pre-filled He Balloon ☐ Balloon remains tethered ☐ Bouyancy alone raises balloon ☐ Sign starts in contact with lowest point in device ☐ Sign hangs from bottom of balloon ☐ Sign bears school name ☐ Sign ends completely above device ☐ Sign is detachable	0 or 1	250	
6k	**Sign Mass** (in qty of tenths of a gram: 1.0g = 10) only if FTC awarded		1	
3m 6i	**Sand Mass: time** ≥ 15 sec. No electricity to follow, flow from one vessel to another, accumulated sand mass triggers next action	0 or 1	100	
6j	**Sand Time:** Qty sec of sand flow, incl. 1st 15, not incl t after final task		2	
6g	**Time Optimization**: Enter seconds (up to _____ (ideal 60 ≤ t ≤ 90)		2	
	Additions Sub-Total			

PENALTIES (subtractions from score)		Qty	Multiplier	Points
7a	Over 60 Sec: Enter qty [(completion t) - ideal] If < 0 enter 0.(120 max)		-1	
7b	Restarts/Touches/Adjustments		-15	
7c	Object (solid or liquid) leaving the device boundary	0 or 1	-50	
7d	Motor running prior to start of device (times # occurrences)		100	
7e	Device does not start with Starting Task	0 or 1	100	
	Subtractions Sub-Total			

TOTAL SCORE			
	(Additions) – (Subtractions)		
7f	☐ Fits Max Size (80 x 50 x 50 cm) ☐ Wearing goggles properly ☐ ≤ 8 tasks ☐ Allowed elec. components only ☐ Sequential tasks only ☐ No parallel paths. All met = Tier1, any unchecked = Tier2	Tier:	

8. Tie Brk: ① Least penalty pts ② Greatest sign mass (to .1g) ③ Longest sand time up to ideal ④Closest to ideal t