

New Mexico Science Olympiad Mission Possible February 24, 2007

Middle School, **Div B** School Name: _____ Table# _____ Pic # _____

Setup start time: _____ Setup end time: _____ Pass Safety Inspection
 Task Completion Time (m:ss) ____ : ____ = _____ seconds ≤180 sec? (t ends when can stops)
 Judge Name/s: _____ The device was run at: _____ MST

ACHIEVEMENTS (additions to score)	Qty	Multiplier	Points
30 Minute set-up awarded if team is absolutely ready to go in 30 min.	0 or 1	30	
Rule Satisfaction: 20 pts per box checked <input type="checkbox"/> Fits Max Size (80 x 50 x 50 cm) <input type="checkbox"/> Correct SML Format <input type="checkbox"/> Wearing goggles properly <input type="checkbox"/> SML submitted on-time <input type="checkbox"/> Start with valid paddlewheel/axle <input type="checkbox"/> 100% Accurate SML <input type="checkbox"/> End with proper cans & pulley mech adv <input type="checkbox"/> Sequential SMs only <input type="checkbox"/> No batteries or electricity <input type="checkbox"/> ≤ 16 numbered SMs		20	
Successful Task Completion: (within time limit 180 sec) <input type="checkbox"/> Lift ≥ 5cm <input type="checkbox"/> Lighter lifts heavier <input type="checkbox"/> Cans removeable + labeled + unmodified	0 or 1	100	
Time Optimization: Enter qty of seconds (60 Max) If time > 60 enter 60		2	
Successful Machine Operation - must successfully activate next machine of different type (max 16 occurrences for 160 pts)		10	
FIRST time successful use of: (count checked boxes, enter qty) <input type="checkbox"/> Class 1 Lever (L-F-E) <input type="checkbox"/> Inclined Plane (uphill, ≥ 10 cm, no decent) <input type="checkbox"/> Class 2 Lever (F-L-E) <input type="checkbox"/> Wedge (used to lift or split, Δ F ≠ 0°) <input type="checkbox"/> Class 3 Lever (F-E-L) <input type="checkbox"/> Pulley (Δ F ≥ 90°, no loop) <input type="checkbox"/> Wheel & Axle (rotation ≥360°, must tx F between wheel & axle) <input type="checkbox"/> Screw (rotation ≥ 360°, linear load displacement ≥ 1cm)		20	
SECOND time successful use of: (count checked boxes, enter qty) <input type="checkbox"/> Class 1 Lever (L-F-E) <input type="checkbox"/> Inclined Plane (uphill, ≥ 10 cm, no decent) <input type="checkbox"/> Class 2 Lever (F-L-E) <input type="checkbox"/> Wedge (used to lift or split, Δ F ≠ 0°) <input type="checkbox"/> Class 3 Lever (F-E-L) <input type="checkbox"/> Pulley (Δ F ≥ 90°, no loop) <input type="checkbox"/> Wheel & Axle (rotation ≥360°, must tx F between wheel & axle) <input type="checkbox"/> Screw (rotation ≥ 360°, linear load displacement ≥ 1cm)		10	
BONUS Sand container: Time filling of vessel to next SM trigger <input type="checkbox"/> Lever (any class) Enter # seconds of operation time (30 max)		1	
<input type="checkbox"/> Completion task load/effort ratio: Enter value of mechanical advantage (9 max). Round to nearest integer. Calculations and unit conversions must be documented on SML		1	
Additions Sub-Total			

PENALTIES (subtractions from score)	Qty	Multiplier	Points
Restarts/Touches/Adjustments		-19	
Object (solid or liquid) leaving the device boundary	0 or 1	-50	
Over 60 Sec: Enter qty [(completion time) - 60] If < 0 enter 0. (120 max)		-1	
Subtractions Sub-Total			

TOTAL SCORE	
(Additions) – (Subtractions)	

Tie Breakers: ① Least penalty pts ② Closest to 60 sec (1 under beats 1 over) ③ Greatest variety of design