

	Tier	Score
1 <sup>st</sup> Tie Breaker = fewest penalty points	<b>Tier Determination</b> 1. A device with no violations 2. Construction violation(s) 3. Parallel or dead-end paths (not Bonus) 4. Unsafe device – no run – participation points only 5. Bad behavior, device remotely timed or controlled – no points, DQ	_____
2 <sup>nd</sup> Tie Breaker = best objects in 3 final containers		_____
3 <sup>rd</sup> Tie Breaker = smallest overall device dimension		_____
		_____
		_____

**Mission Possible C - San Diego Regional Science Olympiad – 22 February 2014**

**School Name:** \_\_\_\_\_ **Team Name:** \_\_\_\_\_

**Student(s):** 1. \_\_\_\_\_ 2. \_\_\_\_\_

Student(s) **must wear** approved safety eyewear #2 during set-up and running of the device. Give them a chance to get it.

**CONSTRUCTION PARAMETERS:** If “no” for any, then = Tier 2

**Place a check next to each parameter that is met in this device. Circle ones that are NOT met.**

Device was free of hazardous materials? (3.k.) (If not, specify. _____ = Tier #3)	_____
Power to any electric circuit ≤10 volts <b>and</b> all batteries are factory sealed, voltage labeled and lead-acid free.	_____
All parts of device fit and stay in a 60.0 x 60.0 x 60.0 cm. imaginary cube throughout the entire operation.	_____
Each task contributes to the final task. (no parallel or dead-end paths except turn-off switches & Bonus)	_____
Electrical components OK – no computers or integrated circuits	_____
Device is NOT remotely timed or controlled – operates autonomously	_____
Top and at least one vertical wall are see-through	_____
Scoreable actions are visible (except radio/infrared electromagnetic spectrum)	_____
Non-scoreable (no pts) actions may be included, but must contribute to completion of final task & be listed in ETL	_____
Single action contributes to only one scoreable transfer	_____
Any time-consuming/continuous action ≠ electrical	_____
Device begins with Start Task (dumping in the objects) and ends with Final Task (light goes on, action ends)	_____
No computers or integrated circuits	_____
Energy sources (except motors) may be activated prior to start.	_____

**Time of operation:** \_\_\_\_\_ **seconds (max = 180 seconds)**

**Timing Starts:** last object dropped into device

**Timing Ends:** final light visible **OR = 180 seconds – No points awarded after light on or 180 seconds**  
**If there was any Stalling while the device was running, = DQ**

**SCORING: POSITIVE POINTS**

Start task begins the chain of events	100 points	_____
Final task completed, light must be visible to judges	250 points	_____
Energy Transfer List submitted with device (5.f.)	25 points	_____
Energy Transfer List uses specified format	25 points	_____
Energy Transfer List + device parts are correspondingly labeled	25 points	_____
Energy Transfer List is 100% accurate of intended scoreable + non-scoreable transfers	25 points	_____
Team got the device ready to run within <b>30 minutes</b>	50 points	_____
The number of whole seconds, <u>up to 60 sec</u> , that the device operated = _____ seconds X 2 points = _____	Max = 60	_____
# objects successfully sorted in final containers – golf tees, paperclips, marbles _____ objects X 5 points = _____	Max = 30	_____
4 k – If an action inadvertently starts transfer out of sequence as stated in ETL, all transfers skipped in listed sequence = 0 points.		
4 l – If competitor assists transfer, no points for that transfer, even if it is Final Task		

Write Energy Form to which it transfers in box

Points for Energy Transfers	1 <sup>st</sup> time = 30 pts	2 <sup>nd</sup> time = 20 pts	3 <sup>rd</sup> time = 10 pts	Σ points
Electrical				
Electromagnetic spectrum (radio, infrared, visible light)				
Chemical				
Mechanical				
Thermal				

<b>Device Measurement:</b> 0.1 points / 0.1 cm < 60 cm (600 mm) in all three dimensions (1 point / mm)			
Height = _____ mm	600 mm – device height in mm	= _____	pts
Width = _____ mm	600 mm – device width in mm	= _____	pts
Depth = _____ mm	600 mm – device depth in mm	= _____	pts

**Total Points Awarded:** = \_\_\_\_\_

**PENALTIES:**

# of full seconds device operated beyond 60 seconds, up to 180 seconds	_____ X 15 points = _____
# of times was device was touched, adjusted or restarted	_____ X 5 points = _____
# original objects (golf tees, paperclips, marbles) sorted into wrong containers	Deduct 50 pts.(only once) _____
Any substance(s) left the device during operation? (smoke, odors, light, radio waves coming out = OK)	_____

**Total Penalty Points:** = \_\_\_\_\_

**Points Awarded** \_\_\_\_\_ **- Penalty Points** \_\_\_\_\_ **= Score** \_\_\_\_\_