

Sample/Template Tournament Mission Possible Action Sequence List

School: Springfield High School

Team Number: C1

Participants: Jane Doe, Jimmy Smith

Instructions: Replace sections above with tournament, school name, team number and participant names.

- Replace tasks in the table below with actions and transfers in your team's device. **Add, delete, split, or merge rows as needed.**
- Number, label and assign point values for each **scoreable action and transfer**.
- **Scoreable actions and transfers must be numbered correspondingly in your device. ETS do not have to be labeled in your device.**
- **Gray out non-scoring ETS boxes.**
- **Delete this instruction section.**

Bonus ETS	No.	Starting Energy Form	Action/Transfer Description	Ending Energy Form	Pts.
1	1	START	Golf ball #1 dropped from outside the box hits a switch and falls into a jug.	M	100
	2	M	The switch completes a circuit.	E	
	3	E	The circuit powers a motor, pushing golf ball #2 off a ledge and into a jug.	M	50
2	4		Golf ball #2 moves a piece of paper while falling into the jug.	M	
	5	M	The piece of paper was blocking a light source but now the light can shine onto a photodetector with the paper gone.	VL	
	6	VL	The photodetector completes a circuit to power a solenoid (and turns off previous motor.)	E	
	7	E	The solenoid pulls a metal lever down.	M	
	8	M	The metal lever completes a circuit.	E	
	9	E	The circuit turns on a motor, lifting golf ball #3 from below the lowest scoring jug into a scoring jug.	M	50 + 2
			As the golf ball falls into the jug, it nudges a marble.	M	
		M	The marble trips a mousetrap, which snaps and completes a circuit.	E	
		E	The circuit turns on a motor, lifting golf ball #4 from below the lowest scoring jug into a scoring jug.	M	2
3	10		As the golf ball falls into the jug, it hits a switch.	M	
	11	M	The switch turns on a LED.	E	
	12	E	The LED shines on a photodetector.	VL	
	13	VL	The photodetector activates a circuit.	E	
	14	E	Circuit turns on a motor, lifting golf ball #5 from below the lowest scoring jug into a scoring jug.	M	50 + 2
	15		Golf ball #5 trips a switch while falling into the jug, turning on a buzzer.	END	250

- Rules 4.b., 5.k., 5.l. and 5.m. all have specific requirements regarding energy transfers and points.

- Non-scoreable **actions and transfers** are not numbered.

- More than 6 golf balls falling into the jug can receive points, but the number of unique ETS is limited to a maximum of 6.

- **4.b. The process of a golf ball moving into a scoring jug cannot be counted as an Energy Form, hence the blank spaces.**

- Even though ETS#2 (M to VL to E to M to E to M) contains ETS#1 (M to E to M), each of them are still counted as unique ETS. However, another ETS of M to E to M (such as the one between ETS#2 and ETS#3, even if it were to use other items, would not count as a unique ETS **and would therefore not be scored.**

- While the initial and final golf balls count as the start and end of the first ETS, both golf balls did not start below the scoring jug, therefore they do not receive the 4 points (2x 2 points) in 5.j.