

NATIONALS SCIENCE OLYMPIAD MISSION POSSIBLE ACTION SEQUENCE LIST

School: Liberal Arts and Science Academy

Team Number: C-19

Participants: Neil Patil, Blake Karwoski

Bonus ETS	No.	Starting Energy Form	Action/Transfer Description	Ending Energy Form	Pts.
1	1	START	Golf ball #1 is dropped from outside the bounding box of the device, completing the start task. It falls into a tube and presses a microswitch.	M	100
	2	M	The microswitch arm is pressed. The contacts on the arm complete a circuit.	E	
	3	E	The circuit powers a motor. The motor moves a lever, moving golf ball #2 into a scoring jug.	M	50 (M->E->M)
2	4	M	In the process of moving golf ball #2 into a scoring jug, the motor presses a microswitch. The microswitch completes a circuit.	E	
	5	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	6	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	7	E	The circuit powers a motor. The motor moves a lever, moving golf ball #3 into a scoring jug.	M	50 (M->E->M->E->M)
3	8	M	In the process of moving golf ball #3 into a scoring jug, the motor presses a microswitch. The microswitch completes a circuit.	E	
	9	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	10	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	

	11	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	12	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	13	E	The circuit powers a motor. The motor moves a lever, moving golf ball #4 into a scoring jug.	M	50 (M->E->M->E->M->E->M)
4	14	M	In the process of moving golf ball #4 into a scoring jug, the motor presses a microswitch. The microswitch completes a circuit.	E	
	15	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	16	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	17	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	18	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	19	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	20	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	21	E	The circuit powers a motor. The motor moves a lever, moving golf ball #5 into a scoring jug.	M	50 (M->E->M->E->M-

					>E- >M- >E- >M)
5	22	M	In the process of moving golf ball #5 into a scoring jug, the motor presses a microswitch. The microswitch completes a circuit.	E	
	23	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	24	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	25	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	26	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	27	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	28	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	29	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	30	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	31	E	The circuit powers a motor. The motor moves a lever, moving golf ball #6 into a scoring jug.	M	50 (M- >E- >M- >E- >M- >E- >M- >E- >M-

					>E- >M)
6	32	M	In the process of moving golf ball #6 into a scoring jug, the motor presses a microswitch. The microswitch completes a circuit.	E	
	33	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	34	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	35	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	36	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	37	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	38	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	39	E	The circuit powers an electromagnet on a modified relay with cover removed. The electromagnet causes the armature on the relay to move.	M	
	40	M	The movement of the relay armature pushes two external (not a part of the commercial relay component) wires together. The wires complete a circuit.	E	
	41	E	The circuit powers a motor.	M	
	42	M	The motor pulls a nail which unjams a spring wound, mechanical timer. The timer turns until it unjams a second timer. The second timer unwinds until it presses a microswitch which completes a circuit.	E	
	43	E	The circuit powers a motor. The motor moves a lever, moving golf ball #7 into a scoring jug.	M	50 (M- >E- >M- >E- >M-

					>E- >M- >E- >M- >E- >M- >E- >M)
		M	In the process of moving golf ball #7 into a scoring jug, the motor presses a microswitch. The microswitch completes a circuit.	E	
	44	E	The circuit powers a buzzer. The buzzer sounds, completing the final task.	END	250