



2027 World GreenMech Contest GMJR-S Rules



GMJR-S: Protect the Ecosystem



This competition consists of two Challenges:

[Challenge 1: Logistics Supply]

[Challenge 2: Eliminate Invasive Species]



Competition Theme

Invasive alien species are a serious challenge worldwide. When species native to one region are introduced into another, they may cause economic losses, ecological damage, or risks to human health. Governments spend substantial resources trying to remove them, yet complete eradication is rarely achieved. Young challengers, help the Gigo Team take on the difficult mission of eliminating invasive alien species!



Competition Rules

Entry and Competition Field Requirements:

1. Competition Materials:

Teams must prepare all parts, practice hunting-projectile blocks, and rubber bands. Rubber bands may be any size but must be made of rubber; no other elastic cords may be used. Except for chains, all parts must be completely separated and unassembled during pre-competition inspection. The quantity limit for each part in one entry follows the #1261 SCIENTIFIC TOUR manual. Each team is responsible for its materials at all times.

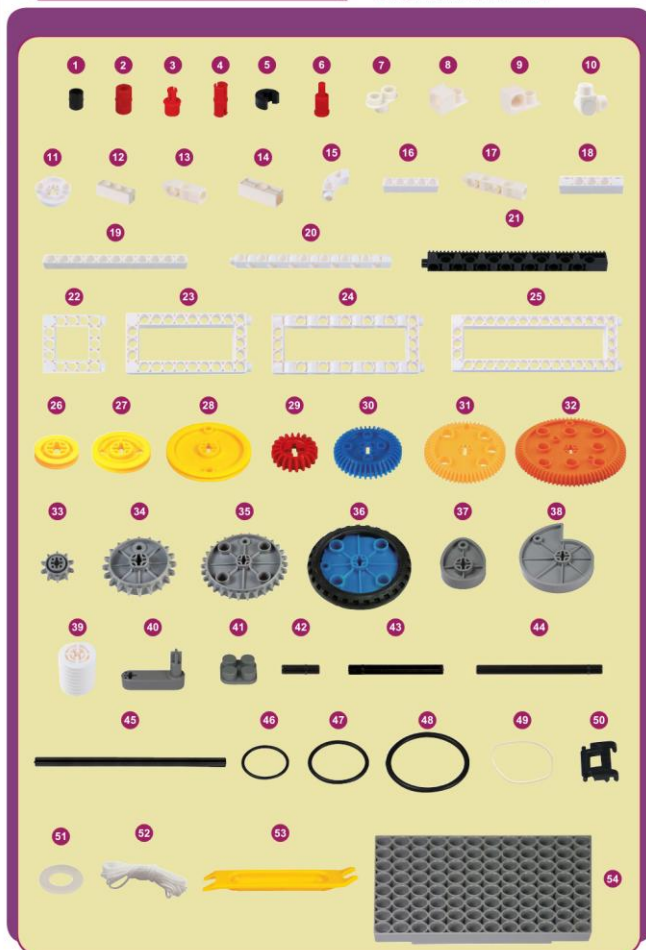
Competition Rules

FUN LAB

Knowledge comes from experience alone #1261

#1261 科學探索組 零件表

#1261 Scientific Tour Parts



清單：查找 - 檢查 - 核對 Checklist: Find - Inspect - Check off

號 NO.	零件名稱	Description	數量 QTY.	品號 Item No.
O 1	B-短結合鍵	B-SHORT PEG	15	7344-W10-C2D
O 2	C-長結合鍵	C-LONG PEG	15	7061-W10-C1R
O 3	C-自轉軸鍵	C-AXLE	5	7026-W10-H1R
O 4	C-20mm 軸扣鍵	C-20mm AXLE CONNECTOR	10	7413-W10-T1R
O 5	C-軸固定鍵	C-AXLE FIXING	5	3620-W10-A1D
O 6	C-凸輪連結鍵	C-CAM CONNECTOR	4	7413-W10-S1R
O 7	C-二合一結合鍵	C-TWO-IN-ONE CONVERTER	4	7061-W10-G1W
O 8	C-單向轉接鍵	C-FRONT CONVERTER	4	7061-W10-Y1W
O 9	C-雙向轉接鍵	C-LATERAL CONVERTER	4	7061-W10-X1W
O 10	C-關節鍵	C-HINGE	4	7061-W85-F1W
O 11	C-軸轉接器	C-ROD CONNECTOR	2	7026-W10-L2W
O 12	C-3孔長條	C-3 HOLE ROD	4	7026-W10-Q2W
O 13	C-3孔超長條	C-3 HOLE DUAL ROD	4	7413-W10-Y1W
O 14	C-3孔及側面有孔	C-3 HOLE ROD FRONT CLOSED	4	7026-W10-X1W
O 15	C-3孔 1/4 弧長條	C-BENDED ROD	8	7061-W10-V1W
O 16	C-5孔長條	C-5 HOLE ROD	4	7413-W10-K2W
O 17	C-5孔超長條	C-5 HOLE DUAL ROD	4	7413-W10-X1W
O 18	C-5孔長條側面有孔	C-5 HOLE ROD FRONT CLOSED	4	7413-W10-R1W
O 19	C-11孔長條	C-11 HOLE ROD	6	7413-W10-P1W
O 20	C-15孔超長條	C-15 HOLE DUAL ROD	6	7413-W10-Z1W
O 21	C-15孔超長條	C-150mm RACK	2	7061-W10-T2D
O 22	C-5x5孔正方框	C-5X5 FRAME	4	7413-W10-Q1W
O 23	C-5x10孔長方框	C-5X10 FRAME	4	7413-W10-I1W
O 24	C-5x13孔超長方框	C-5X13 DUAL FRAME	1	7061-W10-U1W
O 25	C-5x15孔長方框	C-5X15 FRAME	4	7413-W10-J1W
O 26	C-0023mm 滑輪	C-0023mm PULLEY	2	7344-W10-N3Y
O 27	C-0033mm 滑輪	C-0033mm PULLEY	2	7344-W10-N2Y
O 28	C-0053mm 滑輪	C-0053mm PULLEY	2	7344-W10-N1Y
O 29	C-20T 齒輪	C-20T GEAR	6	7026-W10-D2R
O 30	C-40T 齒輪	C-40T GEAR	6	7346-W10-C1B
O 31	C-60T 齒輪	C-60T GEAR	4	7026-W10-W5Y
O 32	C-80T 齒輪	C-80T GEAR	2	7328-W10-G2O
O 33	C-10T 鍊輪	C-10T CHAIN GEAR	2	3569-W10-D2S1
O 34	C-20T 鍊輪	C-20T CHAIN GEAR	2	3569-W10-D1S1
O 35	C-30T 鍊輪	C-30T CHAIN GEAR	2	3569-W10-C1S1
O 36	C-0070x12mm 橡膠輪	C-RACING TIRE	2	1115-W85-F2B
O 37	C-蛋形凸輪	C-EGG CAM	1	7063-W10-A1S1
O 38	C-螺形凸輪	C-SNAIL CAM	1	7063-W10-A2S1
O 39	C-溝桿	C-WORM GEAR	1	7344-W10-A1W
O 40	C-曲軸	C-CRANK	2	7063-W10-B3S1
O 41	C-底座結合器	C-BASE GRID CONNECTOR	2	7026-W10-I1SK
O 42	C-30mm II 軸	C-30mm AXLE II	4	7413-W10-N1D
O 43	C-70mm II 軸	C-70mm AXLE II	4	7061-W10-Q2D
O 44	C-100mm II 軸	C-100mm AXLE II	4	7413-W10-L2D
O 45	C-150mm I 軸	C-150mm AXLE I	2	7026-W10-P1D
O 46	C-0026mm 橡膠圈	C-0026 O-RING	2	R12-085
O 47	C-0036mm 橡膠圈	C-0036 O-RING	2	R12-075
O 48	C-0056mm 橡膠圈	C-0056 O-RING	2	R12-095
O 49	C-100mm 橡皮筋	C-100mm RUBBER BAND	2	R10-05
O 50	C-鍊條	C-CHAIN	55	3569-W10-B1D
O 51	C-墊片	C-WASHER	5	R12#3620
O 52	C-2000mm 特多龍線	C-2000mm STRING	1	R39-W85-200
O 53	B-扳手	B-PEG REMOVER	1	7061-W10-B1Y
O 54	C-8x12 底座	C-BASE GRID	2	7125-W10-A1SK

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Challenge 1: Logistics Supply

Build Restrictions: Refer to the Elastic Car in #1261
SCIENTIFIC TOUR.

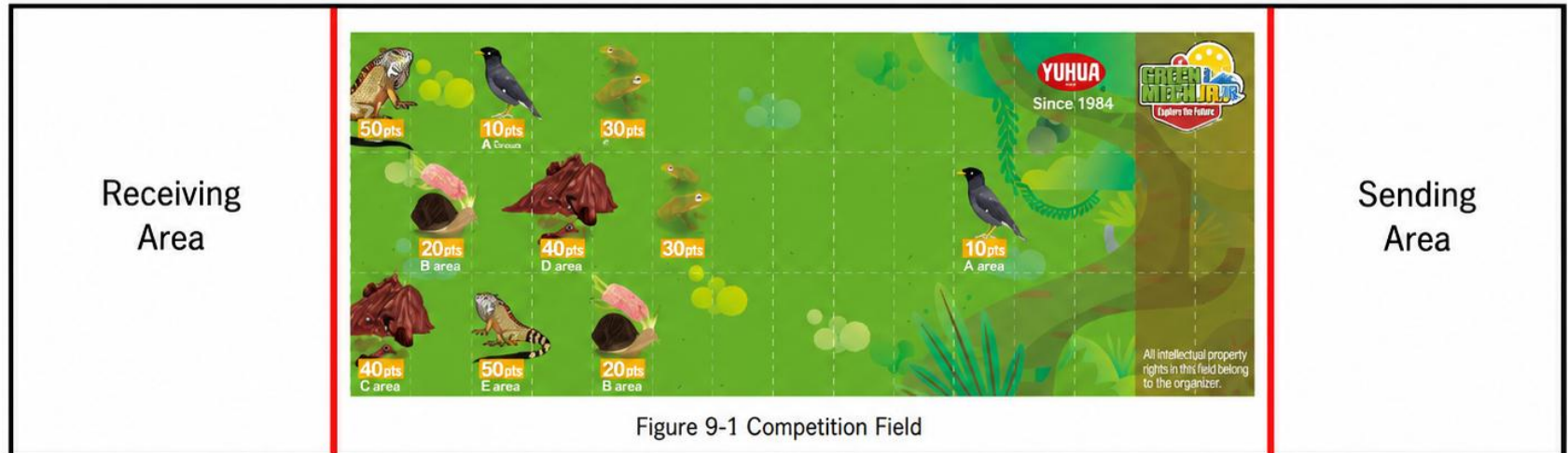
(1) Each team must build one four-wheeled vehicle powered by rubber-band elasticity and equipped with a switch. After tensioning the rubber band, the participant must release the vehicle and use the switch to start it. Other operating methods will not be scored.

(2) The vehicle must fit within a 30 × 30 cm Vertical Projection.

Challenge 1: Logistics Supply

Competition Rules:

(1) This Challenge uses the Field shown below (120 × 300 cm, printed on matte-laminated water-based photo paper).



Challenge 1: Logistics Supply

Competition Rules:

(2) Each team has 90 seconds. Only one hunting projectile may be loaded onto the supply vehicle at a time. Each projectile consists of one B-CUBE and one B-6 HOLE CUBE; color is unrestricted. **Loading method is unrestricted, but the projectile must remain assembled when removed to count for scoring.**



Hunting Projectile



Challenge 1: Logistics Supply

Competition Rules:

(3) The Organizer will provide **20** hunting projectiles. The two participants must stand in the Sending Area and Receiving Area respectively. Both outbound and return trips must be powered by rubber-band elasticity. The vehicle must be released before crossing the red line. Invalid attempts must be repeated while the timer continues. **All four wheels must touch the ground in the Receiving Area for a successful transport.**



Challenge 1: Logistics Supply

Competition Rules:

- (4) The supply vehicle must travel completely across the Competition Field. If it does not, **the participant must retrieve it and try again**. If the projectile falls, it does not score; retrieve both the vehicle and projectile and restart. The timer continues throughout.
- (5) Successfully transported projectiles are converted into Challenge 1 points as shown below.

Successfully Transported Projectiles	1-5	6-10	11-15	16-20
Point Conversion	20 points each	30 points each	40 points each	50 points each



Challenge 1: Logistics Supply

Competition Rules:

- (6) If a problem is found before operation, participants have 30 seconds for minor repairs in or around the Preparation Area. After 30 seconds, the 90-second Competition Time begins whether or not the repair is complete.
- (7) **All entries and spare rubber bands must be included in the pre-competition weighing.** Total weight is used as a tie-breaking criterion.



Challenge 1: Logistics Supply

Build Restrictions:

- (1) Each team must build a launcher powered by rubber-band elasticity that can launch a hunting projectile. Other operating methods will not be scored.
- (2) There are no restrictions on the construction method or size of the entry.

Challenge 2: Eliminate Invasive Species

Competition Rules:

- (1) The number of projectiles available to each team equals the number successfully transported in Challenge 1.
- (2) The target Field is shown in Figure 9-1.



Note: White-vented Myna: 10 points; Golden Apple Snail: 20 points; Spot-legged Tree Frog: 30 points; Red Imported Fire Ant: 40 points; Green Iguana: 50 points.

Challenge 2: Eliminate Invasive Species

Competition Rules:

(3) Participants must launch from within the Preparation Area, to the right of the red line. **The entire launcher must remain inside the Area in the ready position.** Only one projectile may be launched at a time, and it must separate from the launcher behind the red line. Invalid projectiles do not score and will not be moved. Any affected projectiles will not be returned to their previous positions.

[illegible]



Challenge 2: Eliminate Invasive Species

Competition Rules:

- (4) The shooting time limit is 90 seconds. The Challenge ends when all available projectiles have been launched, and each projectile is scored at its final resting position. **Unlaunched projectiles do not score.**
- (5) **Each grid may score up to three times.** Projectiles outside a Target Area or the Field score 0. For a projectile on a line or spanning areas, participants choose the scoring area. **Eliminating all targets of one invasive species earns 50 additional points.**



Challenge 2: Eliminate Invasive Species

Competition Rules:

- (6) If a problem is found before operation, participants have 30 seconds for minor repairs in or around the Preparation Area. After 30 seconds, the 90-second Competition Time begins whether or not the repair is complete.
- (7) **All entries and spare rubber bands must be included in the pre-competition weighing.** Total weight is used as a tie-breaking criterion.

Ranking Method:

This Competition uses a points system. If teams are tied, rankings will be determined in the order shown in the table below.

Tie-breaking Order	Criterion
1	Combined Score of Both Challenges
2	Challenge 2 Score
3	Challenge 1 Score
4	Combined Weight of Entries for Both Challenges (lighter is better)



World GreenMech Contest
Thank You