2025 World GreenMech - World Finals and Taiwan Finals Team Leader Meeting Agenda

1. Competition Announcements - Samuel

- This year’s competition will take place on Thursday, August 7, 2025, at Providence University. We've received an enthusiastic number of registrations, with participating teams coming from all over Taiwan as well as overseas. Thank you all for your enthusiastic participation and support!
- Teams in this year’s competition come from eight different regions: Taiwan, Hong Kong (China), Thailand, Vietnam, Indonesia, Malaysia, India, and Mongolia — with a total of 1,256 participants competing together. The number of awards in each category is based on the number of registered teams. Categories with more than 20 teams will have 1 Gold, 2 Silver, and 3 Bronze awards, while those with fewer than 20 teams will each have 1 Gold, 1 Silver, and 1 Bronze. What’s special this year is that the GreenMech Jr. -Science category received as many as 96 team registrations. As a result, the number of awards for this group has been expanded to 1 Gold, 3 Silver, and 6 Bronze — making the competition especially fierce.
- Please pay special attention to the following points regarding the competition schedule. Team check-in will be from 7:40 to 8:20, followed by inspection from 8:00 to 8:50. The opening ceremony will be from 8:50 to 9:00. The award order will be arranged based on the announcement time of each group’s results. In the morning, awards will first be presented for GreenMech Jr. -Science at around 11:50, followed by GreenMech -Basic at around 12:30. In the afternoon, awards will be presented in the following order: GreenMech Jr. -Programmer at around 4:10, R4M Basic and Advanced at around 4:30, and GreenMech- Advanced at around 5:10.

- Check-in will be done at each team's table. Please go directly to your assigned competition table to complete the check-in process. At check-in, please first put on the event T-shirt placed on your table, then attach the team sticker provided by the organizers to the left sleeve as an identification mark. A Certificate of Enrollment check will also be conducted, with detailed procedures to be provided later. Material inspection will take place from 8:00 to 8:50 AM. Please note that after 8:00 AM, parents and instructors will no longer be allowed to enter the competition venue. At that time, venue supervisors will assist in announcing this on-site and asking parents to leave. Therefore, if parents of GreenMech Jr. -Science participants wish to enter earlier, they may do so, but they must leave the venue once the clearing process begins after 8:00 AM.
- Each team's table will have the necessary materials and related documents prepared in advance. In addition to the event T-shirt and commemorative medal. GreenMech categories will receive a science scoring sheet and a competition reminder notice, while R4M categories will receive the competition reminder. For both GreenMech Jr. -Science and GreenMech Jr. -Programmer, each team will receive an event T-shirt, a medal, a materials check sheet (in instruction manual), and a set of Happy Snake. In addition: GreenMech Jr. -Science teams will each receive one set of #1261 SCIENTIFIC TOUR as their competition materials. GreenMech Jr. -Programmer teams will receive the #7442-A, CODING & ROBOTICS: CHALLENGE PACK 1, which is a supplement to the #1205 PROGRAMMING EDUCATION ROBOT 2. 0. For more information about these products, feel free to visit the Gigo official website.

- **Regarding the Proof of Enrollment:** Contestants must submit their proof of enrollment to the staff during check-in. (Refer to Section 11.1 of the regulation: The proof must be truthfully filled out and include a photo, **as well as a stamp**

and signature from school personnel confirming the information is correct.) Other valid documents include a photocopy of a student ID card with a photo, or a copy of a graduation certificate for recent graduates. **If even one member of the team is unable to present one of the valid proofs on the competition day, the team must cooperate with onsite photo documentation for verification purposes.** After the competition, only contestants who submit a complete and valid proof will be eligible to receive the corresponding prizes or awards. Your cooperation is appreciated.

- Please pay special attention to the following: The competition venue is an indoor gymnasium, and to protect the flooring, no food or beverages are allowed in the competition area — this includes all drinks, especially those with colored liquids. If any damage to the floor is found, whether caused by spilled drinks or chemical leaks, the responsible team will be held liable for compensation. In addition, large items such as suitcases, toolboxes, or ladders must have proper protection on the bottom to prevent scratching the floor.
- Next, let's take a look at the venue map for this event. The yellow arrows indicate the entry route for all vehicles, while the red arrows show the designated parking and movement route for buses. Private cars should find and park in available parking spaces on their own.
- Regarding parking, a special discounted plan is available this year. If payment is completed within the designated time and the license plate number is provided in advance, each vehicle can enjoy unlimited entry and exit on the competition day for a flat fee of NT $100. Please make sure to place the official parking permit issued by the organizers in a clearly visible spot on your vehicle's windshield so that campus security can easily identify it. Vehicles without a visible parking permit may be subject to being wheel-locked by the school. Please pay special attention to this rule.

- Parking Announcement: For overseas teams: tour bus payment and arrangements will be handled directly through your sales representative to ensure smooth coordination. All large vehicles and tour buses should park at Parking Lot No. 2, located near the mountain top. This area is designated specifically for larger vehicles and will be clearly marked. Staff will be on-site to assist as needed. Please inform your driver in advance and follow on-site instructions.
- This year, the GreenMech and GreenMech Jr. competitions will be held at the basketball court on the 2nd floor of Providence University. Please note that the entrance from the school's main gate leads directly to the 2nd floor. The award ceremonies will also be held at the basketball court on the 2nd floor. Additionally, since there are no seats at the competition venue this year, parents and teachers may rest along the hallways on the 1st to 3rd floors, as well as in the outdoor rest area on the 2nd floor. The organizers will provide some seating, but if you are concerned about availability, you are welcome to bring your own chairs or picnic mats. Please note that these rest areas are not air-conditioned.
- For this competition, we have provided two dining and rest areas: Yi Yuan and Zhi Shan restaurants. Both locations are air-conditioned and open for parents and team leader to use, offering a comfortable space to relax. Please note that during the contestant meal times, the restaurants will be cleared for their use. A special reminder to overseas teams dining onsite: please be sure to sit according to the designated time slots and assigned seating. After your meal time ends, kindly leave promptly so the next group can use the space smoothly.

- There are a few important points regarding food delivery to note. Providence University allows the use of delivery platforms; however, all delivery personnel must first register at the campus security office before entering the campus.

When placing your order, please inform the delivery person that they need to complete registration at the security office and agree on a designated drop-off location within the campus. Most importantly, no food is allowed to be brought into any buildings or competition venues. Please be sure to strictly follow this rule.

- This year, the organizers have partnered with several hotels and amusement parks to offer exclusive discounted rates for participating teams. If your team requires accommodation or extended travel plans, please feel free to contact the providers directly and mention that you are a participant of The World GreenMech Competition to enjoy these special offers. The discount website link is already included in the presentation for your reference.
- Regarding entry regulations, please be reminded once again that only participating teams are allowed inside the competition venue. Parents and instructors are not permitted to accompany participants during the competition. However, during the award ceremony, they may enter the venue to watch and accompany the participants on stage to receive their awards.
- All certificates for the World Competition are in English. Instructor and participation proofs are provided in digital format, with the download location updated as shown in the slide. Participants can log into the website after the competition to download these documents. If you request any modifications to the certificate content, a processing fee of 7 US dollars will be charged, which includes postage. Competition results, including all awards and honorable mentions, are expected to be announced on the official website by 7 PM on August 7.
- This time, the certificate content will include the instructor’s or student’s name, school name, team number, and team name.
- Additional note: The attached image shows the layout style of the certificates used for the Taiwan competition.

- Please be reminded that all registration information has been published. If you need to add or modify any registration details, please contact us as soon as possible. The deadline for registration changes is July 11. After this date, any changes to certificates will incur a processing fee of 7 US dollars.
- If the prize winner is not a resident of Taiwan, or is a foreign business/entity without a fixed place of business in Taiwan — including individuals from Mainland China who stay less than 183 days in a tax year, or Mainland Chinese companies and organizations without a fixed business location in Taiwan — a 20% withholding tax will be applied to the prize amount. Additionally, please provide a photo of the bank passbook showing the bank name and code, branch name and code, account holder's name, and account number clearly. Finally, please be aware that winning teams must submit their award videos within one month after the competition (no later than September 4). Award will only be released to your designated account after the videos have been reviewed and approved.
- Regarding insurance, the organizers have purchased Nan Shan Public Liability Insurance for all competition venues to ensure everyone can participate with greater peace of mind.
- For the R4M category, please take note of the following important points: Each team must prepare their own internet connection. Devices with cached data may also support offline use. The organizers will provide 2 broadcast channels per team (it's on WGM website now). If more are needed, teams may request additional channels onsite on the day of the competition.
- Teams in the R4M-Advance category can prepare their own three-color cards required for the competition, it will also be provided by the organizers. In the event of force majeure requiring a team member replacement, the instructor must submit a request along with supporting documents by July 11. Each team may only replace up to 50% of its original members. Lastly, a note on registration fees and giveaways: Only GreenMech Jr. categories will receive the Happy Snake and either the #1261

or #7442-A block set. Therefore, only these categories are subject to a registration fee.

- Finally, a reminder: if you have any questions about the competition, please first check the Q & A section on the official website. You can also submit your questions via the form link provided in the slide. Please remember to log in to your member account before filling out the form. We will respond to your inquiries as soon as possible.
- That concludes all the information for this briefing. If you have any further questions or need clarification on anything, please feel free to ask now.

Q/A:

Q1. Can team leaders enter the venue to watch the award ceremony?

A1. Yes, team leaders and parents are allowed to enter the venue to watch the award ceremony.

Q2. What happens if a team arrives after the check-in deadline of 8:20 AM?

A2. If a team is unable to check in on time due to unforeseen circumstances, they may still participate upon arrival. However, no time extensions will be granted. Please make use of the remaining time to complete the competition.

Q3. For the proof of enrollment, can we use the form from the competition guideline by filling in student information and attaching a photo?

A3. Yes. Please complete the form truthfully as stated in Section 11.1 of the regulation, including a photo and an official stamp and signature from school personnel confirming the accuracy of the information.

Q4. Can team leaders enter the venue to watch the award ceremony? If so, when may they enter?

A4. Yes, team leaders and parents may enter to watch the award ceremony. Please enter according to the award schedule for each competition group.

Q5. If we complete the proof of enrollment form provided in the guideline, do we still need to bring a copy of the student ID?

A5. If the Section 11.1 proof of enrollment form is completed correctly, there is no need to bring a copy of the student ID.

2. GreenMech Jr. -Science Competition Regulations Reminder - Mihaly

RACING TIRES, BASE GRIDS, strings (diameter not exceeding 2mm), Police blocks and Hostage blocks can be prepared according to the specifications listed in the regulation.

If the string is wrapped around blocks when brought into the venue, due to material regulations, contestants will be asked to untie the string and remove any parts not permitted in the regulation. During this process, judges will not assist in any way; please pay close attention.

During the competition, a timing tablet will be used on site. When 5 seconds remain, the judge will issue a countdown warning.

Q1. There are only 2 RACING TIRES in #1261; can we bring 4 more RACING TIRES for practice?

A1. No problem, even bringing more than four on your own is allowed.

Q2. During the competition, if the work is placed on the #1261 Plastic Bin lid, can the original papers, plastic boxes, and self-prepared parts from #1261 be left outside the box?

A2. After completing the competition work, except for the work that must be placed on the lid, all unused parts and items, including paper regulations, must be stored back

into the #1261 Plastic Bin and secured with the lock. Therefore, it is recommended to bring only a suitable amount of parts. If contestants fail to complete the above after being reminded by the judge, a deduction of 5 points will be applied in accordance with Article 4. 7 of the contest regulations.

(This differs from the explanation given in the meeting video on the day of the leader meeting. However, the jury has decided that this meeting minutes shall prevail.)

Q3. Will the timer stop if a warning is issued?

A3. Once timing begins in Competition 2, the timer will not stop under any circumstances.

Q4. Can the Police block be fixed in place?

A4. There is no specific rule on fixing the Police block, but if the Police or Hostage block has any connectors attached when time is up, it will not be counted for points.

Q5. Within 90 seconds, does one Police block need to enter the basket, or do all three need to enter?

A5. When the 90-second competition time ends, only items inside the basket will be scored (including surviving Police blocks and rescued Hostage blocks).

Q6. Can the cable car along with Police and Hostage blocks all be put into the basket at the end?

A6. Yes, it will not affect the scoring of surviving Police blocks and rescued Hostage blocks.

Q7. During the assembly and testing time of Competition 2, is practicing in the competition area allowed?

A7. During Competition 2, contestants may practice in any safe area inside the competition venue that does not interfere with others.

Q8. For the competition, are the cable car's string and handle self-prepared or provided on-site?

A8. For Competition 2, strings and fixed blocks must be self-prepared; only the Police and Hostage blocks are provided by the Organizer.

Q9. If the cable car touches the ground, should the contestant or the judge retrieve the Police and Hostage blocks? Will the timer stop?

A9. Once the cable car touches the ground, it is considered eliminated. The judge will announce it, and contestants must pick it up themselves. The timer does not stop.

Q10. If the cable car is stuck in the middle and cannot be reached by hand, does it need to touch the ground to restart?

A10. Because contestant's feet cannot cross the red & blue line, if the cable car is stuck in the middle and cannot be reached by hand or moved by other means, it is recommended to let it touch the ground to restart and avoid wasting time. Once the cable car touches the ground, any Police blocks or Hostage blocks in it will be considered eliminated, and at this point, the contestant may enter the 3-meter competition area to retrieve them.

Q11. When rescuing multiple hostages, does the rescued Hostage block have to be put into the basket before the next one is saved? Can Hostages dropped outside the basket be picked up during the final countdown?

A11. It is not necessary to immediately place Hostage blocks in the basket; as long as they pass the safety zone, they are considered rescued. However, before time ends, both Police and Hostage blocks must be placed into the basket to score points.

Q12. Can the string be threaded through the cable car before timing starts?

A12. Yes, judges will first check contestant readiness; the string can be pre-threaded through the cable car, and the string can be held by hand.

Q13. Can team leaders enter the venue to assist teams with translation?

A13. Only with approval from the chief judge; however, they cannot give any guidance or coaching. If found in violation, the team leader will be asked to leave immediately.

Q14. If a Hostage block or Police block, after passing the safety zone, accidentally falls back inside the red & blue line, will it still be considered rescued?

A14. As long as it passes the safety zone line during transport, it is considered a successful rescue, and the block can be picked up and returned to the basket before time ends (as long as contestants can pick up the block without stepping into the restriction area).

Q15. Will the Hostage rescue process be recorded on video?

A15. Each competition area will be recorded for evidence purposes, but the videos will not be provided.

Q16. After filling out the complaint form, should it be handed directly to the judge? Will the cable car's weight affect tie-break decisions? Is there a weight limit?

A16. Yes, the form should be given directly to the judge, who will forward it to the chief judge. Weight measurements are only considered in case of a tie; there is no specified weight limit.

Q17. Must self-prepared Hostage and Police blocks, grey BASE GRID, etc. , all be stored in the #1261 Plastic Bin?

A17. Yes, it is recommended to only bring a suitable amount of parts for use. (please refer to Q2).

Q18. Before the 90-second timer starts, can the Police blocks and strings be pre-positioned?

A18. Police blocks cannot be placed into the cable car before starting; the cable car must be on the ground, and Police blocks must remain in the basket. The string can be pre-threaded through the cable car.

Q19. During the competition, will children know if they have received a warning, or will the judge record it silently?

A19. If any violation occurs, the judge in each competition area will clearly notify the contestant with a warning.

Q20. Can contestants move the basket themselves, placing it next to them?
A20. Baskets in the safety zone or hostage zone may be adjusted as long as the adjustment complies with the rules.

Q21. If, at the end of time, the cable car and Police and Hostage blocks are all inside the basket but the Police block is still connected by connectors to the cable car, will points be deducted?
A21. If any connectors are attached to the police block (to fix it to the cable car), they must be removed. Otherwise, the police block will be considered eliminated and scored accordingly based on the rules.

Q22. If, during transport, the string comes off the pulley, can the contestant continue transporting?
A22. Yes, since the timer does not stop, if possible, transportation can continue.

Q23. During weighing, should the self-prepared string and cable car be weighed together?
A23. Yes, the pre-competition weighing includes the assembled parts used in the competition, so self-prepared strings and the cable car must be weighed together. If the string is tied to the handle, the handle must also be included in the weighing.

Q24. Before the 90 seconds start, is it allowed for the string to go through the cable car while the hand is holding the string and the cable car is placed on the ground?
A24. Yes, before the match starts, the string can go through the cable car, and the hand may hold the string. However, the cable car must be placed on the ground.

Q25. Is it allowed to loop the string through the space under two stacked pulleys?
A25. Yes, that is allowed and complies with the rules.

Q26. Regarding the weighing process, are the cable car and the vehicle weighed together? So only the bomb squad vehicle's weight affects tie-breaking, and the cable car is just recorded into the system?
A26. The vehicle and cable car will be weighed separately before each competition. The weight of both will affect the tie-breaking criteria.

If criteria 1 to 4 are identical, we will then refer to criterion 5: the total weight of the two competition entries, with the lighter one ranked higher.

Q27. Is it okay for the Police block and Hostage block to be fastened together using connectors? When should they be detached?

A27. They must be detached before the end of the competition time. During scoring, the Police block and Hostage block must be in their initial state.

(Note: Competition time is not maintenance time. Wrenches are not allowed during competition time, so contestants must plan accordingly.)

Q28. If there are no connectors, can the Police block be placed inside the vehicle and still be counted as valid if it ends up in the basket? Can the Hostage block also be placed in the cable car if it ends up in the basket?

A28. As long as the Police block or Hostage block are in their initial state (no missing parts, no additional attachments) and are inside the basket, they will be counted as valid for scoring.

Q29. Must contestants bring their own materials (including string for Competition 2)? Will new #1261 sets be provided on the competition day, or do we use our own?

A29. Refer to the regulation for allowed self-prepared parts. On competition day, a new set of #1261 will be provided; teams will use the Organizer-provided #1261.

Q30. Can baskets in the safety zone or hostage zone be moved to the contestant's left or right side for easier placement or retrieval?

A30. Yes, they can be freely moved as long as the adjustment complies with the regulation.

Q31. What is the standard for determining a violation of the red & blue line?

A31. The criterion is that both feet must not cross the red & blue line (the front part of the feet touching the ground must not go beyond the line), but the hands or body may extend over it in the air.

Q32. If the cable car touches the ground, who should pick it up? The student or the judge?

A32. The contestant must pick it up. If there is a Police block or Hostage block inside, they must be removed together.

Q33. Within the 90 seconds, can the cable car be directly placed into the basket, as long as no connectors are used to attach any blocks to the cable car?

A33. Yes, the main focus will be on checking the connectors. If there are connectors on it, it will be considered eliminated and no points will be given (same as A21).

Q34. During final scoring, if the Police block or Hostage block still has additional parts attached, or the Police block is still connected to the cable car, how will the score be affected?

A34. If there are connectors or it is still connected to the cable car, it will be considered eliminated. An eliminated Police block will lead to a deduction, while an eliminated Hostage block will not be counted for points.

Q35. If the Police block and Hostage block have no connectors, but the cable car itself has a fixed frame that holds them, will this still result in a deduction?

A35. If the Police block is on the cable car during scoring but is not attached using any connectors or parts, and remains in its original state, there will be no deduction.

Q36. For cable car testing, must the Police block and Hostage block be brought in as separate parts and assembled on site?

A36. Yes, the test Police block and Hostage block must be brought to the site as individual parts and assembled there.

Q37. Following up on the above: should the parts include the string and handle? Can the assembly be done during the 25-minute bomb squad vehicle assembly period?

A37. The handle used in the competition must come only from the Gigo #1261 Scientific Tour set or other approved materials. The string must remain separate from the parts upon entry. The cable car may be assembled during the allowed time, but all non-competition items must be stored in the box before the match begins.

Q38. After the bomb squad vehicle competition ends, should the vehicle be placed on top of the box or disassembled and placed inside?

A38. All parts except for the current competition project must be placed back into the box. So before Competition 2 begins, the project from Competition 1 must be put back into the box (it's up to the team to decide whether to disassemble it).

GreenMech Jr. -Programmer Regulations Reminders – Mihaly

Q1. Will the 20-minute preparation time be conducted simultaneously for all teams? Will there be a timer displaying the remaining time at the venue?

A1. The 20-minute preparation time is counted individually for each team. After the team finishes drawing lots, the countdown starts when they enter the Preparation area. The judge will inform each team of their preparation time slot.

Q2. Must the robot enter the Coal bunker from the Black arrow? Or is entry from the side also acceptable?

A2. Normally, the robot should enter from Position C3. However, if it enters from Position B3 or Position D3 while rotating, the score still counts. Any entry from other positions is not valid and will not be scored.

Q3. After completing the mission at the Base card, does the robot need to return to the arrow location before it can be retrieved?

A3. Once the mission on the Base card is completed and the judge announces that the score is awarded, the robot may be removed with the judge's approval. It is not required to return to the original starting point.

Q4. While students are competing, is there a designated area for teachers to observe the match?

A4. Currently, the Competition venue is not open to spectators.

Q5. After the robot completes a mission at the Base card (e. g. , turning on a light), can it be picked up immediately as it retreats? Or must it fully return to the mission

starting point first?

A5. Once the mission is completed and the judge announces the points, the robot may be removed with approval. There is no need to wait for it to retreat to the card's starting point.

Q6. If the Map card and blocks are placed in position, can the blocks still be adjusted before the robot arrives?

A6. As long as the robot has not reached the area or has already passed it, block adjustments are allowed.

Q7. Before the match starts, can Map cards be placed around the edges of the main map?

A7. Yes. Before the competition starts, Map cards in an unconnected state can be placed around the edge of the competition area.

Q8. Before the 6 minutes match begins, can the student place the Base card and the robot near the Start position?

A8. Yes, same as above. It is allowed.

Q9. If a robot gets stuck between the Map cards while moving a target block, can the contestant adjust the robot by hand, or must they restart?

A9. Contestants may press down with their fingers on the seam of the map, and must not touch anything except the map cards. If the robot is touched, the match must restart from the beginning.

Q10. Is there a required design for the windmill structure?

A10. No. As long as it is rotated by the robot’s program, either vertically or horizontally, it counts for scoring.

Q11. If the robot is stuck on a Map card, can another card be used to touch or help move it? For example, placing a card under the robot?

A11. No. Touching the robot in any way during the match is strictly prohibited.

Q12. When a robot turns at the edge of a Map card, it may get stuck. Is it allowed to extend the surface with additional Map cards beyond the edge?

A12. Yes. Map cards may be placed beyond the edge, but the robot must not move beyond the Competition area.

Q13. Could you clarify again: if a robot is stuck on a Map card, regardless of where (e. g. , a seam), what actions are allowed to avoid penalties? (Is restarting from the Start position required?)

A13. If the robot is stuck, contestants may press or lightly tap the seam area—but must not touch the robot. Please remind students to practice avoiding such issues.

Other question:

Q: Will the receipt for the GreenMech Jr. registration fee be available on the competition day?

A: No. The receipt will be issued within one month after the competition.

If you require an invoice under a school's name, please email the school name and Tax ID number between August 11–15 to: davidlai@mail. gigo. com. tw

4. R4M - Basic Competition Rule Reminders -Livia

- **The Competition area measures 140x300 cm (width x length). Each Competition area accommodates only one team. Before the mission begins, Robot A, Robot B, and Robot C (Robot C being autonomously programmed and not remote-controlled) must be placed in their respective Start positions. Upon the judge's announcement, the team may begin.**

Mission 1

Robot A, Robot B, and Robot C each earn 5 points for successfully departing from their respective start positions.

Mission 2

Robot C must be equipped with either a (1247-W85-B3) or a C-INFRARED SENSOR (1409-W85-D). (See specifications in regulation 8. 12. 1. Robot for Mission Contest -Component List)

Robot C is controlled using autonomous programming (not remote-controlled). The program can be written, modified, or uploaded during the match. It follows the black line to transport a 20-foot Type B container from the Preparation area to the designated 20-foot B-type Goal Area. Max score: 160 points. This mission must be performed only by Robot C. The container and tracking line must entirely enter the black border (inner line) to score points.

Mission 3

Robot A and Robot B must transport a 40-foot container from the Preparation area to the 40-foot Goal Area.
Refer to the regulation (P. 25) for detailed scoring.
Max score: 80 points

Mission 4

Robot A and Robot B must transport 20-foot A Type containers and yellow circles from the Preparation area to the 20-foot A-type Goal Area.

Both the container and yellow circle must have their orthographic projection fully inside the zone.
Color must match the correct zone to score.
30 points per valid set, Max score: 220 points

Mission 5

Robot A and Robot B must transport Dangerous Oil Can from the Preparation area to the designated Goal Area.

If placed upright: 40 points each

If placed upside-down: 20 points each

Max score: 150 points

(Orthographic projection must be within the scoring area.)

Mission 6 – Green energy batteries

Battery sizes:

- **Green = small**
- **Yellow = medium**
- **Orange = large**
  They must match the corresponding gear sizes on the map.
- **Elementary Division: May freely place batteries in 3 of 4 zones (A, B, D, E). No drawing lots.**
- **Junior High Division: 1 zone will be randomly drawn before the match.**
- **High School Division: 3 zones will be drawn and unified for all teams.**
- **Batteries must be placed inside the white outerline area of the designated zone, regardless of size.**

Scoring System

- **Match duration: 2 minutes**
- **Ranking priority: Highest score**

- **If tied: Shorter completion time ranks higher**

- **If still tied: Lower total robot weight ranks higher**

Q1. What if all four racing tires of Robot A or Robot B go outside the competition area?

A1. As per rule 8. 2. 10: Since the Competition area lacks physical boundaries, a violation is recorded only when the last racing tire (or ground-contacting structure) crosses the boundary.

- **1st offense: Verbal warning**

- **2nd offense: 5-point deduction for Damage to the competition area**

- **Violations are cumulative**

Q2. What if the Container Goal Area for Mission 4 is moved during play?

A2. Movement of the Container Goal Area during the match is acceptable. At the end of the match, if any part of the Container Goal Area stays in the white base, it qualifies for scoring.

If the Container Goal Area is completely outside the white area, then:

- **One deduction for Damage to the competition area**

- **All items inside the Container Goal Area receive no points**

The basket does not need to touch the yellow/green/blue zones.

Q3. Clarification on Pause rules

A3. If a team suspects external interference (e. g. , robot moves unexpectedly without input), they may request a pause:

- **If the judge confirms interference:**

    1. **Rematch may be requested**

    2. **Continue match (if score is high)**

- **If not interference: Match resumes and time continues**

Note: The pause button is manually operated, and may not be instant. If the situation is found unfair, a rematch can still be requested.

Interference judgment:

- **Likely interference: Remote held, robot moves itself**

- **Unlikely: Remote not held, robot remains still → may be power issue → no rematch**

Q4. Clarification on scoring for 20-foot A Type container + yellow circle

A4. In 2024, only the container needed to be placed correctly. In 2025, both the container and the yellow circle must be inside the orthographic projection zone, and their colors must match.

5. R4M-Advanced Competition Rule Reminders -Livia

competition area and mission Descriptions

The main competition area measures 120 x 200 cm (width x length) and is covered with a map. Each competition area is designated for one team only. Teams must place

Robot A Robot B, Robot C, and the D Automated Platform in the specified starting zones and positions of the space station.

Mission 1

Robot A: If Robot A completely departs from the Ship Areas A of the spaceship, 10 points will be awarded.

Robot B: Completing one mission will grant 10 bonus points. Please note that the maximum score for this mission is 10 points and is not cumulative; completing three missions will still only earn 10 points.

D Automated Platform: Using fully automated programming or AI-based automated control to complete at least one mission will award 40 points.

Mission 2: Meteorite Transport Notes

Elementary School Group: Small meteorites may be directly transported and stacked in the Meteorite Collection Cabin. Each meteorite is worth 35 points.

Junior High and High School Group: Small meteorites may only be transported after Robot A, Robot B, or the D Automated Platform has delivered large meteorites to the Meteorite Disinfection Space A or B (including the corresponding airspace). Each small meteorite is worth 35 points. There are two small meteorites in total.

Handling of mission Items by Hand:
Regardless of Basic or Advanced Group, if a mission item is knocked over or misplaced during transport, it may not be manually reset or request assistance from judges—except for small meteorites in the Advanced Group, which may be reset to their original position upon judge approval. All other items may not be manually reset.

Additional notes for mission 2 should be referred to in the official regulation.

Mission 3: Fuel Balls and Fuel Rods Transport

Use Robot A, Robot B, or the Automated Platform to transport eight fuel balls and four fuel rods from the Space Station Fuel Tower to the Space Fuel Tower. Points are awarded based on pairing matches. For example, if seven fuel balls are transported but only three fuel rods are matched, scoring will be based on the three valid pairs, not on the total number of transported balls.

Spaceship mission

Place the spaceship in the designated zone to earn the corresponding score. The spaceship may have its direction adjusted at the starting position, but flipping it over is not allowed.

Mission 5: Meteorite Fragments and Large Meteorite Handling

Place meteorite fragments from areas A, B, C, E, F, and G into any of the two Meteorite Temporary Storage Zones. Large meteorites must be placed in their designated zones. If the color of the large meteorite is correct, full points will be awarded. If incorrect, partial points will be given.

Mission 6: Astronaut and Hydrogen Tank Transport

Transport the astronaut to the corresponding zone, and also transport the hydrogen tank to its designated position. The hydrogen tank must be placed on the first floor of the Spacecraft Parking Area not in the airspace.

Match Time

Basic Group: 2 minutes
Advanced Group: 3 minutes
Please be sure to note the difference in time limits.

Evaluation Criteria

Same as the Basic Group.

Pre-match Preparation Time

Teams will have 3 minutes to complete pre-match setup. After entering the competition area, this time includes device connection, platform setup, robot placement, and sensor alignment.

Advanced Group competition area Restrictions

- **While waiting at the team's own table: No assembly adjustments or on-competition area testing is allowed.**

- **While waiting at the Preparation Table B before entering the competition area: No assembly adjustments or testing on the competition area is allowed.**

- **While waiting at the Preparation Table A before entering the competition area: No assembly adjustments or testing on the competition area is allowed, but device connection may begin.**

Resetting Items During Competition

If a mission item is accidentally displaced during the match, it may not be reset by hand. Only small meteorites in the Advanced Group may be manually reset, and only with judge approval. No other items are allowed to be reset manually.

Mission 2.2: Color Drawing

Before the match, a color will be drawn: Red / Blue / Green. The drawn color will apply to all teams for that round. For example, if red is drawn, all teams will use red as their mission color.

A4 Paper on the competition area

If A4 paper is placed in designated zones and may cause vehicles to slip or interfere with missions, teams are not allowed to remove the paper. If the paper is accidentally displaced or falls out of the competition area due to vehicle collision or movement, judges will not intervene.

Advanced Group Controller Box Rules

- **There are no restrictions on the controller boxes used for Robot A, Robot B, and the D Automated Platform.**

- **However, Robot C must use the official Gigo controller box. Please make sure this is clearly communicated to the team leader.**

Frequently Asked Questions (Q&A)

Q1. Can the automated platform extend props from the grey base grid to the ground (without exceeding the green frame)?
A1. Before the competition starts, it must not exceed the green frame. Please note that after the start of the competition, you must not assemble the extended props into a remote-controlled car for use in the match; this is strictly prohibited.

Q2. Can the main control box connect to external modules?
A2. In principle, the robot must use a Gigo control box. All external cables must be connected from this main control box. This means your setup must extend the remote control module from the Gigo control box. If you use an Arduino expansion board without incorporating the original Gigo control box, it is not permitted.

Q3. Can A robot, B robot, and D robot use Arduino and its expansion kits instead of the Gigo control box?
A3. Yes.

Q4. For Mission 2, if teams prepare their own picture cards or white paper, are there size limitations?
A4. Self-prepared paper is allowed, but must be A4 in size. No other sizes are

permitted. The organizers will also prepare the materials. In principle, for each new team that comes up, we will replace the A4 sheet with a brand-new one.

Q5. In Mission 5, must the large meteorite pass through the disinfection zone before being placed in the scoring area?

A5. There is no restriction. However, in the Junior High and Senior High School groups, the small meteorites can only be scored after the large meteorite passes through the disinfection zone.

Q6. In Mission 6, can the hydrogen fuel tank's initial position extend beyond the green platform (partially on the platform and partially hanging)?

A6. A slight overhang is acceptable.

Q7. Can the blue side of the hydrogen fuel tank be facing up at the start?

A7. No. Because the scores differ depending on whether the blue side is facing up or not. At the initial placement, only the yellow side may face up; the blue side must not face up. In the scoring zone, if the blue side is facing up, it earns 25 points; if the blue side is not facing up, it earns 10 points.

Q8. If the battery only shows a model number without voltage, can a datasheet be submitted to prove its specs?

A8. It is not acceptable to simply download information online and claim the battery is qualified. However, official documentation matching the battery’s serial number will be accepted.

Q9. Before the competition starts, if the automated platform stays within the green frame’s orthogonal projection, can props extend beyond the grey base grid onto the ground?

A9. Yes. In principle, we do not interfere with the range you extend outward after we start the competition. However, before the competition starts, you must not exceed the green frame. After the competition begins, extending outward through remote control or other means is allowed.

Q10. Can an R4M robot use two infrared remote controls and motors?

A10. The number of infrared remotes is not limited, but the number of motors must follow the official regulation.

Q11. Does the red rod (fuel stick) need to start within the black-and-yellow lines?

A11. As long as a small part of the red stick is placed on the printed stone pattern, it's acceptable—direction and orientation are not limited.

6. GreenMech Basic notice-Steven

The competition time follows the usual schedule. Teams must complete check-in before 8:20 AM, and materials will be inspected starting from 8:00 AM. A reminder that teams in the Basic Group are not allowed to use electricity (see Section 7.3.3.1 of the regulation). No household items are allowed. All parts must be disassembled and placed neatly.

7.3.3.1 Contest Tasks: Each team should design and correctly connect 4 basic devices and 1 designated device without using electricity.

7.3.3.2 The order of tasks will be drawn on the day of the competition. (Elementary school teams will not draw; junior high school teams draw for Task 1; high school teams draw for Tasks 1 and 2.)

7.3.3.3 Teams must bring their own materials: six small balls (7330-W11-M1B) and three racing tires (1115-W85-F2B).

It is recommended that contestants prepare more than six balls in case of loss during operation or testing.

Track Mechanism Task

Teams must release two self-prepared balls in sequence to roll down the track.

One ball must fall vertically more than 30 cm, and the other must move horizontally more than 30 cm.

Before scoring, the team must inform the judge which ball is vertical and which is horizontal. The judge will measure the movement based on the starting and ending positions.

Pulley Task

Use a pulley system to vertically lift one object by 30 cm. The lifted object must directly trigger the next task. The object may be a ball or a block. The evaluation is based on the distance between the start and end positions of the object.

Hydraulic Task

Use a hydraulic mechanism to lift three racing tires more than 5 cm in a single motion. The racing tire includes the structure on top of the tire or the string connected above the tire. The key point is that the connecting item must be on top of the tire. Judges will assess whether the structure on the racing tire is connected to the next mechanism, in which case it is considered part of the racing tire.

Designated task: Ball Throwing Device

The device must throw two balls at a time, repeated three times. After the smoothness score has been awarded, the landing score for the first launch of the designated task will be recorded. The second and third launches need only be triggered by the last action of the previous device. Scoring will only occur if the second and third launches are automatically launched. The target must be placed in the bottom-left corner, and the projected distance from the throwing position to the target area must be greater than 90 cm, and the final score will be calculated based on the landing positions of all six.

Scoring Dimensions

Scoring includes fluency and the number of completed tasks.

Please label each task (labels 1–5). You may use the labels provided in the regulation or create them by hand. Ensure labels are filled in clearly.

Judges will then evaluate four tasks based on the task content and mechanical sophistication.

Designated Task Total Score: 43 Points

Judges will first determine whether the task was automatically triggered and whether any unauthorized object was touched.

Then, the landing points of the six balls will be totaled.

If a ball lands on another ball or a 5-hole dual rod, it will receive 1 bonus point for stacking.

Target Zone Reminder

Teams must create their own target zone, which should be placed in the lower left corner of the work area (the same corner where the team label is placed).

Please ensure students position the target correctly.

Scoring smoothness

After the first throw, the team should proceed to the second and third throws.

To trigger the throw, reset the final motion of Task 4.

After scoring, students must confirm their final scores with the judges.

Training Suggestion

It is recommended that each team member be responsible for 1–2 task sections. During the evaluation, there will be at least two judges evaluating different sections. Each student should clearly understand and be able to present the tasks they are responsible for.

Q1. Is a scientific concept scoring sheet required on the table for GreenMech Basic Group?

A1. The Basic Group teams do not need a scientific concept scoring sheet. Only the Advanced Group does. The Organizer will place the scientific concept sheets on the Advanced Group team tables; teams do not need to prepare them.

Q2. Where will the GreenMech Group compete—on the first floor or another level? Is there an elevator?

A2. The GreenMech Group competition will be held at the 2F Basketball Court in the gymnasium. Entering through the main entrance is equivalent to arriving at the 2nd floor; no stairs are required.

Q3. In the track task, can the horizontal movement section be slightly inclined?

A3. Yes, inclines of 45 degrees or any angle are allowed. Contestants must inform the judge which ball is intended for horizontal movement. Judges will measure the

horizontal distance from start to end. A horizontal displacement over 30 cm is acceptable. Judges must be told which ball follows a horizontal path and which follows a vertical one.

Q4. In the Basic Group, how is the 43-point total for the designated task calculated?

A4.

1. **All six balls landing in the four-point zone: 24 points**
2. **All three launches triggered automatically: 6 points**
3. **All three launches meeting the "no-touch" condition: 9 points**
4. **Each ball landing stacked on another ball earns an extra 1 point; if four balls are stacked, an additional 4 points can be earned**
5. **The maximum combined score is 43 points.**

Q5. What does no contact condition mean?

A5. In the designated task, each of the three throws uses two balls. For a ball to score, it must hit or land in the target zone. Judges will determine whether a ball hits or enters the zone without first touching other objects (e. g. , ground, blocks). If a ball hits something else before entering the scoring zone, the no contact point is lost. If it enters cleanly without touching anything, full points are awarded.

Q6. In the Basic Group, for the designated task: One ball must trigger the next task. Can this happen during motion, or must it travel 30 cm before triggering?

A6. Judges will check the final landing spot. If the horizontal distance reaches 30 cm and the ball triggers the next task during movement, it is valid.

Q7. Regarding the scoring item mechanism sophistication—in the track task, does this apply only to the track, or also other structures like levers?

A7. The track may include various mechanisms—not just the track itself. All components in the task area are considered. Sophistication is judged based on these overall elements.

Q8. Will there be extra points in the Basic Group for storytelling or themed designs?
A8. No. The Basic Group is judged only on structural sophistication and smoothness—not story or theme.

Q9. What should be included in the Basic Group's task explanation? Should the story/theme be included, or just scientific concepts?
A9. The explanation should focus on the sophistication of the mechanisms. Storytelling or themes are not included. Basic Group is evaluated purely on structural sophistication.

Q10. Does the Basic Group earn bonus points for using additional materials?
A10. No bonus is given. Only raw materials that are processed on-site may be used. Pre-cut, pre-laminated, or pre-built materials may result in point deductions.

Q11. For the Basic Group's sophistication score, are there detailed standards? Will use of stories, themes, or extra materials affect the sophistication score?
A11. Sophistication is judged by mechanical actions—more complex actions earn higher scores. Example: A ball rolls down a slope. If a flipping track is added to change its direction, the work is considered more complex than a simple drop. Stories, themes, or extra materials do not count toward this score.

Q12. Can the GreenMech Basic Group use 3D-printed parts?
A12. No. The Basic Group may only use additional materials processed on-site. Since 3D printing cannot be done live at the venue, it is not allowed.

Q13. In the pulley task, students are asked to vertically lift an object 30 cm using a pulley. If a fixed pulley is tied to one side of a lever as the effort point, and when the task starts, the effort end rises more than 30 cm, but the lever itself is not lifted, does this still count as a successful pulley lift?
A13. Yes, this is acceptable. However, since the mechanism may be relatively simple, the sophistication score for this part might not be high.

Q14. How can a team know if all the judges have finished scoring them?
A14. Before scoring, judges will explain the scoring criteria to be evaluated. Teams

may record all scoring criteria themselves to track which have or have not yet been assessed. For scores related to smoothness and scientific concepts, the judge will have students confirm and sign immediately after evaluation.

- **First: smoothness of motion (e. g. , how smoothly the ball rolls)**

- **Second: the four task structures**
  There are usually two sets of judges. Players are responsible for recording which parts have been judged and which remain.

Q15. GreenMech-Basic teams are allowed to use extra materials but must process them on-site. Can they use raw materials like paper and tape?
A15. Yes, using paper with tape is acceptable. Basic teams may cut or paste materials on-site. However, it is recommended to use building blocks only, as scoring focuses on mechanical design. Artistic decorations will not earn extra points and might even result in point deductions. Extra materials do not increase scores.

Q16. Question from Thailand: For GreenMech-Basic, can devices 1 to 4 use electricity?
A16. For the basic group no electricity is permitted, so tasks one to four will not involve any powered devices.

Q17. The chief judge mentioned that for the hydraulic mechanism, there are distinctions between above-the-racing tire and below-the-racing tire setups. For example, placing a lever below the racing tire increases complexity. Is it allowed to use blocks below the racing tire to trigger the next mechanism? For instance, designing a lever to sequentially activate the horizontal or vertical ball section? I previously understood that adding complexity below the racing tire was allowed, but hearing about the distinction between above and below the racing tire makes me concerned.

A17. The regulation specifies that the hydraulic mechanism must lift the racing tire to trigger the next device. Here, we allow some flexibility: it is acceptable for either the

racing tire or an object on the racing tire to trigger the next device. However, if a lever lifts the racing tire, it means the lever—not the racing tire—is triggering the next device, which is not allowed. It must be blocks on top of the racing tire or components connected to the racing tire that trigger the next mechanism; this aligns better with the regulation's requirements. As for adding complexity to the lever mechanism below the racing tire, that is not a problem. In summary, it must comply with the regulation: the tire must be lifted to trigger the next device.

Q18. If the designated ball on either the horizontal track or the vertical track passes through a broken section of the track, will it be considered invalid?

A18. The judges assess the horizontal and vertical distances from the starting point to the endpoint, so there should be no issue with the evaluation.

Q19. Are children responsible for scoring the target area?
A19. The scoring process for launching is: after the judges evaluate the smoothness, they will specify the task, and it will automatically launch 2 balls the first time. Then, the contestant must reset to the last action of device 4 and trigger the second launching. Next, the contestant does the second reset and triggers the third launching. Finally, the judges will check the scores of the 6 balls' landing positions.

During this process, balls may fly out; the judges will remind the contestant how many points the ball that flew out gets—it may hit the target area for 2 points or miss it for 0 points—and will also determine whether it touches other objects. After the three launching attempts, the judges will calculate the score, and the contestant must confirm and sign. This is the scoring process for the target area.

During the three launching attempts, the judges will remind the contestant if a ball flies out or drops, and how many points it gets. Contestants must bring more than 6 balls, because once a ball flies out, it will not be retrieved, so the final positions of 6 balls can be determined.

Q20. Will students be informed of the scores for Demonstrate the corresponding scientific principle and Sophistication for each task?

A20. No they won't.

Q21. According to Competition Rule 7.2.3.(4), the competition allows the use of 3D-printed and laser-cut parts. Each part must be within 4cm x 4cm x 4cm and must be in an unassembled state; if these requirements are not met, 5 points will be deducted. Since it does not specify which group this applies to, does this rule apply to both the advanced and basic groups?

A21. The basic group has a condition that if extra materials are used, they must be "raw materials," and raw materials must be processed on-site. Therefore, 3D printing clearly does not meet the requirement of on-site processing of raw materials.

7. GreenMech Advanced notice-Steven

- **The Advance Group theme can be freely created. You may choose your favorite special themes, such as cartoon characters, comic characters, or daily life stories, etc. , to fully express your creativity. However, this time the Creative Device must use the concept of 3R. 3R means reduce, reuse and recycle. Therefore, the competition theme is self-created, but the Creative Device must apply the 3R concept.**

- **The competition work includes 8 devices. Remember to label the devices not only with numbers 1 to 8, but also to mark 3 Green Energy Devices with the character"G"and 1 Creative Device with the character "C". Otherwise, the devices cannot be scored.**

- **Green Energy Devices cannot be arranged as devices 1 or devices 8 because Green Energy Devices must be able to trigger the next device, so they can only be arranged from device 2 to 7.**

- **There are 3 Green Energy Devices in total, each worth 8 points. Please note that besides meeting the content requirements, the Green Energy Device must be able to trigger the next device. The first successful trigger scores 5 points, the second successful trigger scores 3 points, and failure to operate scores 0 points.**

- **The Green Energy Device and Scientific Concept can be adjusted within five minutes. Please reset the 3 Green Energy Devices and ensure they can successfully trigger the next device for scoring.**

- **Please pay special attention to the Creative Device, which must meet the 3R concept and include 3R description content. The designated material to use is plastic bottles(of any brand). The use of plastic bottles can be for decoration or using its structure as a container, or modified to become part of a mechanism. Different uses will result in different scores.**

- **Uniqueness score: The mechanisms have distinctive features and differ from those of other teams.**

- **Sophistication score: The mechanism actions are diverse and the design difficulty is higher.**

- **Theme score: The design fits the 3R goal clearly explained, including the use of the designated materials.**

- **The overall mechanism design mainly judges the mechanism design; the overall appearance accounts for a smaller percentage of the score. Teams can focus more on the mechanism design for higher scores.**

- **The Design concept of mechanisms and storytelling is designed to match the design theme.**

- **Children who deliver the explanation entirely in English will receive English speaking points.**

- **The Scientific Concept should be filled out mainly by ticking the items in the Scientific Principles Reference Table. If you want to write other concepts, please ensure the Scientific Concept is clear; otherwise, if the direction is unclear during confirmation with the judges, the team might not get points. It is therefore recommended to tick the already listed Scientific Concepts in the table, as there are only 4 ordinary devices and 8 Scientific Concepts in total. The basic points must be earned here.**

- **The collection time for the Scientific Principles Reference Table is 11:00 AM. Please ensure children fill it out properly and they can start filling it after check-in. The staff for the Scientific Concepts will collect them at the table, and the final confirmation is by the judges.**

- **The scoring for Creative Device and storytelling will be based on the children's direct explanation. The judges will not have a dialogue with the children nor collect any materials. Contestants and teams should focus on practicing their explanation of the design.**

Q1. For the Advance Group storytelling part, do the contestants just explain their explanation immediately in English without waiting for the judges instruction?

A1. After the judges arrive, they will first inform the contestants that the storytelling scoring is starting, and ask the contestants to begin their explanation. In principle, the judges will not have any other dialogue or guidance and will only proceed with scoring.