

**2016 World Bond Robot Contest  
GreenMech World Cup  
Rule Book**

# **Organizational Board**

## **Advising Board**

*K-12 Education Administration, Ministry of Education, Taiwan*

## **Organizers**

*National Taiwan Normal University*

## **Co-Organizers**

*Taiwan Creativity Development Association*

*Genius Toy Taiwan Co., Ltd*

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## **Chief Executors**

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# 2016 World Bond Robot Contest – GreenMech World Cup Rule Book

## 1. Introduction

The goals of the chain-reaction contraptions tournament “2016 World Bond Robot Contest” (the Contest) are to cultivate elementary and high school students’ understanding of green energy technology and to extend their interests towards creative science. In the Contest, students will integrate creative ideas into their creations of chain-reaction contraptions. Thus, their abilities of ingenuity and creativity on mechanical and structural design will be inspired.

The Contest incorporates STEAM, which applies the president of the United States of America, Barack Obama’s education belief, STEM (Science, Technology, Engineering, and Mathematics) as the foundation along with Art. STEM is a national and comprehensive education program, which focuses on talent inspiring, and with the help of such program, scholars and teachers can enlighten students to develop their intellectual abilities.

In **Science**, the process of assembling physical objects helps students to understand new knowledge and motivates students to apply scientific principles they have acquired from their education. Regarding **Technology**, the goal is to teach students energy technologies, transportation technologies, and electronic technologies which educate them so that they can practically utilize information technologies to carry out more communication, and meet the objectives of putting science into practice. Regarding **Engineering**, when students are involved in multiple operating processes, they need to find a way to utilize the mechanical structures and ensure objects operate appropriately. Regarding **Art**, through the design and assembling of the contraption, the students are trained in their artistic and creative sensibilities and they learn to cultivate a sense of aesthetic appreciation. Finally, regarding **Mathematics**, students should take advantage of mathematical formulas when designing the proportions and symmetry in their creations. Mathematical skills will benefit students to successfully control the power balance of objects and inspire them to implement mathematical concepts in scientific experiments.

Furthermore, the World Bond Robot Contest is also beneficial to the environmental and engineering education and culture, character and development for today’s students, because assigned themes for the juncture settings will inspire them to adopt a significant amount of information relating to Environmental Education and Engineering Applications. In the process of storytelling juncture design, students will be able to learn about their own culture (cultural domains), and it will help them to develop their character and creativity. The Contest is also a positive catalyst in intensifying teacher-student relationships and parent-child relationships. Under the guidance of parents and teachers, the students will be able to collaboratively discuss, design and build the chain-reaction contraptions. In conclusion, the goals of implementing and promoting students’ education can be reached with the support of the World Bond Robot Contest.

## 2. CONTEST CONTESTANTS AND DIVISIONS

**2.1. Contest Divisions:** The *World Bond Robot Contest: GreenMech World Cup* is split into three divisions: *Elementary School Division* for students from grades 1 to 6, *Junior High School Division* for students from grades 7 to 9, and *Senior/Vocational High School Division* for students from grades 10 to 12.

**2.2. Organizing a team:** Each team is required to have 4 Contestants.

**2.2.1. The Absence of a Contestant** If a Contestant is absent, a letter of absence from the corresponding school principle or a supervising educational authority is required. Contestants that do not attend the Live Evaluation cannot receive any award or certificate. An absent Contestant who does not submit a letter of absence will be disqualified from the Taiwan Regional Contest and World Contest. A team with an absent member is not permitted to add a new member to replace the absent member.

**2.2.2. Replacing a Contestant** Replacing Contestants is forbidden. Any team that is found with a personated member who is not registered will be disqualified immediately.

**2.3. Supervisor:** A team should have at least one supervising teacher (four at most).

## 3. CONTEST SCHEDULE

**3.1. Live Evaluation Date: July 30, 2016.**

**3.2. Award Ceremony:** The 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> Prize and Special Awards will be announced by the end of the Live Evaluation day. The Excellence of School Performance Award will be announced on the Contest website within 2 weeks after the Contest. Certificates will be mailed within 2 months after the prizes are announced.

## 4. REGISTRATION

**4.1. Eligibility:** To be eligible for the Contest, Contestants must be a full-time student in grades 1-12. One team must have 4 Contestants. Teams are permitted to have members of different ages or members from different schools. Each team is assigned to a division according to the age of the eldest member.

**4.2. Advisor:** Each team may have 4 Advisors at most. Each Advisor should instruct in one of the four following areas: Media Production, Contraption Designing, Contraption Structure or English.

**4.3. Contraption/Team Name:** The contraption must be given a title in English. The title will also serve as the name of the team. Teams are not permitted to name the contraption after their school name.

**4.4. Names in English:** For teams from Taiwan, Contestants and Advisors should provide official *Romanized* names (i.e. spelled in English alphabets) in their registration documents. For teams from overseas, please provide the name in English according to the passport. All teams are also required provide the school names in English. The award certificates will be printed in English.

**4.5. Submission:**

**4.5.1. Registration Form: Teams that wish to participate in the Contest have to complete: (1)** registration form at the official website (<http://www.gogreenmech.org/>) (for an example of the form, please refer to **Appendix 1**). The registration page is open for editing any time before the submission due date. **(2) Team Introduction and Photos:** Each team must submit two photos (in JPEG file format) showing all team members and a team introduction in English (no more than 300 words) before the submission deadline. Teams that do not submit both the photos and

the introduction will not be listed in the Contest Handbook. The Contest Organizers reserve the right to delete words from the introduction if the word limit is exceeded. (3) **Contraption Creativity Portfolio:** In order to speed up the evaluation process, each team must provide a description of their design according to the “**Contraption Creativity Portfolio**” (please refer to **Appendix 3**) in **English** and submit it by the deadline. Submissions that do not include the Contraption Creativity Portfolio are incomplete and hence cannot enter the Contest. (4) **Property Rights (Copyright) Authorization Form:** To complete the submission, Contestants must agree to authorize the intellectual property rights of their creations in the Contest to the organizers in the registration process. Teams must ensure that their creations do not infringe the intellectual property rights of others. All teams must guarantee that their self-created creations would not infringe upon the intellectual property rights of others. A copy of the **Property Rights (Copyright) Authorization Form** (please refer to **Appendix 4**) must be submitted to complete the registration procedure.

✧ Check-in for Contest: The check-in for the Contest may use QR Code (QR Code will be shown after registration is completed on the website). Once registration is complete, the information cannot be changed. If you wish any information after the registration period ends, you will need to pay a processing fee of 500 NTD. Please confirm all information before the registration period ends.

**4.5.2. Registration Period:** Registration is open from **10 June 2016 (8:00 am, Taiwan time (GST+8))** to **24 June 2016 (5:00 pm, Taiwan time (GST+8))**.

**4.5.3. Property Rights (Copyright) Authorization Form:** To complete the submission, Contestants must agree to authorize the intellectual property rights of their creations in the Contest to the organizers in the registration process. Teams must ensure that their creations do not infringe the intellectual property rights of others. All teams must guarantee that their self-created creations would not infringe upon the intellectual property rights of others. A copy of the **Property Rights (Copyright) Authorization Form** (please refer to **Appendix 4**) must be submitted to complete the registration procedure.

**4.5.4. Team Introduction and Photos:** Each team must submit two photos (in JPEG file format) showing all team members and a team introduction in English (no more than 300 words) before the submission deadline. Teams that do not submit both the photos and the introduction will not be listed in the Contest Handbook. The Contest Organizers reserve the right to delete words from the introduction if the word limit is exceeded.

**4.5.5. Contraption Creativity Portfolio:** In order to optimize the evaluation process, each team must provide a description of their design according to the “**Contraption Creativity Portfolio**” (please refer to **Appendix 3**) in **English** and submit it by the set deadline. Submissions that do not include the Contraption Creativity Portfolio are incomplete and hence cannot enter the Contest.

**4.6. Document Submission Deadline:** Please upload the documents above to our official website. (<http://www.gogreenmech.org/>) before **5:00 pm, June 24, 2016 Taiwan time (GST+8)**.

**4.7. Video for Evaluation:** Each team must prepare 1 **video** in English to introduce the operation of the whole contraption, and it must include the following the 4 evaluation criteria to introduce their contraption and explain the operation of specific junctures (please refer to **5. Evaluation**): (1) **Scientific and Mathematical Application** (2) **Pathway Diversity** (3) **Green Energy Resource and**

**(4) Design and Cultural Creativity.** Each video must be no longer than **3 minutes**. We recommend the use of English subtitles to help viewers understand. Videos that exceed the **3 minute** time limit will be automatically filtered out by the system. The content of the video must correspond with the physical contraption itself.

Videos must include the operating process of the contraption. The video files should be saved as mp4 or rmvb media file format and uploaded to the Contest website. Each video file should **not be larger than 300 Mbs**.

**\*Note: English** is the official written and spoken language of the Contest. Contestants should complete the registration documents, produce the video, and present their contraption in English. At the live evaluation, the judges will also communicate in English.

**4.8. Video Submission Deadline:** Please upload the video to the Contest official website.

(<http://www.gogreenmech.org/>) before **5:00 pm, June 18, 2016 Taiwan time (GST+8)**.

**4.9. Registration Fee:** Each team must pay a \$100 USD registration fee before **5:00 pm, July 3, 2016 Taiwan time (GST+8)**. Please attach the receipt to a filled **Payment Form** (see **Appendix 5**) and send it to us by email or fax. We will send a confirmation mail to you after receiving the form. (Fax: 886-2-2394-6832; E-mail: [ccdamech@gmail.com](mailto:ccdamech@gmail.com)).

Bank: Bank Of Taiwan

Branch: Fuhsing Branch

Swift Code: BKTWTWTP055

Bank Account Number: 055007003149

**4.10. Contest Souvenir T-shirts: Contestants can choose to purchase Contest souvenir T-shirts. If the Contestants choose to purchase souvenir T-shirts, they must purchase as a team. The Contest souvenir T-shirt will cost approximately \$200 NTD each.**

**4.11. Notice:**

**4.11.1.** All registration documents and files should be uploaded to our official website before the due dates listed. Documents or files will not be returned once uploaded. Contestants should keep their own copy if needed.

**4.11.2.** Please check the Contest website for any new notices.

## 5. Evaluation:

**5.1 Evaluation Criteria:** The evaluation is divided into the following eight criteria: (1) Scientific and Mathematical Application (2) Scientific Method and Creativity (3) Pathway Diversity (4) Green Energy Resource (5) Environment Conservation Application (6) Design and Cultural Creativity (7) Engineering Reliability and (8) Assigned Material Application. For details, please refer to **Table 1**.

**Table 1. Evaluation Criteria**

Assessment Criteria	Percentage Breakdown	Description
<b>Scientific and Mathematical Application</b> <u>【Science, Math】</u>	Video Evaluation <b>15%</b> Live Evaluation <b>5%</b>	<ol style="list-style-type: none"> <li>1. Video Evaluation (15%): The total number of scientific principles used will be counted. Each type of scientific principle is counted only once.</li> <li>2. Live Evaluation (5%): The number of principles and junctures used.</li> </ol>
<b>Scientific Method and Creativity</b> <u>【Science, Creativity】</u>	Live Evaluation <b>10%</b>	Contestants can assign two junctures at most for evaluation. The juncture is evaluated based on its complexity and originality.
<b>Pathway Diversity</b> <u>【Engineering, Math】</u>	Video Evaluation <b>10%</b>	The more complex the pathway from one juncture to another, the better.
<b>Green Energy Resource</b> <u>【Technology】</u>	Video Evaluation <b>15%</b>	<ol style="list-style-type: none"> <li>1. Except for the starting juncture, every other juncture that apply the use of hydro, wind, magnetic, or other green energy sources must be triggered by the previous one. * Solar energy is not an evaluation criterion in this contest. If contestants use solar energy, they will not receive any points.</li> <li>2. The total number of green energy sources used will be counted. Each type of green energy source is counted only once.</li> </ol>
<b>Environmental Conservation Application</b> <u>【Environment】</u>	Live Evaluation <b>10%</b>	<ol style="list-style-type: none"> <li>1. The design of the juncture must be based on the assigned themes for each division and should be placed at the very last part of the contraption.</li> <li>2. The assigned themes for the three divisions are: <ol style="list-style-type: none"> <li>A. Elementary School Division: Landslide. At least ten 2cm diameter marbles have to be collected.</li> <li>B. Junior High School Division: Volcanic Eruption. At least five table tennis balls have to be collected.</li> <li>C. High School and Vocational School Division: Earthquake. An alarm system must be set. Residents should evacuate over ten cm in distance.</li> </ol> </li> </ol>
<b>Design and Cultural Creativity</b> <u>【Art, Creativity, Culture】</u>	Video Evaluation <b>10%</b> Live Evaluation <b>5%</b>	<ol style="list-style-type: none"> <li>1. Video Evaluation (10%): What story does the contraption tell? Show us a storyline, logic, imagination, and creativity through your contraption design.</li> <li>2. Live Evaluation(5%): Overall Appearance of contraption.</li> </ol>
<b>Engineering Reliability</b> <u>【Engineering】</u>	Live Evaluation <b>15%</b>	<ol style="list-style-type: none"> <li>1. All junctures listed in Scientific and Mathematical Application must be successfully launched. 1 point is deducted for every failure to launch. The number of junctions listed in Engineering Reliability cannot be less than the ones listed in Scientific and Mathematical Application.</li> <li>2. 1 point is deducted every time there is a human contact on the contraption.</li> </ol>



		<p>Another 1 point is deducted for every fall of a part from the contraption.</p> <p>3. If human contact is chosen to re-launch a juncture, one must start from the previous juncture. For example, if the fourth juncture failed to launch, one must re-launch the third juncture.</p> <p>4. The team is allowed to restart the contraption within the 2 minutes judging time. Once the 2 minutes are up, the Engineering Reliability will be evaluated by the last run. 1 point will be deducted for every failure in launching a juncture.</p> <p>5. There must be at least 10 junctures for the Elementary Division, 13 junctures for the Junior High School Division, and 15 junctures for the High School and Vocational School Division. 1 less juncture than the required amount will result in 2 points deduction.</p>
<b>Assigned Material Application</b> <u>[Science, Technology, Creativity]</u>	Live Evaluation 5%	Teams must add the assigned material in the juncture design, and it must successfully launch the next juncture.
<b>Notes:</b>		
<b>Explanation Of Grading In A Single Criterion:</b>		
<b>For each criterion, the highest scoring team can get the full score for the criterion. The points of the highest scoring team (of that particular criterion) will be used as the denominator for calculating the score of other teams for the same criterion. The scores of the eight evaluation criteria will be added up to produce an overall score.</b>		
<b>Example Of Grading In A Single Criterion:</b>		
<b>In the Scientific Application criterion, the highest scoring team A earned 16 points, and team B earned 12 points. Because that the Scientific Application criterion accounts for 20% of the grading of the contest, as the highest scoring team, team A receives the whole 20%. Team B receives <math>(12/16)*20\% = 15\%</math> for this criterion.</b>		

## 5.2. Materials and Assembly Restrictions:

**5.2.1. Base Area:** The base area of the contraption must not exceed *180cm in length and 60cm in width*.

If there are any overhanging parts to the contraption, which are within 1 meter high of the table, these overhanging parts must not protrude from the base area by more than 20 cm.

However, there is no overall height restriction for the contraptions.

The contraption must be robust and stable enough to be presented on exhibit tables provided by the organizers.

**5.2.2. Parts:** Teams must bring their own unassembled parts and are welcomed to bring additional materials that meet the Contest guidelines. Please visit the Contest website to see the recommended Learning Lab building blocks: The *Brick Contraption Sets* (#1248, #1249), the *Technology Explorer Sets* (#1244, #1245), the *Scientific Experiment Sets* (#1234~#1243), and the *Creative World Sets* (#1230~#1233).

Tip: Teams should write their team name on their base board and parts to prevent them from being lost.

**5.2.3. Other Materials:** Non-commercial products and unassembled raw materials are allowed in this Contest. For example, pieces of wood, aluminum cans, old clothes, etc.

**5.2.4. Base Board:** Teams must prepare their own base boards. There are no restrictions on how many boards a team brings. It is suggested that teams prepare new boards which offer good stability. Boards must not exceed the base area limit.

**5.2.5. Toxic and Hazardous Materials:** All materials must meet national safety and non-toxic standards. The recognized standards are as follows: CE (Europe), ASTM (United States of

America), ST (Taiwan), and CCC (China). If a material that does not meet any of the standards above is found to be used in or brought to the Contest, the team will be disqualified.

**5.2.6. Programming:** Neither programming language nor visual programming is allowed to be used in the Contest. Teams that utilize either programming language or visual programming will be disqualified.

## 6. Criteria of Evaluation:

### 6.1. Evaluation Principles:

**6.1.1. Scientific and Mathematical Application:** The total number of scientific principles used. Each principle is counted only once.

**6.1.2. Scientific Method and Creativity:** Each individual team can appoint 2 junctures at most for evaluation. These junctures are evaluated on their creativity and originality at the Live Evaluation.

**6.1.3. Pathway Diversity:** The more pathways between one juncture to another, the better. All pathways should be able to function.

**6.1.4. Green Energy Resource:** Junctures that apply the use of green energy (e.g. solar, wind, hydro, magnetic power) are under this criterion. All Green Energy Resource junctures have to be launched by the previous juncture, except for the starting juncture. For instance, if a wind juncture is launched by blowing air through one's mouth, then this juncture will not earn any points. The same applies for opening the light manually when reaching the solar juncture. Points will be earned based on the effect of the green energy force.

**6.1.5. Environmental Conservation Application:** Teams must simulate the assigned disaster with their contraption. Both an alarm system and disaster response have to be included. The assigned disaster for each division is as follows:

**A. Elementary School Division:** Landslide.

**B. Junior High School Division:** Volcanic Eruption (For example, to sound the alarm with vibration, or erupt table tennis balls...etc.)

**C. Senior/Vocational High School Division:** Earthquake.

The Environmental Conservation Application junctures should be placed at the very end of the contraption. Teams are evaluated for the outcome of their juncture's performance, e.g. the number of table tennis balls collected.

**6.1.6. Design and Cultural Creativity:** This criterion includes Story Design and Overall Appearance. Contestants should explain the contraption's story and design to the judges in the video.

### 6.1.7. Engineering Reliability:

**A. The Total Amount of Junctures** in the Live Evaluation must not be less than in the video. Teams should attach Juncture Name Cards (refer to **7.2.6. Juncture Name Cards**) on each juncture for recognition. Each missing juncture will result in deduction of 2 points.

**B. The Operation of the Contraption** from start to end should be explained to the judges at the Live Evaluation, before starting the 2 minutes countdown. Only the first juncture can be launched manually. All others, including the Green Energy Resource junctures, have to be launched by the previous juncture.

**C. Operating Time Limit** for this criterion is 2 minutes. If the contraption fails to finish the run, Contestants can, within the 2 minute time limit, choose to: (1) start again from the previous

junction (e.g. the third junction should be re-launched if one fails to launch the fourth junction); or (2) start from the beginning. Teams will be evaluated according to the outcome of the last run. If the contraption is still operating when the 2 minute time has ended, the unlaunched junctions will each be responsible for a 1 point deduction. 1 point is deducted for each human contact on the contraption (e.g. pushing a stuck marble) and for every fall of a part from the contraption.

**D. Dummy Proof:** Before starting the 2 minute countdown, Contestants should point out the junctions that contain dummy proof designs to the judges. As long as the next junction is successfully launched, no points will be deducted even if one or more of the dummy proof pathways fails to deliver.

**E. A Flag Code** is used to indicate the occurrence of dropping or falling of part(s) and human contact violation. Each rise of a red flag represents dropping or falling of part(s) and a yellow flag represents a human contact.

**F. Restarting:** Contestants must ask for the judge's permission before restarting the contraption.

**6.1.8. Assigned Material Application:** Teams must adjust their designs to contain the assigned material (which will remain unknown until the Live Evaluation). Junctions should still be able to work after applying the assigned material. Contestants only need to demonstrate the junction that contains the assigned material.

\*Assigned materials and related instruction will be given to contestants after check-in.

## 6.2. Violations:

**6.2.1. Human Contact:** 1 point is deducted for every human contact on the contraption, excluding the launching of the first junction. For instance, if Contestant uses their hand to move a stuck marble, this will cause a 1 point deduction for their team.

**6.2.2. Falling Parts:** 1 point is deducted for every fall of a part.

**6.2.3. Base Area limit:** If the contraption exceeds the *180x60 cm* base area limit, 2 points will be deducted from the team's overall score.

**6.2.4. Contraption that does not correspond to video:** If the contraption does not correspond to video, 0.25 points will be deducted from the overall score for each junction that is different from video. (Extra junctions will not receive any bonus score.)

**6.2.5. Teams must keep their working area tidy.** Messy work area such as water on the floor and/or rubbish around the work area may result in 1 to 10 points deduction to the team. It is each team's duty to prepare cleaning supplies.

**6.2.6. Hazardous Materials** such as fire, corrosive chemicals, dangerous electrical parts, living creatures and over use of light and sound effects are strictly prohibited. Teams found to have hazardous material brought or used in the Contest will be disqualified.

**6.2.7. Limited Access:** Unpermitted persons including Advising Teachers/Parents shall not enter the contest zone or deliver objects or messages to the Contestants. Teams that violate this rule will be disqualified.

**6.2.8. Protest/Objections Regarding Scoring:** Teams that do not attend the Teachers' Conference held on the Live Evaluation Day will not have the right to protest or raise objections regarding the Contest. If Contestants or Advising Teachers protest or object to team scores without reasonable grounds and disrupt the Contest agenda, the team will be automatically disqualified from the Contest. Contestants and Advising Teachers should respect the judges' final decisions. If there are any questions or objections regarding the team's score, it should be raised

immediately during the Contest with the chief judge, for the chief judge to investigate at the Live Evaluation. After the scoring process, each team is required to sign a Result Confirmation Form. After the Contest, the Contest Organizer will not consider any further protest or objections regarding team score.

### **6.3. Other Important Notices:**

**6.3.1. The Recognition of a Green Energy Resource Juncture** is determined by the use of Green Energy Resource parts. As long as the juncture includes the use of Green Energy Resource parts, it is regarded as a Green Energy Resource juncture.

**6.3.2. Re-launching:** Points will be deducted only once for multiple re-launch attempts at the same place.

**6.3.3. Evaluation Results:** Teams can login to the team account on the official Contest website to view results after the Live Evaluation.

**6.3.4. Protest/Objections:** Any protest or objection regarding team score must be raised with the chief judge at the Live Evaluation. After the Contest, the Contest Organizer will not consider any protest or objections regarding team score.

**6.3.5. Each Sound Controlled Junctures** have only one launching chance. These junctures must all be launched by their previous junctures automatically. Note again, only the first juncture can be launched manually.

## **7. Live Evaluation Regulations**

**7.1. Personal Belongings Check:** After check-in, contestants should immediately enter the Contest zone. The contest staff will check tool boxes, personal belongings, tools (including assembled parts), and hazardous materials. If contestants have any forbidden materials, the team will be disqualified.

**7.2. Contraption Assembly:** Only chains can be assembled in advance. All other parts of the contraption should be built onsite in the time given.

### **7.3. Demonstration Notices:**

**7.3.1. Demonstration Length:** Each team has 3 to 5 minutes of time, depending on the total amount of teams, to introduce the team and design, demonstrate the contraption, and answer questions from the judges.

**7.3.2. Final Adjustment:** Teams should be ready for an item inspection before entering the Contest zone to make final adjustments on their contraption before the Demonstration. Teams have 10 minutes to make final adjustments to their contraption before the Demonstration. Teams that do not complete final adjustments within the 10 minutes may be disqualified from the Contest.

**7.3.3. Launching a juncture:** All junctures, including the Green Energy Resource junctures (but excluding the first juncture), must be launched automatically by the previous juncture. No points will be given to the junctures that use non-electrical ways, such as infrared or ultrasound, instead of mechanical ways to launch.

**7.3.4. Falling or Stuck Objects:** Contestants are allowed to use their hand or other objects to free a stuck movable object, for instance a marble or wheel. If a movable objects falls, Contestants should pick up the object and re-launch the previous juncture. Contestants are required to ask for the judges' permission before re-launching the juncture.

**7.3.5. Linking Junctures:** When demonstrating for the Engineering Reliability criterion, restarting the

whole contraption is allowed. Please refer to **6.1.7. Engineering Reliability** for more details.

**7.3.6. Juncture Name Card:** Juncture Name Cards must be attached on each juncture for easy identification. There are four colors in the name card for the World Contest: (A) Blue for Scientific Method and Creativity (B) Green for Environment Conservation Application, (C) Orange for Assigned Material Application, and (D) Beige for juncture number and name. The juncture number and name card should be attached on all of the junctures. Please download the Juncture Name Cards from the Contest official website (<http://www.gogreenmech.org/>). Juncture name cards will not be provided at the Live Evaluation. We recommend teams to seal Juncture name cards with tape to make it water resistant. 1 point is deducted for each missing Juncture Name Card (with maximum deduction of 10 points).

**7.3.7. Evaluation:** Teams will build the contraptions before noon on the Live Evaluation day and demonstrate it for evaluation in the afternoon. The team scoring will be completed according to the three Divisions (i.e. Elementary School Division, Junior High School Division and Senior/Vocational High School Division).

**7.3.8. Result Confirmation:** Contestants are required to sign on the result board to confirm their score on the Engineering Reliability criterion. No complaints may be raised after signing.

#### **7.4. Restrictions at the Contest Site:**

**7.4.1. Power Source:** The Contest Organizer will not provide any power source at the contest site. Teams should prepare their own power source. To keep our planet green, we encourage the use of portable power sources instead of single-time use batteries. Teams are asked to keep the power source safe. Any team causing danger or damage will be disqualified from the Contest and is required to take responsibility for any damage caused.

**Note 1:** Advisors, please train students to safely use power source before allowing them to utilize it in the contraption design.

**Note 2:** Lead storage battery or other large hazardous batteries are prohibited to use in this contest.

**7.4.2. Using Bluetooth:** Bluetooth can only be used for launching. If the juncture is not the first one of the contraption, it should still be launched automatically by the previous juncture.

**7.4.3. No running at the Contest Site:** Contestants caught running around may be disqualified.

**7.4.4. Chairs** are not provided at the Live Evaluation. Teams can bring their own chairs if required.

**7.4.5. Communication Restriction:** During the Contest, Contestants are not allowed to communicate with non-contestants including Advisors or parents in any way. Tablets, mobile phones and notebook computers can be brought to the Contest Zone. However, any team found communicating with non-contestants will be disqualified.

**7.4.6. No Instructing** is permitted during the Contest. Contestants are not allowed to communicate with non-contestants including Advisors or parents in any way (e.g. verbal, non-verbal, using gestures etc.). Any team found violating this restriction will be disqualified.

**7.4.7. Teams Disturbing Others** in any way during the contest may be disqualified.

**7.4.8. Property rights:** Any Contestant or team found by the Contest Organizer to have intentionally damaged, stolen or conducted any fraudulent activity in relation to another team's property will be automatically disqualified from the Contest.

**7.4.9. Decorative Parts,** which are parts that have no function, must be processed before the contest, and brought into the Contest Zone.

Before the Contest, these decorative parts also must not be assembled onto the team's contraption (or parts of the contraption).

**7.4.10. Instructing Materials** are allowed to be brought to the Live Evaluation, for example: a paper or electrical manual.

## 8. Awards

- 8.1. The Spirit:** The Contest Organizers would like to encourage Contestants to show excellent teamwork, and design their contraption to be both creative and workable.
- 8.2. The Prizes** are shown in **Table 2** and **Table 3**. The Contest organizers hold the right to alter the prizes under any conditions (including adding of reducing of prizes) according to the number of teams entered in the Contest and the Contest result.
- 8.3.** The Contest Organizer will provide a list of prize winners to the relevant government department(s) (e.g. Ministry of Education), for issuance of any potential government document.

**Table 2. Taiwan Regional Contest Top 3 Prize**

Rank	Prize	Number of Winners	Award Point
	(Awarded to competing teams)		
<b>Champion (1<sup>st</sup> Place)</b>	Award Certificate, Award prize of 20,000 NTD-dollars and 10,000 NTD-dollars worth of Genius Toys	1 team for each division	5 points
<b>Runner-up (2<sup>nd</sup> Place)</b>	Award Certificate, Award prize of 10,000 NTD-dollars and 10,000 NTD-dollars worth of Genius Toys	1 teams for each division	4 points
<b>3<sup>rd</sup> Place</b>	Award Certificate, Award prize of 5,000 NTD-dollars and 10,000 NTD-dollars worth of Genius Toys	1 teams for each division	3 points

**Table 3. Taiwan Regional Contest Special Awards**

Award	Prize (per contestant)	Number of Winners	Award Point
	(Awarded to competing teams)		
Superior Innovation in the Application of Science (1 <sup>st</sup> Place)	Award Certificate, Award prize of 1,000 NTD-dollars and 1,000 NTD-dollars worth of Genius Toys	1 Team for each division	3 points
Excellence Innovation in the Application of Science (2 <sup>nd</sup> Place)	Award Certificate, 1,000 NTD-dollars worth of Genius Toys	1 Team for each division	2 points
Impressive Innovation in the Application of Science (3 <sup>rd</sup> Place)	Award Certificate, 500 NTD-dollars worth of Genius Toys	1 Team for each division	1 points
Superior Innovation in Green Energy Design (1 <sup>st</sup> Place)	Award Certificate, Award prize of 1,000 NTD-dollars and 1,000 NTD-dollars worth of Genius Toys	1 Team for each division	3 points
Excellence Innovation in Green Energy Design (2 <sup>nd</sup> Place)	Award Certificate, 1,000 NTD-dollars worth of Genius Toys	1 Team for each division	2 points

Award	Prize (per contestant)	Number of Winners	Award Point
	(Awarded to competing teams)		
Impressive Innovation in Green Energy Design (3rd Place)	Award Certificate, 500 NTD-dollars worth of Genius Toys	1 Team for each division	1 points
Superior Innovation in Design and Explanation of Juncture (1 <sup>st</sup> Place)	Award Certificate	1 Team for each division	3 points
Excellence Innovation in Design and Explanation of Juncture (2 <sup>nd</sup> Place)	Award Certificate	1 Team for each division	2 points
Impressive Innovation in Design and Explanation of Juncture (3 <sup>rd</sup> Place)	Award Certificate	1 Team for each division	1 points
The Best Team Spirit Award	Prize (per school)	For each division, the school that earns the most <b><i>Awarded Points</i></b> . 1 school per county/city will be rewarded. <u>If there are less than three teams per county/city, it will not be awarded.</u>	
	Award Certificate + Limited Designed 2016 GreenMech World Cup T-Shirt		
Excellence of School Performance Award	Prize (per school)	For each division, the school that has the most number of award winning teams. 1 school per county/city will be rewarded. At least 3 schools need to participate in the World Cup in each county/city to compete for this prize.	
	Award Certificate + Contest Merchandise		
<b>Note: The above prizes cannot be received more than once.</b>			

**8.4. Honorable Award:** Contestants who do not receive any of the prizes above are rewarded with the Honorable Award. Each Contestant and Advisor will receive an award certificate.

**8.5. Personal Information for Award Winners:** All information should be provided online on the Contest official website (<http://www.gogreenmech.org/>).

**8.5.1. Contestants:** The content (name and school for example) printed on the certificate will be based on the information provided in the **Registration Form (Appendix 1)**. After the submission due date, correction of information will be charged 500 NTD per request.

**8.5.2. Advisor:** The content (name and school for example) printed on the certificate will be based on the information provided in the **Registration Form (Appendix 1)**. After the submission due date, correction of information will be charged 500 NTD per request.

**8.5.3. The Award Recipients' Information** including the mailing address and bank account for the prize should be filled in the **Award Recipient Information Form (Appendix 2)**. A PDF file including a photocopy of both sides of the recipients' ID card and bank passbook cover (for Taiwan Residents), or a PDF file including a photocopy of the recipients' passport cover and identity page (for foreigners) must be provided. After the submission due date, correction of



information will be charged 500 NTD per request.

Note: We do not hold responsibility for prizes which are unable to be sent due to incomplete or incorrect information.

**8.6. Award Ceremony:** There will be an award ceremony at the end of the Live Evaluation day and all prize winners (with the exception of the Excellence of School Performance Award) will be announced at the ceremony. The Excellence of School Performance Award will be announced within 2 weeks after the Live Evaluation Day. Each prize winning team is required to have at least one team member present at the award ceremony to receive the prize. If the prize winning team fails to have one team member present at the award ceremony to receive the prize, the team automatically forfeits the right to claim the prize.

**8.7. Others:**

**8.7.1. Video Recording:** To minimize protests/objections after the Contest, all prize winning teams are required to cooperate with the Contest Organizer to record a video (to be kept as record) showing the team's contraption in action. The Contest Organizer will contact the winning teams about the video recording within one week after the Contest.

**8.7.2. Winners' Duty:** Prize winning teams are required to cooperate with the Contest Organizer and build their contraption at an appointed time and place for live demonstration. The Contest Organizer reserves the right to take back the prize of the winning teams that do not cooperate. (Details will be announced within 1 week of the Live Evaluation)

**8.7.3. Foreign Teams' Duty:** Foreign teams must also cooperate with the Contest Organizers (e.g. recording videos or filming programs).

**8.7.4. Certificate delivery:** The certificates for the award winning teams will be mailed within a month after the Contest. Teams that do not receive the certificates in time should contact the Contest Organizer. A 500 NTD fee will be charged for reprinting one certificate.

**8.7.5. Outward Remittance Fee:** The money transfer fee will be deducted from the prize.

**8.7.6. Tax:** According to the Ministry of Finance's gift tax regulations of Taiwan, foreign winners will have 20% deducted from their award bonus. However, if the 20% bonus deduction amounts to less than 2000 NTD, the prize will be exempted from deduction.

## 9. Legal Information:

**9.1. Insurance:** The Contest Organizers **will not provide** group insurance to cover all Contestants. The insurance will only cover the situations which occur on the date of the Live Evaluation. Contestants and advising teachers/parents are asked to fill out all their correct personal information during registration for insurance purposes. Those who do not fill out correct personal information will not be provided with insurance.

### **9.2. Patents, Intellectual Property Rights, and Creation Property Rights:**

**9.2.1. Intellectual Property Rights:** To complete the registration, Contestants must agree to authorize the intellectual property rights of their creations in the Contest to the Contest Organizers in the registration process by clicking the agreement box in the registration system. Teams must ensure that their creations do not infringe the intellectual property rights of others.

**9.2.2. Authorization Form:** The teams with contraptions that apply ideas or items that did not originate from themselves are required to attach an intellectual property rights authorization form when they submit their creations (please refer to **Appendix 4**).

**9.2.3. Terms and Conditions:** Due to promotion related needs, the Contest Organizers hold the rights to alter, film, publish, create, exhibit, manufacture, and disclose images of all of the Contests' award-winning creations. The award winners cannot object to these duties. If necessary, when the Contest Organizers need to alter the award-winning creation's design, the award-winning team should cooperate with the Contest Organizers by providing relevant pictures and data or information.

## Appendix 1. Registration Form: (All Registration Should Be Completed Online)

Contest	2016 World Bond Robot Contest			
Category:	GreenMech	Division:		Team Name:
Personal Information of Contestants				
Team Member 1	Full Name:		Gender:	
	Date of Birth:		Shirt Size:	
	School:		Grade:	
	ID Number:		Email:	
	Supervisor:		Contact Phone:	
Team Member 2	Full Name:		Gender:	
	Date of Birth:		Shirt Size:	
	School:		Grade:	
	ID Number:		Email:	
	Supervisor:		Contact Phone:	
Team Member 3	Full Name:		Gender:	
	Date of Birth:		Shirt Size:	
	School:		Grade:	
	ID Number:		Email:	
	Supervisor:		Contact Phone:	
Team Member 4	Full Name:		Gender:	
	Date of Birth:		Shirt Size:	
	School:		Grade:	
	ID Number:		Email:	
	Supervisor:		Contact Phone:	
Personal Information of Advisors (All Boxes Must Be Filled)				
	Advising Teacher 1	Advising Teacher 2	Advising Teacher 3	Advising Teacher 4
Full Name:				
Advising Role: ( <i>[A] Media production, [B] Contraption Design, [C] Contraption Structure, [D] English</i> )				
Organization:				
Contact Phone:				
Mobile Phone:				
Email:				

## Appendix 2. Representative Award Recipient Information Form:

Recipient's Name:	
Recipient's ID/Passport Number:	
Mailing Address for Certificate Delivery (Every certificate of one team will be sent to this address) :	
Bank Account for Prize Transfer (Full amount of prize of a team will be transferred to this account):	Account Name: Bank: Branch: Account Number: Swift Code:
Upload Photocopy of ID/Passport (in PDF format):	
Upload Photocopy of Bank Passbook (if there is one; in PDF format):	

# Appendix 3. Contraption Creativity Portfolio

## 3.1. Picture showing Pathway Design for All Junctures

Team Number:	Team/Contraption Name:  (Contestants do not need to follow the example below. Please submit no more than 5 design pictures.)	Moving Directions of Mechanism
		
<b>Juncture 3:</b> (Name of Juncture)		
<b>Scientific and Mathematical Application:</b> <b>Environmental Conservation Application:</b> <b>Assigned Material Application:</b> (Not used)		
<b>Juncture 1:</b> (Name of Juncture)		
<b>Scientific and Mathematical Application:</b> <b>Environmental Conservation Application:</b> <b>Assigned Material Application:</b>		
<b>Juncture 2:</b> (Name of Juncture)		
<b>Scientific and Mathematical Application:</b> <b>Environmental Conservation Application:</b> <b>Assigned Material Application:</b> (Not used)		

### 3.2 Contraption Creativity Portfolio

#### 2016 World Bond Robot Contest Contraption Creativity Portfolio

Team Number	Team Name	Total Number of Junctures in the Contraption

#### Contest Contraption Creativity Portfolio PDF file

Please include descriptions of Juncture Creativity, Diversity, Design and Cultural Creativity, Application of Scientific and Mathematical Principles, Application of Green Energy in the same PDF file.

**Please upload the file through the official website and also include a hard copy of the same file in the registration forms.**

#### Juncture Creativity:

**Please explain the creative concepts behind your design and its performance as a whole.**

**Word Limit: 500 words.**

#### Diversity:

**Please provide descriptions of the junctures demonstrating pathway diversity and how each of the junctures achieve this goal.**

**Word Limit: 300 words.**

**Design and Cultural Creativity:**

**Please provide a short description of the junctures that demonstrate cultural creativity and storytelling.**

**Word Limit: 300 words.**

**Scientific Principles:**

**Please list the scientific principles incorporated in your design. Please refer to our official website for a list of scientific principles (<http://www.gogreenmech.org/>). If none of the listed scientific principles were used, please simply explain how the junctures operate.**

**Please provide a short description of how each juncture works and the scientific principle incorporated.**

**Word Limit: 300 words.**

**Application of Green Energy**

**Please explain the application of green energy concepts (such as hydroelectricity, wind energy, magnetic energy etc.) in your design.**

**Please provide a short description of how green energy is used and in which junctures of your design.**

**Word Limit: 300 words.**

I hereby acknowledge that the portfolio is completed only by the contestants in this team and that it reflects the designs of this team (tick the box).

**Note: Please add more rows to this form if needed.**

## **Appendix 4. Property Rights (Copyright) Authorization Form for Creators of Award-Winning Contraptions:**

### **Property Rights Authorization Form for Award-winning Creations**

#### **I. Statement of Original Creation:**

My team and I created the design of our creations. We also have the ability to assemble the contraption, and my team and I personally assembled it.

#### **II. Intellectual Property Rights Affidavit:**

- (1) My team and I grant the rights of our award-winning contraption to the Contest Organizers and other related organizations; the duration of the rights is permanent and extends to every part of the world. The creations are authorized to the Contest Organizers and other related organizations so that they can promote the Bond Robot Contest and other related events. The creations can be reproduced, edited, altered, cited in other material, publicly displayed in exhibitions, publicly displayed, publicly broadcasted by radio transmission, publicly shown by video, publicly transported, reformatted, disseminated in other ways, and the contraption itself can be utilized by the organizers. If the authorized organizers need to do anything to alter the creation's design or reproducing them, the authorizer shall cooperate with the Contest Organizers in providing relevant pictures and data.
- (2) The authorizer agrees that the award-winning creations can be utilized on the websites of the Contest Organizers, other business-related and academic-related organizations which assist the organizers. The creations can be viewed or exhibited, used by various types of media sources, and be broadcasted by radio for the public, publicly shown by video, publicly transported, and propagated in other different methods.

I have read, understood and agreed with the above statements.

I do not agree. (Note: Submission cannot be completed without accepting these statements)



**Appendix 5. Payment Form**

**2016 World Bond Robot Contest: GreenMech World Cup  
Payment Form**

Order	School	Team Name
1		
2		
3		
4		
5		
6		
7		
	Total	_____ Teams

**Please Paste the Receipt Here**

**A. Total Number of Teams:** \_\_\_\_\_. **Total Amount:** \_\_\_\_\_ USD

**B.** Every team must pay a 100 USD registration fee to the Contest Organizers before **5:00 pm, June 18, 2016 Taiwan time (GST+8)**.

**C.** Please transfer fee by bank and attach the receipt in this box →

Bank: Bank Of Taiwan  
 Branch: Fuhsing Branch  
 Swift Code: BKTWTWTP055  
 Bank Account Number: 055007003149

**D.** After filling out the information and attaching the receipt please send a fax to **886-2-2394-6832** or email a photocopy of the completed form to [ccdamech@gmail.com](mailto:ccdamech@gmail.com). If you have not receive a confirmation call or e-mail within 24 hours, please call **886-2-2351-5032** or email us for enquiry.

*Office Hours: 9am~12pm and 1:30pm~6pm, Monday to Friday*

**E. Contact Information**

Contact Person: \_\_\_\_\_ Organization: \_\_\_\_\_  
 Contact Number: \_\_\_\_\_ Mobile Number: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

**F. Bank Account Information:**

Account Name: \_\_\_\_\_  
 Bank Name: \_\_\_\_\_  
 Bank Branch Name: \_\_\_\_\_  
 Account Number: \_\_\_\_\_

**G. Personal Information for Bank Account Owner**

Passport Number: \_\_\_\_\_ Organization: \_\_\_\_\_  
 Job title: \_\_\_\_\_