

Republic of the Philippines
Department of Education
Region V- Bicol

SCHOOLS DIVISION OFFICE OF LIGAO CITY

Office of the Schools Division Superintendent

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August 12, 2026

DIVISION MEMORANDUM

No. **0398** s. 2026

**DIVISION SCIENCE, TECHNOLOGY AND MATHEMATICS FAIR,
STEMAZING AND ROBOTICS OLYMPICS FOR SY 2026-2027**

To: Asst. Schools Division Superintendents
Chief Education Supervisors (CID and SGOD)
Public and Private Elementary and Secondary School Heads
All Concerned

1. In preparation for the Regional Science and Technology Fair and Robotics Olympics per Regional Memorandum No. 926 s. 2026 and Regional STEMAzing which will be held on December 8 – 11, 2026, this Office will conduct the Division Science, Technology and Mathematics Fair, STEMAzing and Robotics Olympics. This division activity will be held on September 4, 7 and 8, 2026 at Ligao City National Technical Vocational High School, Nasisi, Ligao City.
2. The activity aims to:
 - a. develop and strengthen the Science, Technology, Engineering, and Mathematics (STEM) skills of learners through the conduct of research projects that address local, national, and/or global issues.
 - b. provide an avenue for high school learners to communicate research findings and showcase investigations, innovations and robotics skills to the STEM community and the public,
 - c. provide an opportunity to establish research networks and collaborations among students, researchers, teachers, higher education institutions, industries, other agencies and communities, and
 - d. foster a culture of creativity and innovation among the youth.
3. Relative to this, the following schedule of activities shall be observed:
 - Pre-Registration of Contestants and Coaches – Aug. 24, 2026
 - Online Submission of School Entries for TUKLAS Research – Sept.3, 2026
 - Division STEMAzing (Elementary and Secondary Levels) – Sept. 4, 2026
 - Division Science, Technology and Mathematics Fair and Robotics Olympics – September 7 and 8, 2026
4. The contest is open to all qualified public and private elementary and secondary schools of this Division. All entries must be endorsed by the School Head. Entries not included in the official endorsement will not be accepted. A link to registration forms will be sent to the school heads at least one week before the activity.



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5. No registration fee shall be collected. Expenses for the school level contest/selection, cliniquing, preparation and participation to higher level contests shall be charged against school MOOE/local funds. Meanwhile, expenses for the division activity for the contest materials/supplies, honorarium/token for non-DepEd Personnel invited as members of Division Scientific Review Committee (DSRC)/Board of Judges (BOJ), and token for DepEd personnel who will serve as DSRC member/Judge shall be charged against the CID Funds/Local Funds, subject to the usual accounting and auditing rules and regulations.
6. Enclosed in this Memorandum are the following:
- Contest Guidelines and Mechanics for Division Science and Technology Fair and Robotics Olympics
 - Contest Guidelines and Mechanics for Science and Mathematics Quiz
 - Contest Guidelines and Mechanics for Division STEMAZING
 - Activity Matrix
 - Composition of Executive and Technical Working Committee
7. For information and guidance of all concerned.


NYMPHA D. GUOMO
Schools Division Superintendent

CONTEST GUIDELINES AND MECHANICS
DIVISION SCIENCE AND TECHNOLOGY FAIR AND ROBOTICS OLYMPICS

The Science and Technology Fair shall include the following activities, which shall be conducted at the school, division, and regional levels in preparation for the Regional and National Science and Technology Fair.

a. Tuklas – a STEM research competition with four categories: (1) Life Science, (2) Physical Science, (3) Robotics and Intelligent Machines, and (4) Mathematics and Computational Science. This provides junior and senior high school learners with opportunities to showcase their research projects based on their field of interest and/or real world problems, issues and concerns.

b. STEM Innovation Expo – aims to recognize the most creative and market-viable project addressing major issues in food safety, water conservation, renewable energy, cyber security, road safety, health, disaster mitigation, agriculture, and environment.

c. Robotics Olympics – a robotics competition featuring challenges such as the Autonomous Navigation Challenge, EcoBot Collection Challenge and RC Robot Soccer. It provides learners with opportunities to apply robotics, programming, engineering design, and computational thinking in completing challenge-based tasks while fostering innovation, teamwork, creativity, and technical excellence.

d. The Division Mathematics and Science supervisors under the Curriculum Implementation Division (CID) shall lead the conduct of the Division level.

e. The submission link must be emailed to jocelyn.navera@deped.gov.ph following the prescribed format:

Folder Code	Contents of the Folder	Sample Content of the Folder for Forms
LS-I-School Name *Life Science-Individual-Amtic NHS	Manuscript: LS-I-School Name-Manuscript Ex: LS-I-Amtic NHS-Manuscript	
	Folder containing the needed forms: LS-I-School Name Forms Ex: LS-I-Amtic NHS-Forms <i>*Name of the folder where all of the soft copies of the forms are found</i>	LS-I-Name of School-Form 1 LS-I-Name of School-Form 2 LS-I-Name of School-Logbook
 LS-I- School  LS-T-School  PS-I-School  PS-T-School  RIM-I-School  RIM-T-School  MCS-I-School  MCS-T-School  SIE-I-School  SIE-T-School →  LS-I-Division-Forms →		

a. The participation of schools in the DSTF shall be clustered into categories: Life Science, Physical Science,

Robotics and Intelligent Machines, Mathematics and Computational Science, and Science Innovation Expo. Special categories for Robotics Olympics are further classified into: Autonomous Navigation Challenge (Line Follower), Autonomous Battle Arena Challenge (SumoBot), and RC Robot Soccer.

Life Science (Grades 9-12)		Physical Science (Grades 9-12)		Robotics & Intelligent Machines (Grades 9-12)		Mathematics & Computational Science (Grades 9-12)		Science Innovation Expo (Grades 9-12)		Autonomous Navigation Challenge	EcoBot Collection Challenge	RC Robot Soccer
I	T	I	T	I	T	I	T	I	T	Elementary	JHS/SHS	JHS/SHS

A. Research Fair and Congress (Individual and Team Categories)

Eligibility and Contest Mechanics

- 1st Place declared winner at the school level.
- Grades 9 to 12 STE/STEM students who have not reached the age of 20 on or before May 1 of the current school year.
- Learners may work individually or in teams of two (2) to a maximum of three (3) members from the same school. Each learner is allowed to submit only one (1) research project in one (1) of the five (5) research categories: Life Science, Physical Science, Robotics and Intelligent Machines, Mathematics and Computational Sciences, and STEM Innovation Expo. The project should cover no more than 12 months of continuous research and must not include research activities conducted before January of the previous school year. For example, for School Year 2025-2026, with classes targeted to open in June 2025 and ISEF scheduled for May 2026, research projects may span 1-12 month(s) from January 2025 to January 2026.

Guidelines

- Approval of the Scientific Review Committee is required for all projects. All approved projects of the school SRC evaluators will advance to the Division/Regional Science, and Technology Fair.
- Entries for the Science Innovation Expo (SIE) must have already applied for and secured the Certificate of Patent/Copyright before they are accepted at the Division Fair. Likewise, Science Innovation Expo follows a different criterion for judging, hence the presentation should focus on product presentation, originality/creativity, community/ connection impact, market attractiveness, functionality, and technology validation.
- All entries shall have a poster exhibit display. Materials for the display will not be provided by the organizer; hence, it shall be the responsibility of the researcher/s.
- Prepare a 5-minute presentation of the research focusing on the extended abstract: Purpose, Procedure, Results, and Conclusion. Q & A shall be at the discretion of the Board of Judges. Remember to follow the standards in preparing a slide deck presentation. Do not copy and paste the write-up in the slide decks.
- Submit three (3) hard copies of the paper in the required color-coded folders on September 7, 2026 not later than 8:30 a.m. to the Technical Working Committee.

Code	Color Coding	Code	Color Coding
LS-I	Green	MCS-I	Red
LS-T	Yellow	MCS-T	Purple
PS-I	Blue	SIE-I	Black
PS-T	Orange	SIE-T	White
RIM-I	Pink		
RIM-T	Brown		

- Both the Research Adviser and Researcher/s must have read and understood the

Criteria for Judging

Science Innovation Expo

Originality and Creativity:	30%
Community Connection and Impact:	20%
Market Attractiveness:	20%
Functionality and Technology Validation:	10%
Project Pitching/Product Presentation	10%
Utilization of Patent Information:	<u>10%</u>
	100%

Research Projects (Life Science, Physical Science, Robotics and Intelligent Machines and Mathematics and Computational Science)

Creative Ability:	30%
Scientific Thought/Engineering Goal:	30%
Thoroughness:	15%
Skill:	15%
Clarity:	<u>10%</u>
	100%

Best Presenter

Delivery:	20%
Organization (Logical Presentation):	20%
Content:	30%
Language:	15%
Visuals:	10%
Time Management:	<u>5%</u>
	100%

Best Poster Display

Content: (Accuracy, Clarity & Relevance)	30%
Visual Presentation: (Layout & Organization, Aesthetics & Design, Use of Graphics)	30%
Creativity & Innovation:	20%
Impact and Relevance:	<u>20%</u>
	100%

TUKLAS RESEARCH PAPER FORMAT

I.1 TUKLAS Categories

The STEM research competition is divided into four (4) categories. The student researchers and advisers should carefully consider which category best describes the research project. They may enter the competition as an individual or as a team.

- *Life Science*
- *Physical Science*
- *Robotics and Intelligent Machines*
- *Mathematics and Computational Science*

I.2 Innovation

- *Science Innovation Expo*

II. RESEARCH PLAN

This should be written prior to experimentation, following the instructions below to detail the rationale, research questions, methodology, and risk assessment of the proposed study. (This is compiled separately from the rest of the research manuscript.)

All projects should include the following:

- a. *Rationale*: Include a brief synopsis of the background that supports your research problem and explain why this research is important, and if applicable, explain any societal impact of your research.
- b. *Research Question or Problem* being addressed
- c. *Goals/ Expected Outcomes/ Hypotheses*
- d. *Procedures*: Detail all procedures and experimental design to be used for data collection.
- e. *Risk and Safety*: Identify any potential risks and safety precautions needed.
- f. *Data Analysis*: Describe the procedures to be used to analyze the data/results that answer research questions or hypotheses.
- g. *Bibliography*: List at least five (5) major references (e.g., science journal articles, books, internet sites) from your literature review using the APA Manual of Style. If you plan to use vertebrate animals, one of these references must be an animal care reference.

III. PROJECT DATA LOGBOOK

A project data logbook is used by student researchers to record research activities, including planning, design, procedures, data collection, analysis, findings, and conclusions. Accurate and dated entries help show consistency and support the writing of the research paper.

Researchers are encouraged to use hard-bound notebooks, permanent pens, and minimal erasures. Flow charts, tables, and complete qualitative and quantitative data with units may be included. Each entry should be dated and signed by the supervising adult, if applicable.

IV. RESEARCH PAPER FORMAT

Science Project

1. **INTRODUCTION** - What relevant background information supports your research problem/ questions?
 - Explain what is known or has already been done in your research area. Include a brief review of relevant literature. If this is a continuation project, a summary of your prior research is appropriate here. Be sure to distinguish your previous work from this year's project.
 - Include a brief description on how your project will address an issue, concern, or problem. Explain why this research is important and any societal impact of your research.
2. **METHODS**- What procedures were carried out for the experimentation?
 - Explain in detail what you did. What data did you collect, and how did you collect that data? Discuss your control group and the variables you tested.
 - Discuss your control group and the variables you tested. The statistical treatment used and handling and disposal of waste may be included if applicable.
 - DO NOT include a list of materials.
3. **RESULTS** - What were the result(s) of your project?
 - Include tables and figures which illustrate your data.
 - Include relevant statistical analysis of the data.
4. **DISCUSSION** - What is your interpretation of these results?
 - What do these results mean? Compare your results with theories, published data, commonly held beliefs, and expected results.
 - Discuss possible errors. Did any questions or problems arise that you were not expecting? How did the data vary between repeated observations of similar events? How were results affected by uncontrolled events?
5. **CONCLUSIONS** - What conclusions did you reach?
 - What do these results mean in the context of the literature review and other work being done in your research area? How do the results address your research question? Do your results support your hypothesis?
 - What application(s) do you see for your work?
6. **REFERENCES** - What are your sources?
 - This section should not exceed one page. Limit your list to the most important references.
 - List the references/documentation used which were not of your own creation (i.e., books, journal articles).
 - Your reference list should be written based on the American Psychological Association. For more information, you may visit this link: [https:// apastyle.apa.org/](https://apastyle.apa.org/).

Engineering Project

1. **INTRODUCTION** - What is your engineering problem and goal?
 - What problem were you trying to solve? Include a description of your engineering goal.

- Explain what is known or has already been done to solve the problem, including work on which you may build. You may include a brief review of relevant literature.
 - If this is a continuation project, a brief summary of your prior work is appropriate here. Be sure to distinguish your previous work from this year's project.
2. **METHODS** - What are your methods and procedures for building your design?
 - Explain what you did. How did you design and produce your prototype? If there is a physical prototype, you may want to include pictures or designs of the prototype.
 - If you tested the prototype, what were your testing procedures? What data did you collect, and how did you collect that data?
 - DO NOT include a separate list of materials.
 3. **RESULTS** - What were the result(s) of your project?
 - How did your prototype meet your engineering goal?
 - If you tested the prototype, provide a summary of testing data tables and figures that illustrate your results.
 - Include relevant statistical analysis of the data.
 4. **DISCUSSION** - What is your interpretation of these results?
 - What do these results mean? You may compare your results with theories, published data, commonly held beliefs, and/or expected results.
 - Did any questions or problems arise that you were not expecting? Were these problems caused by uncontrolled events? How did you address these?
 - How is your prototype an improvement or advancement over what is currently available?
 5. **CONCLUSIONS** - What conclusions did you reach?
 - Did your project turn out as you expected?
 - What application(s) do you see for your work?
 6. **REFERENCES** - What are your sources?
 - This section should not exceed one page. Limit your list to the most important references.
 - List the references/documentation used which were not of your own creation (i.e., books, journal articles).
 - Your reference list should be written based on the American Psychological Association. For more information, you may visit this link: <https://apastyle.apa.org/>.

Mathematics and Computational Science Project

1. **INTRODUCTION** - What is your research question?
 - Explain what is known or has already been done in your research area. Include a brief review of relevant literature.
 - If this is a continuation project, a brief summary of your prior work is appropriate here. Be sure to distinguish your previous work from this year's project.
2. **FRAMEWORK** - What is your framework?
 - Introduce the concepts and notation needed to specify your research question, methods, and results precisely.
 - Define relevant terms, and explain prior/ background results. (Novel concepts developed as part of your project can be presented here or in Section 4, as appropriate.)
3. **FINDINGS** - What are your findings and supporting arguments?
 - What did you discover and/ or prove? Describe your result(s) in detail. If

possible, provide both formal and intuitive/verbal explanations of each major finding.

- Describe your methods in general terms.
- Present rigorous proofs of the theory results - or, if the arguments are long, give sketches of the proofs that explain the main ideas
- For numerical/ statistical results, include tables and figures that illustrate your data. Include relevant statistical analysis. Were any of your results statistically significant? How do you know this?

4. **CONCLUSIONS** - What is your assessment of your findings?

- How do the results address your research question? and how have you advanced your readers' understanding relative to what is already known?
- Discuss possible limitations. Did any questions or problems arise that you were not expecting?
- What challenges do you foresee in extending your results further?
- What application(s), if any, do you see for your work?

5. **REFERENCES** - What are your sources?

- This section should not exceed one page. Limit your list to the most important references.
- List the references/documentation used which were not of your own creation (i.e., books, journal articles).
- Your reference list should be written based on the American Psychological Association. For more information, you may visit this link: <https://apastyle.apa.org/>.

V. ABSTRACT

The abstract should be 250 words or less. Do not discuss specific aspects of the research in detail, including experimental procedures and statistical methods. Any information unnecessary for a brief explanation should be included in the written research paper or project exhibit board instead.

If the project is a continuation from a previous year, the abstract should summarize only the current year's work. If supporting research from previous year(s) must be mentioned, it should be minimal.

If the abstract contains special characters, such as mathematical symbols, that cannot be translated electronically, spell out the symbols.

Do not include acknowledgments in the abstract. There should be no references to mentors, institutional facilities, awards, or patents received.

Title

***Finalist's Name (or names, if a team project) School Name,
City and Region***

Purpose

- An introductory statement providing background or the reason for investigating the project topic.
- A statement of the problem the research is looking to solve or the questions being tested.

Procedure

- A brief overview of how the investigation was conducted, highlighting key points and including methods and resources used.
- Do not provide details about materials used in the research unless they greatly influenced the procedure or were needed to conduct the investigation.
- An abstract should only include procedures done by the Finalist. Do not include work done by a mentor (such as surgical procedures) or work done prior to the Finalist's involvement.

Observations/Data/Results

- This section should provide key results that lead directly to the conclusions.
- Do not include unnecessary data or observations about the results, nor tables, charts, graphs, or other images. While these belong in the research paper or the project board, they do not belong in the formal ISEF abstract.
- Unless significant, do not include any of the experimental design difficulties encountered in research.

Conclusions

- This section should be confined to a short summary in 1-2 sentences. It is a reflection on the research process and results, which may include conclusive ideas, important applications, and implications of the research.
- The ISEF abstract does not include a bibliography.
- ISEF requires the bibliography as part of the research plan to be provided on Form IA.

Ethics Statement

- Scientific fraud and misconduct are prohibited at any level of research or competition.
- Plagiarism, use or presentation of other research work as one's own, and fabrication of data will not be tolerated. Fraudulent projects are disqualified from the competition.

STEM INNOVATION EXPO PAPER FORMAT

Title Page and Table of Contents

Introduction

1. ***Features and Specifications*** - This describes the details of your innovation.
2. ***Market Trends and Opportunities***-This part of the report must include three items: an explanation of what inspired you to develop this invention, a description of the

problem your invention will solve, and a detailed account of how you confirmed that your invention does not exist yet. Additionally, identify similar products currently on the market and explain how your invention differs.

Materials and Methods:

Describe in detail how you made your innovation. Explain what materials were used and how you put them together to make your invention. Your report should be detailed enough so that others can repeat the steps and make your invention. Directions on how to use the invention are also necessary here. You must include detailed drawings of your invention.

Results and Discussion:

This section presents the essence of the research paper. It should compare the results with theoretical values, published data, related literature and studies, commonly held beliefs, and/or expected outcomes. It should also include a discussion of possible sources of error, statistical analysis, graphs, and relevant raw data.

The discussion should explain how the data varied across repeated observations or trials, how the results were affected by uncontrolled factors, what could be improved if the project were repeated, and what further experiments or innovations may be conducted.

Conclusions

This section focuses on the potential applications, possible customer benefits, and impact of the findings or results in solving present and future problems or issues.

Acknowledgments

This section gives credit to those who assisted in the project, including individuals, businesses, and educational or research institutions.

References/Bibliography

The reference list should be written following the APA Manual of Style.

ISEF Rules, Guidelines and latest Forms can be accessed through:

<https://www.societyforscience.org/isef/international-rules/rules-and-guidelines/>

QR Code:



ROBOTICS OLYMPICS MECHANICS AND GUIDELINES

A. Autonomous Navigation Challenge (Line Follower) – Elementary

Objective The goal of this contest is for each team's robot to autonomously navigate a designated course by following the required path and reaching the finish line in the shortest possible time.	
Qualification 1. Open to Elementary students. Teams may consist of members from either level or a mix of both. 2. Each team may consist of up to two (2) student members and one (1) coach. 3. Only one (1) team per division is allowed to participate.	Robot Requirements 1. Each team is allowed to use only one (1) robot. 2. The robot must not exceed 25 cm x 25 cm in size. 3. The robot must be fully autonomous. Remote control, manual steering, or manual intervention is not allowed during operation. 4. The robot may have any number of wheels. 5. The robot must have an easily accessible on/off switch. 6. The robot must be battery-operated. Any type of battery is allowed, provided it is safe and securely mounted. 7. Any brand or type of microcontroller or microprocessor may be used, provided the robot operates autonomously. 8. The robot must be programmable. Teams may upload and test their code only during the designated practice time. 9. Any type and number of sensors may be used to support autonomous navigation. 10. Non-compliance with these requirements will result in disqualification.

Competition Rules

1. Robots must adapt to the existing lighting conditions. Lighting will not be adjusted for individual teams. Flash photography and IR cameras are allowed unless deemed disruptive by the judges.
2. The arena will open 1 hour before the competition. Each team will be given 5 minutes of practice time.
3. Once the competition begins, no physical adjustments to the robot or changes to its programming are allowed. Code uploading or editing is strictly prohibited during the official match period, and the robots must be immediately placed back in the location specified by the judges.
4. Timing starts when the robot begins moving and stops upon reaching the finish line.
5. Each team will have three (3) attempts. The shortest time will be recorded.
6. The team with the fastest completion time wins.
7. Robots that leave the arena surface will be disqualified for that attempt.
8. If a robot fails to complete the course, partial points will be awarded based on the distance traveled.
9. In the event of a tie, a rematch may be conducted at the discretion of the organizers.
10. All decisions made by the judges and officials are final and binding.

Organization and Registration

1. All robots must be registered before the competition, including technical inspection and number sticker assignment.
2. Technical inspections must be completed on or before the deadline set by the organizers.
3. The referee will resolve all issues or questions during the event.
4. No objections to the decisions of the facilitators or judges will be entertained.

B. EcoBot Collection Challenge

Objective

The Autonomous EcoBot Collection Challenge demonstrates autonomous navigation, object detection, strategic programming, and environmental responsibility. Each robot must locate and transport designated recyclable objects into its assigned collection zone while avoiding the arena boundary, obstacles, and unnecessary contact with the opposing robot. The robot that earns the highest score within the allotted time shall win the match.

Qualification

1. Open to Junior High School (JHS) and Senior High School (SHS) students. Teams may consist of members from either level or a mix of both.
2. Each team may consist of up to two (2) student members and one (1) coach.
3. Only one (1) team per division is allowed to participate.

Robot Requirements

1. Each team is allowed to use only one (1) robot.
2. The robot must not exceed 20 cm x 20 cm x 20 cm in size.
3. The robot must not weigh more than one kilogram (1 kg).
4. The robot must be fully autonomous. Remote control or manual intervention is not allowed during matches.
5. The robot may have any number of wheels or locomotion mechanisms.
6. The robot must have an easily accessible on/off switch.
7. The robot must be battery-operated. Any type of battery is allowed, provided it is safe and securely mounted.
8. Any brand or type of microcontroller or microprocessor may be used.
9. Any type and number of sensors may be used for navigation, object detection, boundary detection, and obstacle avoidance.
10. The robot may use fixed or motorized mechanisms for safely guiding, pushing, lifting, or carrying competition objects.
11. All attachments must remain within the maximum robot dimensions at the beginning of the match.
12. Robots must not use adhesives, liquids, projectiles, flames, magnets that interfere with equipment, sharp components, or mechanisms that may damage objects, robots, or the arena.
13. Robots must not intentionally block, trap, overturn, push, or damage the opposing robot.
14. Non-compliance with these requirements shall result in penalties or disqualification.

Competition Rules

1. Teams must be present at the competition area at least five (5) minutes before their scheduled match.
2. Each match shall involve only two (2) autonomous robots operating simultaneously inside the arena. When more than two teams are registered, matches shall be conducted by batch according to the official match schedule or tournament bracket prepared by the organizers.
3. For thirteen (13) participating robots, six (6) pairs shall compete in the first round, while one (1) robot shall automatically advance to the next round without competing. The pairings and the robot that will automatically advance shall be determined through a transparent drawing of lots conducted by the organizers before the competition..
4. The assignment of opponents, match order, and the robot that will automatically advance to the next round without competing shall be determined through a transparent drawing of lots conducted by the organizers before the competition.
5. Only the two teams scheduled for the current match may place and activate their robots inside the arena. All other teams must remain in the designated waiting or preparation area.
6. Each robot must begin inside its assigned starting zone.
7. Competition objects shall be placed in predetermined positions before each match.
8. At the referee's signal, each contestant may press the robot's start button. The robot must begin operating after five (5) seconds.
9. Contestants must leave the immediate arena area before the robots begin moving.
10. Each match shall have a duration of three (3) minutes.
11. Robots must autonomously locate and transport competition objects into their assigned collection zones.
12. An object shall be counted only when it is completely inside the correct collection zone.
13. Objects may be pushed, guided, lifted, or carried using safe robot mechanisms.
14. An object not yet fully secured inside a collection zone may be moved by either robot.
15. Once an object is completely inside a collection zone, the opposing robot must not intentionally remove it.
16. Robots must avoid intentional contact with the opposing robot. Minor accidental contact is allowed only when the robot immediately moves away.
17. Intentional pushing, trapping, blocking, overturning, or damaging another robot is prohibited.
18. A robot that leaves the arena shall be returned to its starting zone by the referee and shall receive the corresponding penalty.
19. Contestants may not touch, adjust, repair, reprogram, or communicate with their robots during the match.
20. A robot that fails to begin moving within thirty (30) seconds shall be considered inactive.
21. A robot that remains immobilized for more than fifteen (15) seconds may be removed by the referee. The other robot may continue until the match ends.

22. The match shall end when the time expires, all objects are collected, both robots are inactive, or the referee stops the match for safety reasons.
23. The winning robot shall advance to the succeeding round until the semifinal and championship matches are completed.
24. A team that is not present within five (5) minutes after being officially called may forfeit the match, unless the delay is caused by circumstances recognized by the organizers.
25. Adequate preparation time may be provided between matches. However, teams shall not make major structural or programming modifications that would violate the inspected robot specifications.
26. Robots must be switched off and removed promptly after the match.
27. The referee's decisions are final and non-negotiable.

Scoring System

Accomplishment or Violation	Points / Penalty
Each regular recyclable object completely placed inside the correct collection zone	10 points
Each special eco-token completely placed inside the correct collection zone	20 points
Robot remains completely inside the arena until the match ends	5 points
All available objects collected before time expires	10 bonus points
Robot leaves the arena	-5 points
Object placed inside the opposing team's collection zone	-5 points
Object intentionally removed from a completed collection zone	-10 points
Intentional blocking or pushing of the opposing robot	-10 points
Manual intervention by a contestant	-15 points
Intentional damage to an object, robot, or arena	Disqualification

Determination of Winners:

1. Each match shall consist of one (1) three-minute round.
2. The robot with the highest total score shall be declared the winner of the match and shall advance to the succeeding round.
3. The competition shall follow a single-elimination tournament format, unless another format is officially announced by the organizers before the event.
4. For thirteen (13) participating robots, the first round shall consist of six (6) matches involving twelve (12) robots. One (1) robot shall automatically advance to the next round without competing. The six (6) match winners and the robot that automatically advances shall proceed to the next stage, resulting in seven (7) remaining robots.
5. When an odd number of robots remains in any succeeding stage, the organizers shall conduct a transparent drawing of lots to determine the match pairings and the robot that will automatically advance to the next round without competing.
6. In case of a tied match, the winner shall be determined based on the following criteria, in this order:
 - a. More number of collected objects;
 - b. Shorter time in collecting the final object;
 - c. Fewer penalties incurred; and
 - d. More consistent autonomous navigation and obstacle avoidance.
7. If the tie remains unresolved, a one-minute tie-breaker round shall be conducted using three (3) objects placed at the center of the arena.
8. The robot that correctly collects the greater number of objects during the tie-breaker round shall be declared the winner.
9. No robot maintenance, reprogramming, or component replacement shall be allowed before the tie-breaker round, except for safety-related corrections authorized by the referee.

Violations and Disqualification

1. Starting before the official signal.
2. Manually controlling or communicating with the robot during the match.
3. Intentionally pushing, trapping, overturning, or blocking the opposing robot.
4. Using an unsafe, sharp, harmful, or prohibited mechanism.
5. Damaging the arena or competition objects.
6. Interfering with officials or another team.
7. Displaying disrespectful, discriminatory, violent, or unsportsmanlike behavior.
8. Failing to comply with robot specifications.
9. Modifying the robot after inspection without permission.
10. Repeatedly violating competition rules after receiving a warning.

Organization and Registration

1. All robots must be registered before the competition and must undergo technical and safety inspection.
2. Inspection shall verify dimensions, weight, autonomous operation, battery installation, collection mechanism, exposed components, and compliance with prohibited-mechanism rules.
3. Robots that fail inspection may be corrected and resubmitted within the period established by the organizers.
4. After passing inspection, major modifications are prohibited unless approved and reinspected by the organizers.
5. The referee shall resolve all issues or questions during a match.
6. No objections to the final decisions of the referees, facilitators, or judges shall be entertained.

Materials:

A. Materials to Be Prepared by Each Team

1. One (1) fully assembled autonomous robot that complies with all size, weight, and safety requirements.
2. Robot battery or batteries, plus one (1) safe spare battery when available.
3. Battery charger and charging cable.
4. Basic hand tools for maintenance, such as screwdrivers, pliers, hex keys, and electrical tape.
5. Spare non-hazardous parts, including wheels, screws, wires, sensors, collection guides, and motor brackets.
6. Laptop and programming cable for use only in the designated preparation area.
7. Extension cord

B. Materials to Be Prepared by the Organizers

1. One (1) circular arena measuring 77 cm in diameter with a clearly visible white boundary and a stable, non-slip surface.
2. Two (2) colored collection zones positioned on opposite sides of the arena.
3. Two (2) clearly marked robot starting zones.
4. At least eight (8) uniform lightweight recyclable objects, such as foam blocks, plastic caps, or wooden cubes, plus optional special eco-tokens.

5. Safe and stable stationary obstacles of uniform dimensions, when obstacle avoidance is included.
6. Digital weighing scale and measuring device or sizing box.
7. Stopwatch, timer, start signal, score sheets, pens, and match brackets.
8. Official robot number stickers and colored team identifiers.
9. Inspection table, robot preparation area, and safe charging station.
10. Boundary barriers or a clear safety perimeter for spectators.
11. Basic safety equipment, including a first-aid kit and an appropriate fire extinguisher.
12. Replacement competition objects, zone markers, cleaning cloths, and tape.
13. Printed copies of the rules, arena layout, inspection checklist, scoring sheets, and violation forms.

Arena Specifications

1. Matches shall be conducted in a circular arena measuring 77 cm in diameter.
2. The arena shall have a clearly marked white boundary line.
3. Two collection zones of equal size shall be placed on opposite sides of the arena and identified by different colors.
4. Two starting zones shall be clearly marked inside the arena.
5. Lightweight objects representing recyclable materials shall be placed in predetermined positions near the center of the arena.
6. All regular competition objects shall have uniform dimensions and weights.
7. Organizers may place safe stationary obstacles inside the arena to test navigation and obstacle avoidance.
8. The final arena layout, object dimensions, and object quantities shall be announced before the competition.

Organization and Registration	1. All robots must be registered before the competition, including technical inspection and number sticker assignment. 2. Technical inspections must be completed on or before the deadline set by the organizers. 3. The referee will resolve all issues or questions during the event. 4. No objections to the decisions of the facilitators or judges will be entertained.
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B. RC Robot Soccer

Objective Teams will control three robots to play soccer against another team. The goal is to score more points than the opposing team within the match duration. Strategy, teamwork, and robot control are key to winning.	
Qualification 1. Open to Junior High School (JHS) and Senior High School (SHS) students. Teams may consist of members from either level or a mix of both. 2. Each team may consist of up to 3 student members and 1 coach. 3. Only one (1) team per division is allowed to participate.	Robot Requirements 1. Each team must use three (3) remote-controlled robots. 2. Each robot must not exceed 20 cm x 20 cm x 20 cm in size. 3. Each robot must not weigh more than 1 kilogram (1 kg). 4. Robots must be remotely controlled (wireless). 5. Any type of microcontroller, motor driver, and communication module may be used. 6. Robots must be battery-powered and safe for operation. 7. Robots must not have any sharp edges, projectiles, or mechanisms that could damage the field or other robots. 8. Each robot must have a visible team identifier (e.g., sticker or flag). 9. Robots must be distinguishable from each other (e.g., numbered or color-coded).

Competition Rules

1. Teams are expected to be at the field 5 minutes before their game starts.
2. The game is played on a rectangular field with goals on each end.
3. Each match consists of two halves, each lasting 2 minutes, with a 1-minute break in between.
4. The team that scores the most goals by the end of the match wins.
5. A kick-off starts the game and resumes play after each goal.
6. Robots must stay within the field boundaries. If a robot leaves the field, it will be removed from the field for a **20-second penalty**. The robot is allowed to return if a kick-off occurs before the penalty has elapsed and will be repositioned by the referee to the designated area.
7. A maximum of three robots per team is allowed on the field at any given time.
8. No intentional blocking, ramming, or pinning of the opponent is allowed.
9. A robot is not allowed to hold the ball, which means taking full control by eliminating all its degrees of freedom. This includes fixing the ball to the robot, enclosing it to block access, or trapping it in any way. If the ball doesn't roll while the robot moves, it is likely held.
10. If a robot becomes stuck or non-functional, the team may request a **10-second timeout** (once per match) to reset or reposition the robot.
11. In the event of a tie, a 2-minute sudden-death overtime will be played. The first team to score wins.
12. Scoring

Action	Score
Goal scored	1 point
Own goal	1 point to the opponent
Unsportsmanlike behavior	Warning or disqualification

Organization and Registration

1. All robots must be registered before the competition, including a technical inspection.
2. Robots will be marked with a team number or identifier.
3. All issues or disputes will be resolved by the referee.
4. No objections to the decisions of the facilitators or judges will be entertained.

**SUPPLEMENTARY GUIDELINES AND CORRIGENDUM TO CONTEST MECHANICS IN
ROBOTICS OLYMPICS**
(Based on Advisory 1 to RM No. 926 s. 2026)

A. Autonomous Navigation Challenge (Line Follower) - Elementary

Additional Technical Specifications

1. Track Specifications

The competition track shall consist of:

- Black line on a white background
- Track Size: 8ft x 8ft

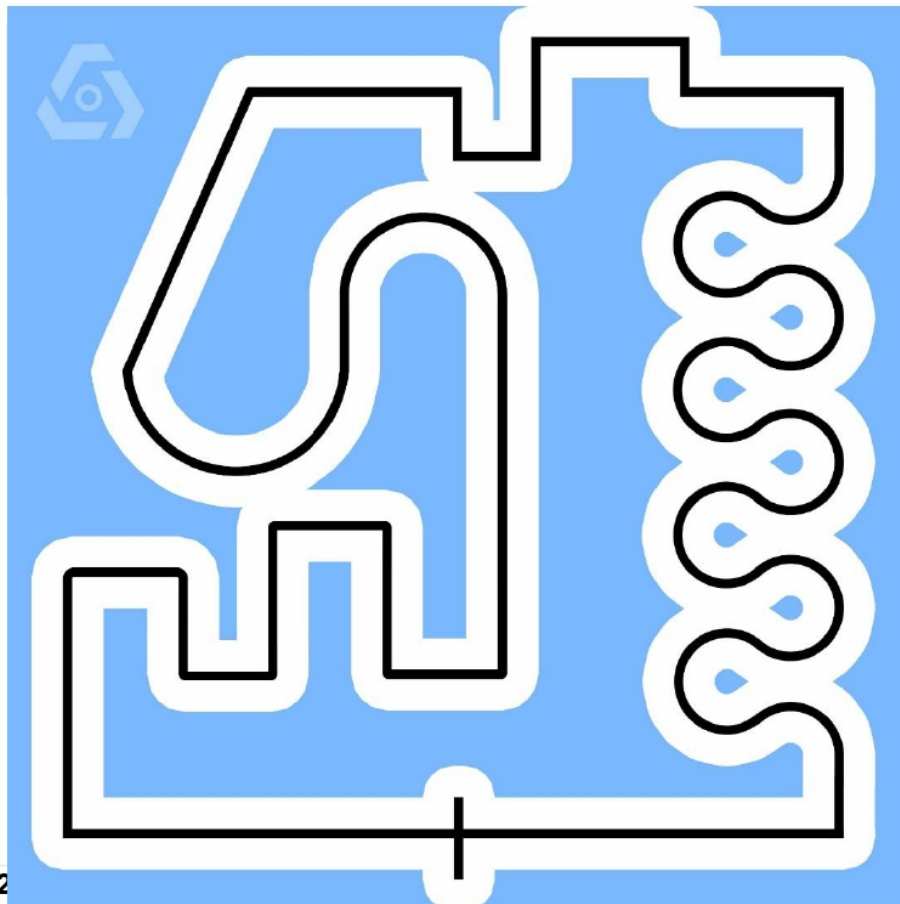
The robot must autonomously follow the black line from the designated START area until the FINISH line.

2. Course Complexity

The competition track may contain one or more of the following:

- Straight paths
- Smooth curves
- Sharp 45° turns
- Sharp 90° turns
- Dead-end style curves

Refer to the Layout below:



3. Surface Material

The competition track shall be:

- Professionally printed on tarpaulin
- Installed over a smooth and level floor

This standard surface shall be used for all competition runs to ensure equal wheel traction for all teams.

4. Timing Rule

Competition time shall:

- begin immediately once the robot starts moving after the referee's signal;
- stop **only when the entire body of the robot has completely crossed the finish line.**

Partial crossing of the finish line shall not stop the timer.

5. Tie-Breaking Procedure

If two or more teams record identical fastest times, an additional single timed run shall be performed on the same mat.

The decision shall be announced by the Tournament facilitator.

B. EcoBot Collection Challenge

Additional Technical Specifications

1. Eco-Token Specifications

The competition shall use standardized Eco-Tokens.

Each Eco-Token shall:

- not exceed 5 cm × 5 cm × 5 cm
- weigh not more than 50 grams

Objects may consist of:

- foam blocks
- plastic bottles
- cans
- lightweight recyclable materials

2. Number and Placement of Eco-Tokens

A total of 10 Eco-Tokens shall be positioned at predetermined locations on the arena.

They shall consist of:

Recyclable Eco-Tokens

- **10 points each**
- located inside the **Green Zones**

Special Eco-Tokens

- **20 points each**
- located inside the **Red Zones**

The official arena map shall identify all token positions before the competition begins.

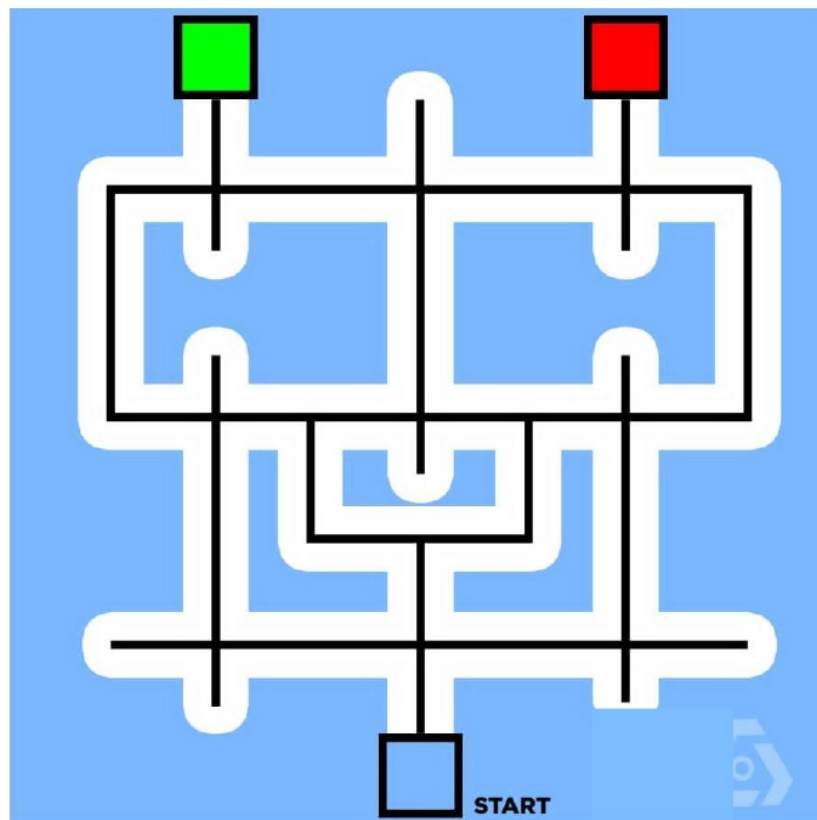
3. Arena Surface

The official playing field shall consist of:

- 8 ft × 8 ft tarpaulin
- printed competition layout
- installed over a smooth and level floor

This standardized surface ensures consistent friction for all competing robots.

4. Track Layout



C. RC Robot Soccer

Additional Technical Specifications

1. Official Ball

The official game ball shall be a:

- Standard Tennis Ball

Specifications:

- Diameter: approximately 6.5–6.9 cm
- Weight: 56–59.4 grams
- Felt-covered rubber tennis ball

No other ball type shall be used.

2. Official Playing Field

The RC Soccer arena shall measure:

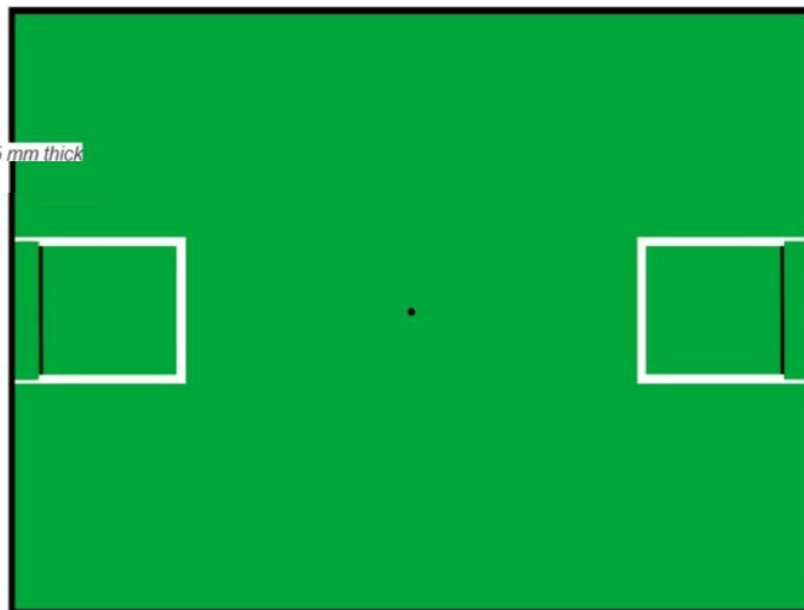
Item	Specification
Length	2430 mm (2.43 m)
Width	1830 mm (1.83 m)
Surface	Dark Green Carpet (3–5 mm thick)
Goal Width	45 cm
Goal Depth	7.5–8 cm

There shall be NO perimeter walls surrounding the playing field.

These dimensions are adapted from the existing guidelines, with the clarification that walls will not be used.

Refer to the track layout below.

Adapted from: WRO 2021
Length: 2430 mm (2.43 meters)
Width: 1830 mm (1.83 meters)
Surface: Dark green carpet. 3–5 mm thick
|
Goal Width: 45 cm
Goal Depth: 7.5–8 cm



3. Frequency Management

To prevent signal interference,
all teams shall use:

- 2.4 GHz FHSS (Frequency Hopping Spread Spectrum) radio controllers, or
- communication channels assigned by the Tournament Committee during registration.

Any controller causing interference with another team may be prohibited.

4. Ball Out-of-Play Restart Rule

If the ball completely leaves the playing field during active play:

1. The referee shall immediately stop play.
2. The ball shall be returned to the field and placed by the referee at the point on the sideline nearest to where it exited the playing area.
3. The first kick or touch after the restart shall be awarded to the opposing team (the team that did not cause the ball to go out of play).
4. All opposing robots must remain at least 30 cm away from the ball until it has been put back into play by the awarded team.
5. Play shall resume upon the referee's signal.
6. If a team deliberately or repeatedly forces the ball out of the playing field to gain an advantage, a **20-second penalty** shall be imposed on the offending team. Repeated violations may result in additional disciplinary action at the discretion of the referee.

Note: Since the RC Robot Soccer field has no perimeter walls, all balls that leave the playing area shall be restarted using this procedure to ensure fair and continuous gameplay. This rule complements the existing provisions on field boundaries and penalties.

D. Official Practice and Calibration Period

To ensure fairness and allow teams to adapt to the official competition arena, the organizers shall provide an Official Practice and Calibration Period under the following conditions:

1. The official competition arena shall be opened **three (3) hours before the start of the competition**.
2. During this period, teams may:
 - test and calibrate their robots on the official competition track or arena;
 - adjust sensor settings, motor parameters, and mechanical components; and
 - upload or modify their programs as necessary.
3. Once the official practice and calibration period has ended and the competition proper begins, **no further hardware adjustments, software modifications, or program uploads shall be permitted** unless expressly authorized by the Head Referee due to technical issues beyond the team's control.
4. Teams shall follow the practice schedule and time allocations established by the organizers to ensure equal access to the official arena for all participants.

*Note: A **three (3)-hour official practice and calibration period** shall be provided prior to the start of the Line Tracing competition.*

E. General Organizational Clarification

Standardized Technical Inspection Checklist

Before the competition begins, all robots shall undergo inspection using a standardized Technical Inspection Form.

The checklist shall include verification of:

- Robot dimensions
- Weight limits
- Sharp edges
- Secure mounting of parts
- Mechanical safety
- Communication system
- Proper identification markings (Team Identification)
- Compliance with event specifications

Robots that fail the inspection shall not be allowed to compete until all identified deficiencies have been corrected and the robot has passed reinspection.



Republic of the Philippines
Department of Education
Region V– Bicol

SCHOOLS DIVISION OFFICE OF LIGAO CITY

**Maximum Number of Participants per Event per School for
Division Science and Technology Fair and Robotics Olympics**

Event	Student	Coach	Total
o Life Science Individual	1	2	3
o Life Science Team	3	2	5
o Physical Science Individual	1	2	3
o Physical Science Team	3	2	5
o Robotics & Intelligent Machines Individual	1	2	3
o Robotics & Intelligent Machines Team	3	2	5
o Mathematics & Computational Science Individual	1	2	3
o Mathematics & Computational Science Team	3	2	5
o Science Innovation Expo Individual	1	2	3
o Science Innovation Expo Team	3	2	5
o Autonomous Navigation Challenge (Line Follower-Elementary)	2	1	3
o EcoBot Challenge(JHS/SHS)	2	1	3
o RC Robot Soccer	3	1	4
Total			= 50

Mechanics and Contest Guidelines for the 2026 Math Quiz

1. The quiz is open for both public and private educational institutions. Each district is allowed to send a maximum of four (4) participants per grade level (from Grade 3 to 12), with contestants coming from various schools. Additionally, there can be no more than three (3) participants per grade level from private schools, also representing different schools.
2. Only bona fide students in Grades 3,4,5,6,7,8,9,10, 11 and 12 shall be sent by to compete in the 2026 Math Quiz. During the competition, each contestant shall wear the prescribed School ID duly signed by the respective school head.
1. The quiz will cover the following learning competencies:
 - a. Grade 3 – Term 1 Math 3 competencies and Lower Math Competencies
 - b. Grade 4 – Term 1 Math 4 competencies and Lower Math Competencies
 - c. Grade 5 – Term 1 Math 5 competencies and Lower Math Competencies
 - d. Grade 6 – Term 1 Math 6 competencies and Lower Math Competencies
 - e. Grade 7 – Term 1 Math 7 competencies and Lower Math Competencies
 - f. Grade 8 – Term 1 Math 8 competencies and Lower Math Competencies
 - g. Grade 9 – Term 1 Math 9 competencies and Lower Math Competencies
 - h. Grade 10 – Term 1 Math 10 competencies and Lower Math Competencies
 - i. Grade 11– Term 1 General Math competencies and Lower Math Competencies
 - j. Grade 12 – General Math competencies and Lower Math Competencies
 - k. Teachers (Elementary – Math 1-6 Competencies, Secondary – Math 7-12 Competencies)
2. Math Quiz for students and teachers category is in written format composed of 20 item questions of various types.
3. Answers with wrong spelling and/or illegible are considered wrong. Final answers shall be written legibly.
4. There shall only be one winner for the first to third place. If there is a tie, a tie-breaking question will be given. The first contestant who will gain point over the other shall be considered as the winner in the tie-breaker. More than one winner will only be allowed starting from the fourth place.
5. Contestants who will violate relevant provisions indicated in this mechanics and guidelines shall be disqualified from the competition

Mechanics and Contest Guidelines for the 2026 Science Quiz

1. The quiz is open for both public and private educational institutions. Each district is allowed to send a maximum of four (4) participants per grade level (from Grade 3 to 12), with contestants coming from various schools. Additionally, there can be no more than three (3) participants per grade level from private schools, also representing different schools.
2. Only bona fide students in Grades 3,4,5,6,7,8,9,10, 11 and 12 shall be sent by to compete in the 2026 Science Quiz. During the competition, each contestant shall wear the prescribed School ID duly signed by the respective school head.
1. The quiz will cover the following learning competencies:
 - a. Grade 3 – Term 1 Science 3 competencies
 - b. Grade 4 – Term 1 Science 4 competencies and Lower Science Competencies
 - c. Grade 5 – Term 1 Science 5 competencies and Lower Science Competencies
 - d. Grade 6 – Term 1 Science 6 competencies and Lower Science Competencies
 - e. Grade 7 – Term 1 Science 7 competencies and Lower Science Competencies
 - f. Grade 8 – Term 1 Science 8 competencies and Lower Science Competencies
 - g. Grade 9 – Term 1 Science 9 competencies and Lower Science Competencies
 - h. Grade 10 – Term 1 Science 10 competencies and Lower Science Competencies
 - i. Grade 11– Term 1 General Science competencies and Lower Science Competencies
 - j. Grade 12 – General Science competencies and Lower Science Competencies
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5. Contestants who will violate relevant provisions indicated in this mechanics and guidelines shall be disqualified from the competition

Contest Guidelines and Mechanics for Division STEMazing Contest

STEMazing

(A Showcase of Science, Technological, and Mathematical Outputs)

KEY STAGE	Key Stage 2: Grades 4 to 6 Key Stage 3: Grades 7 to 10 Key Stage 4: Grades 11 to 12
NO. OF PARTICIPANT/S PER REGION	STEMazing for Elementary (Grades 4 to 6): 2 learners per team (choose participants from Key Stage 2; only one learner per grade level is allowed , e.g., the team is composed of 1 Grade 4 and 1 Grade 6 learner) 1 teacher-coach STEMazing for Secondary (Grades 7 to 12): 2 learners per team (choose participants from Key Stages 3 and 4; only one learner per grade level is allowed , e.g., the team is composed of 1 Grade 8 and Grade 10 learners, or 1 Grade 11 and 1 Grade 12 learners) 1 teacher-coach
TIME ALLOTMENT	Elementary – 180 minutes High School – 150 minutes
PERFORMANCE STANDARD	The learners: • obtain scientific and technological information from varied sources about global issues that have an impact on the country. • acquire scientific attitudes that will allow them to innovate and/or create products useful to the community or country. • process information to get relevant data for a problem at hand • demonstrate proficiency in applying mathematical concepts to solve authentic, real-world challenges; • exhibit analytical and strategic thinking skills in approaching complex mathematical problems; • manifest effective communication and collaborative skills in mathematical discourse and team problem-solving; and • show mastery in integrating concepts across various mathematical domains (Number & Number Sense, Measurement and Geometry, Data and Probability) in practical applications.
21ST CENTURY SKILL/S	Critical thinking, communication skills, creativity, problem solving, collaboration, information, digital literacy, and

CREATIVE INDUSTRIES DOMAIN	• Digital Interactive Media Domain (through educational gaming and interactive mathematical applications) • Creative Services Domain (through creative research and development, cultural and recreational services) • Design Domain (through the creation of solutions that address mathematical and spatial problems) • Audiovisual Media Domain (through educational content development)	
CAREER PATHWAYS	Science, Technology, Engineering, and Mathematics (STEM)	
DESCRIPTION	STEMazing is an NFOT contest that challenges learner-participants to seamlessly combine physical exploration with scientific research and mathematical investigation. They engage in problem-solving activities within real-world contexts to demonstrate their mastery of STEM concepts.	
TECHNICAL SPECIFICATIONS		
A. MATERIALS, TOOLS, AND EQUIPMENT	To be provided by learner-participants, if any: • ICT Tools such as laptops and chargers if necessary • Extension cords, if necessary • Personal pocket Wi-Fi	To be provided by the Technical Committee: • Team identification badges • Station markers and QR code printouts • Scoring sheets and evaluation forms • Data collection forms • Emergency and first aid equipment • Maps and route guides • Activity Tables • Digital Timers • Science Laboratory Tools/Equipment / Materials • Calculator • Measuring tools (ruler, tape measure, protractor, etc.) • Writing materials (Ballpen, Pencil and Bond Paper) • Digital device for QR codes (if allowed by organizers) • Safety equipment (as specified in orientation)
B. VENUE	School grounds or designated competition area with: • Multiple checkpoint stations • Investigation areas • Presentation space • Rest areas and first aid stations • Emergency assembly points • Holding Area (for teacher-coaches/learner-participants/other audience)	

C. CRITERIA FOR JUDGING

Category	Maximum Points per Category
Easy	30
Average	30
Difficult	40
TOTAL	100

- The total cumulative number of points shall always be 100 points.
- The points per station shall be determined by the organizer based on the nature of the task, provided that the total points and the points for any station do not exceed the maximum points allocated for its respective category.
- Teams shall receive points based on the scoring rubrics.
- The total time to complete the challenges shall be computed but will not affect the score of each team for each station's task.
- In the event of a tie, the judges shall determine the winner based on the total completion time. The team that finishes in the shortest time shall be declared the winner.
- In the event of a tie in both score and time, the judges shall administer a do-or-die question to determine the winner.
- For station/s with written output and oral presentation, and slide deck refer to the criteria below:

Written Output:

Criteria	Score
Content Thematic Relevance and Organization	8
Feasibility of the proposed solution/output (Based on scientific, mathematical, technological, and other valid assumptions)	6
Relevance of data used	6
Total	20

Oral Presentation:

Criteria	Score
Discussion/Arguments/Delivery (Based on scientific, mathematical, technological, and other valid assumptions, the feasibility of the proposed solution)	8
Content / Organization	5
Ability to answer the questions	7
Total	20

Slide Deck Presentation (for High School only):

Criteria	Score
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	Problem Analysis and Engineering Design Process	4
	Engineering Design Solution	6
	Scientific and Mathematical Justification	6
	Feasibility and Practicality	4
	Total	20
• Written output, oral presentation and slide deck activities shall be placed under the difficult categories. • Refer to the scoring rubric for reference.		
MECHANICS		
A. Pre-Competition Requirements/Rules • Teams must complete registration, either online or offline, before the event. • Submission of Regional Team Registration Forms, including the following: ◦ Region number and name ◦ Division/Schools Division Office ◦ Name of Regional Science and Mathematics Supervisor ◦ Name of Division Science and Mathematics Supervisor • Team Composition Details: ◦ Official team name representing the region ◦ Grade levels of each member ◦ Certified true copy of school records proving grade levels ◦ Regional team coach/adviser information with designation ◦ Replacement of participants due to valid reasons, such as but not limited to sickness, is allowed, provided that it is duly endorsed by the regional director. • Drawing of lots for the number assignments of participants will be done in the presence of all participants and coaches or respective representatives prior to the start of the competition. • An online orientation session will be conducted before the competition proper. ☐ Orientation session shall cover: • Competition mechanics • Safety protocols • Equipment usage • Scoring system • Emergency procedures ☐ Q&A portion • Equipment and Documentation Verification • Pre-Event Documentation Checklist: ◦ Individual Participant Form with parent consent ◦ Medical Certificate ◦ Equipment Checklist if any • Equipment Inspection: ◦ Calculator ◦ Measuring tools ◦ Writing materials ◦ Digital devices (if allowed)		

- Safety equipment
- All teacher-coaches will accompany participants in the venue, but not in the contest venue. They cannot assist the participants during the competition.
- The event administrator will signal the start of the event. Only the event facilitators, Program Management Team (PMT), judges, official photographers, and learner-participants are allowed to be at the contest venue.
- The event facilitator, members of the Program Management Team, and Board of Judges shall be in the venue at least one (1) hour before the event, while the learner-participants, teacher-coaches, and other audiences must be in the venue at least thirty (30) minutes before the competition. Late participants may be permitted to join upon thorough assessment of their reasons by the PMT.
- Briefing of the learner-participants shall be conducted at least thirty (30) minutes before the start of the event. All questions, clarifications, and points of order shall be entertained during the briefing.
- Learner-participants shall wear plain white T-shirt and comfortable pants and rubber shoes or sneakers with no school/SDO/RO identification.

B. During Event / Competition Structure

B.1 Elementary

- Teams navigate shall through multiple stations.
- The total number of stations shall be a minimum of seven (7) and a maximum of ten (10). Moreover, the difficult category must have the fewest number of stations. The majority of the challenges shall focus on Mathematics competencies. A sample distribution of stations per category is shown below:

Sample Distribution of the Number of Stations per Category

Category	Number of Stations		
	8	9	10
Easy	3	4	4
Average	3	3	4
Difficult	3	3	4

- The number of stations per category shall be flexible, allowing the organizer to determine the distribution based on factors such as the nature of challenges, availability of materials and equipment, and the contest venue.
- Sample distribution of stations and points is shown below:

Sample 1

Category	Station	Maximum Points
Easy	1	10
	2	10
	3	10
Average	4	15

Sample 2

Category	Station	Maximum Points
Easy	1	5
	2	5
	3	10
	4	10

	5	15
Difficult	7	20
	8	20
Total		100

Sample 3

Category	Station	Maximum Points
Easy	1	30
Average	2	30
Difficult	3	40
Total		100

Average	5	10
	6	10
	7	10
Difficult	9	20
	10	20
Total		100

- Challenges include:
 - Application of scientific and mathematical concepts and analysis of real-world data,
 - Developing scientific and mathematical solutions and solving problems, and
 - Presenting solutions and findings.
- Each team shall start at station 1. The next team will proceed after the time interval set by the PMT, based on the nature of the task.
- If the venue and resources can accommodate all teams simultaneously, they may start at the same time. However, if space or materials are limited, teams will complete the tasks in batches. Teams waiting for their turn will remain in the designated waiting areas until called.
- Each station will be equipped with sufficient materials and equipment to accommodate at least five teams simultaneously.
- Each station shall have a time limit for completing the task, which shall be determined by the organizer. A digital timer will be provided at every station, which the teams must activate by themselves when they begin their task and deactivate once they finish or choose to discontinue.
- For challenges involving oral presentation, each team presentation shall be limited to two (2) minutes only, and followed by a five (5)-minute Question and Answer (Q&A) session.
 - All judges may ask questions, provided the Q&A remains within the allocated five-minute timeframe.
 - Each team must complete their presentation within two (2) minutes. For every additional minute beyond the allotted time, one (1) point will be deducted from the team's score for that station.
 - A timer shall be assigned for the task.
- Participants are not permitted to return to any previous station they chose to discontinue, even if they still have remaining time. Returning to discontinued stations will result in disqualification from the contest.
- Before the participants are called for the oral presentation, they will stay in a designated holding area.
- The total maximum time allotted to complete the whole STEMazing challenge is 180 minutes.

- Contest facilitators at each station will validate the team's answer or output.
- Any form of communication between the participants and other parties (e.g., coach, parents, classmates, teachers, etc.) shall warrant automatic disqualification from the competition.
- At the end of the competition, the group with the highest cumulative score will be declared the overall champion. In case of a tie, a tie-breaker question will be given.
- The decision of the judges shall be final and irrevocable.

B.2 High School

- Teams shall navigate through multiple stations.
- There shall be seven (7) stations for STEMazing High School.
- Stations 1–5 shall focus on the demonstration of skills and learning competencies in Science and Mathematics, while Stations 6 and 7 shall assess participants' ability to integrate and apply these learning competencies through engineering design process, innovation, communication, and collaborative problem solving in response to a real-world STEM challenge.
- Majority of the challenges shall focus on Science competencies.
- The number of stations per category shall be flexible, allowing the organizer to determine the distribution based on factors such as the nature of challenges, availability of materials and equipment, and the contest venue.
- Sample distribution of stations and points is shown below:

Category	Station	Maximum Points
Easy	1	10
	2	10
	3	10
Average	4	15
	5	15
Difficult	6	20
	7	20
TOTAL		100

- Challenges shall include:
 - ✓ Application of scientific and mathematical concepts and analysis of real-world data,
 - ✓ Developing scientific and mathematical solutions and solving problems through Engineering Design Process (EDP), and
 - ✓ Presenting solutions and findings.
- Each team shall start at station 1. The next team will proceed after the time interval set by the Technical Working Group (TWG), based on the nature of the task.
- If the venue and resources can accommodate all teams simultaneously, they may start at the same time. However, if space or materials are limited, teams will complete the tasks in batches. Teams waiting for their turn will remain in the designated waiting areas until called.
- Each station will be equipped with sufficient materials and equipment to accommodate at least five teams simultaneously.

- Each station shall have a time limit for completing the task, which shall be determined by the organizer. A digital timer will be provided at every station, which the teams must activate by themselves when they begin their task and deactivate once they finish or choose to discontinue.
- For Station 6 (Slide Deck Making), only one problem scenario shall be given to all participants. Moreover, the station shall cover a maximum of sixty (60) minutes.
- For Station 7 (Oral Presentation), each team presentation shall be limited to three (3) minutes followed by a maximum of seven (7)-minute Question and Answer (Q&A) session.
- All judges may ask questions, provided the Q&A remains within the allocated seven (7)-minute timeframe.
- Each team must complete their presentation within three (3) minutes. For every additional minute beyond the allotted time, one (1) point will be deducted from the team's score for that station.
- A timer shall be assigned for the task.
- Participants are not permitted to return to any previous station they chose to discontinue, even if they still have remaining time. Returning to discontinued stations will result in disqualification from the contest.
- The total maximum time allotted to complete the whole STEMazing challenge is 150 minutes.
- Checkpoint marshal/s at each station shall collect the team's answer or output.
- Any form of communication between the participants and other parties (e.g., coach, parents, classmates, teachers, etc.) shall warrant automatic disqualification from the competition.
- At the end of the competition, the group with the highest cumulative score will be declared the overall champion. In case of a tie in both cumulative score and time, a tie-breaker question will be given.
- A Terms of Reference for the Program Management Team (PMT), Activity Host, Station Marshall, Supervising Marshall, and the Judges shall be provided.
- The decision of the judges shall be final and irrevocable.

C. Safety and Compliance

☐ **General Safety Protocols**

- Teams must stay within designated safe zones
- Mandatory use of specified safety equipment
- Access to water stations and rest areas
- Compliance with station-specific safety guidelines

☐ **Supervision and Support**

- Station Masters present at each checkpoint
- Recognizable medical team on standby throughout the competition
- The safety officer will oversee all activities
- There must be a technical support team for digital components

☐ **Emergency Response Procedures**

- Medical emergency response protocol
- Weather emergency contingency plans
- Technical failure backup systems
- Lost team search and recovery procedure

☐ **Incident Management**

- Immediate reporting to Safety Officer
- Documentation through incident report forms
- Implementation of appropriate response measures
- Post-incident analysis and documentation

- **Scoring and Awards**

☐ **Scoring System Implementation**

- Digital real-time scoring through station verification
- Individual judge scoring followed by panel consensus
- Final verification by Head Judge and Technical Committee

☐ **Award Categories**

- Main Awards:
 - Overall Champion (Medals + Certificates)
 - First Runner-up (Medals + Certificates)
 - Second Runner-up (Medals + Certificates)
 - Third Runner-up (Certificates)
 - Fourth Runner-up (Certificates)
- Recognition:
- Certificates of recognition for all competing students
 - Certificates of recognition for all coaches

E. Post Competition Rule

The main hall and waiting rooms shall be cleaned and organized by the participants before leaving their respective areas.

Terms of Reference

A. The Program Management Team (PMT) shall:

- ✓ Ensure the systematic and smooth conduct of the event.
- ✓ Coordinate with the Event Focal regarding preparations and requirements.
- ✓ Provide technical support as needed during the activity.
- ✓ Supervise the overall readiness and smooth execution of the contest.

B. The Host shall:

- ✓ Assist the PMT in ensuring the successful conduct of STEMAzing.
- ✓ Lead the group in the preparation, execution, and post-activity tasks regarding:
 - a. Venue setup and cleanliness
 - b. Manpower deployment
 - c. Materials management
 - d. Safety and risk management
- ✓ Ensure the billeting quarters and working areas for the Technical Working Group (TWG) are ready and properly arranged.
- ✓ Provide support to the Event Manager in coordinating personnel and logistics during the event.

C. The Event Facilitator shall:

- ✓ Record the beginning and end time of each team in the assigned station.

- ✓ Ensure that answer sheets are properly placed inside the envelope assigned to each team.
- ✓ Endorse all completed envelopes in the station to the Judges.
- ✓ Check the completeness of materials in the assigned station before and during the activity.
- ✓ Assist in the placement of markers, tables, and other related materials needed for the station.
- ✓ Provide technical assistance limited to the provision of necessary materials only.
- ✓ Refrain from coaching, giving hints, or assisting teams in answering tasks.
- ✓ Maintain order and proper documentation within the assigned station.

E. The Judges shall:

- ✓ Be a specialist in the field of STEM.
- ✓ Review competition guidelines and scoring rubrics.
- ✓ Evaluate the outputs based on originality, scientific accuracy, practical application, clarity, and teamwork.
- ✓ Provide impartial scores and constructive feedback.
- ✓ Maintain confidentiality of deliberations and declare any conflict of interest.

Engineering Design Challenge for High School

The Engineering Design Challenge provides participants with an authentic, contextualized STEM problem that requires the application of scientific knowledge, mathematical reasoning, engineering principles, and critical thinking to develop an innovative and feasible solution. The challenge is intended to simulate real-world engineering practice by engaging learners in the Engineering Design Process (EDP), where they analyze a problem, identify design criteria and constraints, generate and justify a solution, and effectively communicate their proposed design.

The focus of the challenge is not solely on arriving at a correct answer, but on demonstrating a systematic and evidence-based design process. Participants are expected to integrate concepts from Science and Mathematics, consider practical constraints and societal needs, and propose solutions that are technically sound, creative, sustainable, and responsive to the given context.

To provide flexibility while ensuring consistency in judging, teams may organize and present their ideas using a format of their choice. However, the presentation must clearly demonstrate the essential components of the Engineering Design Process and address all required contents prescribed in these mechanics. The presentation shall serve as the official basis for the oral presentation and the question-and-answer session.

Required Contents of the Presentation Deck

The presentation deck shall clearly communicate the team's engineering design solution to the given challenge. While the sequence and organization of the presentation are left to the discretion of the team, the presentation **must include** the following components:

1. **Problem Statement**
Clearly define the engineering problem or challenge to be addressed.
2. **Needs, Criteria, and Constraints**
Identify the intended users or stakeholders, design requirements, success criteria, and relevant constraints (e.g., cost, materials, time, safety, sustainability, environmental impact).
3. **Background Research and Analysis**
Present relevant scientific and mathematical concepts, data, evidence, or contextual information that informed the team's understanding of the problem.
4. **Proposed Engineering Solution**
Describe the proposed solution and explain how it addresses the identified problem and satisfies the stated criteria.
5. **Design Representation**
Include a labeled sketch, schematic, flowchart, diagram, or conceptual illustration sufficient to explain the proposed design.
6. **Scientific and Mathematical Justification**
Explain the scientific principles, engineering concepts, mathematical reasoning, calculations, or evidence supporting the proposed design.
7. **Implementation Plan**
Describe how the proposed solution could be developed or implemented, including the major steps, required resources, and practical considerations.

8. **Evaluation of the Proposed Design**

Explain how the effectiveness of the proposed solution may be evaluated, including anticipated outcomes, potential limitations, possible risks, and opportunities for improvement.

9. **References**

Properly acknowledge all sources of information, data, images, and other materials used in developing the presentation.

10. **AI Use Declaration**

The presentation shall include a declaration indicating whether Generative Artificial Intelligence (AI) tools were used in preparing the presentation. If AI tools were used, the team shall specify the tool(s) used, the purpose of use, and affirm that the team's analysis, engineering decisions, and final presentation are their own work and that all AI-generated content has been critically reviewed and verified for accuracy.

Presentation Requirements

- The presentation shall consist of **not more than ten (10) content slides**, excluding the title slide.
- The organization, sequence, visual design, and layout of the presentation shall be determined by the team.
- All required contents listed above must be addressed in the presentation.
- You may use any slide deck application and any other application to enhance your presentation.
- The submitted presentation shall serve as the official basis for the oral presentation and the subsequent question-and-answer session.

Enclosure 4 to Division Memorandum No. [0398](#) s. 2026

**DIVISION SCIENCE, TECHNOLOGY AND MATHEMATICS FAIR, STEMazing AND
ROBOTICS OLYMPICS FOR SY 2026 - 2027**

PROGRAMME OF ACTIVITIES

September 4, 7 and 8, 2026
Ligao City National Technical Vocational High School

TIME	September 4, 2026 STEMazing	September 7, 2026 Division Science, Technology and Math Fair and Robotics Olympics	September 8, 2026 Division Science, Technology and Math Fair and Robotics Olympics
7:30 – 8:15	Registration	Registration	Registration
8:15 – 9:00	Opening Program	Orientation of Contest Guidelines and Mechanics	Continuation of Robotics Olympics (Secondary)
9:00 – 12:00	STEMazing (Elementary and Secondary Level)	Contest Proper: Math Quiz (Elem and Secondary) Science Quiz (Elem and Secondary) TUKLAS Research (Secondary)	Continuation of Robotics Olympics Consolidation of Results
12:00 – 1:00	Lunch Break	Lunch Break	Lunch Break
1:00 – 2:00	Consolidation of Results	TUKLAS Research (Secondary) Robotics Olympics (Elementary)	Awarding Ceremony for TUKLAS Research and Robotics Olympics
2:00	Awarding Ceremony for STEMazing	TUKLAS Research (Secondary) Robotics Olympics (Secondary)	
3:00 – 5:00		TUKLAS Research (Secondary) Robotics Olympics (Secondary) Awarding Ceremony for Math and Science Quiz	

Enclosure 5 to Division Memorandum No. [0398](#) s. 2026

EXECUTIVE COMMITTEE

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Asst. Schools Division Superintendent

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Agnes P. Rabelas – Catburawan ES
Ester L. Maligaya – Tinago ES
Saturnino L. Macasinag, Jr. – Ligao NHS
Aurea Kristine A. Olavario – Oma-Oma ES
LCNTVHS Teaching and Non-Teaching Personnel
Klien P. Odiem – SDO Ligao, CID
SDO Medical Officer/Nurse