



Republic of the Philippines
Region VII, Central Visayas
SCHOOLS DIVISION OF NEGROS ORIENTAL
www.depednegor.net

DIVISION MEMORANDUM


No. S17 , s. 2017

September 20, 2017

GUIDELINES OF 2017 DIVISION SCIENCE FAIR

TO: Assistant Schools Division Superintendent
CID and SGOD Chief
Education Program Supervisors/Division Coordinators
Public Schools District Supervisors/District in Charge
School Heads of Public and Private High School & Elementary

1. The Division Science Fair will be on **October 14, 2017, Saturday** at Negros Oriental High School, Gymnasium, Dumaguete City.
2. The participants of this division science fair are the first place winners of the SIP, SIM, QUIZ contest done in the congressional district fairs held in each congressional districts, except robotics where the contest is done in the division level only.
3. The Science Investigatory Project (SIP) competition will follow the GUIDELINES ON THE NATIONAL SCIENCE AND TECHNOLOGY FAIR 2016-2017. (Please see attached guidelines of SIP and Robotics))
4. There will be a division quiz by year level, participated by first place winners in the congressional level. First place winners are requested to bring slate board and eraser for use during the division level contest. (Please see attached Quiz Mechanics)
5. The coverage of the quiz is the entire curriculum level it represents for grades 5, 7,8, 9 while for grade 6 the coverage is the entire elementary science and in grade 10 it is the entire secondary science.
6. The Strategic Intervention Material (SIM) contest is done by year level from grade 5 to grade 10 but only one elementary and one secondary SIM will join the regional contest. The participants are science teachers. (Please see attached criteria for SIM)
7. Teaching and non-teaching DepEd personnel that render services on October 7, 2017 for the third congressional Science Fair and on Oct. 14, 2017, Division Science Fair is entitled to service credit or compensatory time off (CTO).
8. Enclosed is the list of working committees and its composition.
9. School Heads and District Supervisors/District In-Charge are requested to disseminate this information to all concerned teachers and students.


SALUSTIANO T. JIMENEZ, CESO VI
Schools Division Superintendent *ae*
90 9/26/17

25 SEP 2017

GUIDELINES ON THE NATIONAL SCIENCE AND TECHNOLOGY FAIR 2016-2017

Similar to the previous national level fair, the National Science and Technology Fair (STF) for 2016-2017 is an Intel ISEF-affiliated fair. As such, the requirements for affiliated fairs should be met and followed as stated in the ISEF guidelines mentioned on page 2 of this Memorandum.

1. The Science Fair

The Bureau of Curriculum Development of the Department of Education (DepEd-BCD) shall conduct the **National STF 2016-2017** on **13-17 February 2017**.

The STF is a nationwide science research competition that aims to promote Science and Technology consciousness among the youth. It also aims to identify the most creative and the best Science student researchers who will represent the country in the Intel International Science and Engineering Fair 2017 (Intel ISEF 2017) and other international/regional science and technology fairs.

2. The Research Competitions

The competitions will be conducted among Junior and Senior High School students from both public and private schools. The first place winners in each of the categories at the Regional level shall represent the region to the National STF competition as approved by the national Scientific Review Committee (SRC).

The competition will start at the school level advancing to the division, regional, national then to the international level. Regional Science High Schools (RSHSs) are **expected** to join the regional fair directly. RSHSs may submit only one entry per category or a maximum of six (6) projects in the regional fair.

The participation of schools in the NSTF shall be clustered into three types: life science, physical science, and robotics and intelligent machines. All mathematics- and engineering-related projects shall join in the Physical Science Category.

Life Science (LS)		Physical Science (PS)		Robotics and Intelligent Machines (RIM)	
Individual Project	Team Project	Individual Project	Team Project	Individual Project	Team Project

3. Levels of Research Competition

School/Division Level

The conduct of the school/division level shall be done on a weekend to conform with DepEd Order No. 26, s. 2010 (Calendar of School Events and Activities For SY 2010-2011). The school and division level STF should refer to Enclosure No. 3 for the schedules of the competition.

The following are the forms and manuscripts to be submitted in all levels of the competition:

1. RESEARCH PLAN
2. FORMS for all the projects
 - A. Checklist for Adult Sponsor
 - B. Student Checklist (1A)

- C. Research Plan (NOTE: No need to attach the Research Plan Instructions)
 - D. Approval Form (1B)
 - E. Regulated Research Institutional/Industrial Setting Form (1C)
3. FORMS depending on the type of research (e.g involving humans, vertebrate animals, hazardous chemicals, etc.)
- A. Qualified Scientist Form (2)
 - B. Risk Assessment Form (3)
 - C. Human Participants Form (4)
 - D. Human Informed Consent Form
 - E. Vertebrate Animal Form (5A)
 - F. Vertebrate Animal Form (5B)
 - G. Potentially Hazardous Biological Agents Risk Assessment Form (6A)
 - H. Human and Vertebrate Animal Tissue Form (6B)
 - I. Continuation Project Form (7)
4. Abstract (Maximum of 250 words)
The abstract should include the following:
- A. Purpose of the experiment
 - B. Procedure
 - C. Data conclusion
- The abstract may NOT include the following:
- A. Acknowledgement
 - B. Work of procedures done by the mentor
- 5. Research Paper (Include the Title Page, Abstract, Main Body, and References)
 - 6. Project Evaluation Form (see Enclosure No.8)
 - 7. Scanned copy of the log book

Project of proponents should have been screened by the Institutional Review Board (IRB)/SRC at the school-level. All school level winners must be certified by the division SRC to join in the division-level fair.

The Division Science/Mathematics Supervisor shall be a member of the BOJ who shall determine the school/division winners of the different categories and fair divisions.

With the exception of RSHSs and PSHSs, students of both regular and science high schools of private and public high schools shall participate in the division-level STF.

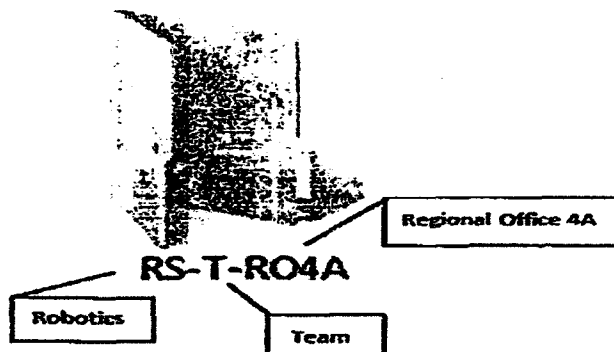
Winners at the school level should be officially endorsed to the division office for the division-level. Likewise, the division-level winners should be officially endorsed to the regional office.

Regional Level

The first place winners at the division level in both clusters shall be properly scrutinized by identified members of the SRC for the regional level competition.

The official list of the **first place winners at the regional level**, report on the conduct of STF, soft copies of the manuscripts and other necessary documents shall be officially **endorsed by the Regional Office to DepEd Central Office through the BCD**. The soft copies must be saved in the CD containing six (6) folders representing the six (6) categories. Each folder must contain the manuscripts in Pdf format and another folder containing all the required forms including the scanned copies of the research logbook.

Example:



Folder Code	Content of the Folder	Sample Content of the folder for Forms
LS-I-RO1 *life science-individual-region 1	Manuscript: LS-I-RO1-School Name	
	Folder containing the needed forms: LS-I-RO1-Forms *name of the folder where all the soft copies of the necessary forms are found	LS-I-RO1-Form 1
		LS-I-RO1-Form 2
		LS-I-RO1-Logbook

The Report of the Conduct of the STF shall include the following:

1. Title
2. Table of Contents
3. Introduction/Rationale
4. Detailed Information
 - General information
 - SRC Deliberation (include the results , findings and recommendations)
 - Program of Activities (day-to-day activities)
 - List of Entries (include the brief profile of the research adviser of each entry)
 - List of Winners
 - Trend Analysis (results from 3 consecutive years)
 - Financial Report
5. Conclusions
6. Recommendations
7. Appendix

National Level

The First Place winners of the six (6) categories shall represent the region to the national-level STF to be conducted on February 13-17, 2017 at a venue to be announced later.

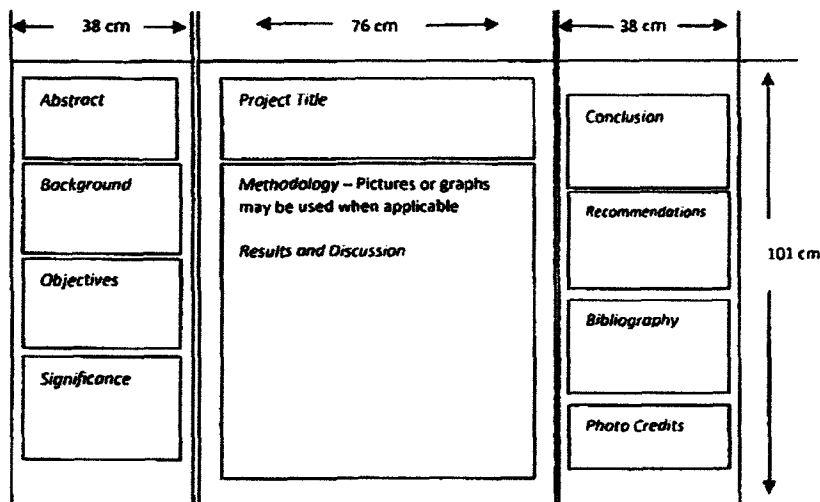
4. The Research Project

Science research projects must conform with international rules published by the *Intel International Rules for Pre-college Science Research: Guidelines for Science and Engineering Fair 2017*. Each project is expected to have a Research Adviser and an Institutional Review Board (IRB) or a Scientific Review Committee (SRC).

The research project should cover a maximum of twelve (12) continuous months from January 2016 to December 2016.

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

5. The Exhibit



5.1 Display and Safety Regulations

The project display using sets of any paper or board summarizes the research project and must focus on the proponent's work for this year's study, and if applicable, with only minimal reference to previous research. Tarpaulins will **not** be used in the NSTF in support of the environmental advocacy of the government in reducing the consumption of non-biodegradable or non-recyclable materials.

The safety regulations that must be adhered to should be consistent with the guidelines found on page 24 of the ISEF guidelines (<http://www.societyforscience.org/isef/rulesandguidelines>).

The following items should be seen in the project display: Abstract, Background, Objectives, Significance, Methodology, Results and Discussion, Conclusion,

Recommendations, Bibliography and if applicable, Photo Credits (including illustrations and graphics).

Note that a proponent should not include his/her face in the project's procedure/ illustration in the display.

5.2 Requirements for presentation by the Project Proponent/s to the BOJ during the exhibit are the following:

- Copy of the required forms
- Copy of the research write-up
- Project data book or student journal complete with dates of entry, number of pages, and all other details (Refer also at ISEF Student Handbook website: <https://member.societyforscience.org/document.doc?id=632>).

6. In addition to the usual research competition, there shall also be other activities within the fair as described below.

6.1 Pinoy Robot Games

Pinoy Robot Game is an annual national robotics competition affiliated to the National Science and Technology Fair organized by the DepEd. It aims to promote the use of technology in learning and aids in the development and application of both basic and integrated science process skills as applied in real life settings. The participants are given opportunities to apply and further develop various skills such as information, technology, innovation and critical thinking skills as applied to the design, creation and programming of their self-made robots. The event supports DepEd in achieving its K to 12 target to produce holistically developed Filipino learners with 21st century skills. The grand award winners of this event shall participate in the **World Robot Games** to be held in **Singapore on August 2017**.

The competition is divided into different categories such as

- **Sumobot**
This category enables the participants to design a robot that will locate and knock its opponent out of the ring while detecting the outside circle should an escape move be necessary.
- **Line Tracingbot**
This category aims to create a robot that will be able to detect a particular line and keep following it.
- **Fire Fighting Robot (Autonomous)**
This is a robotics game where a robot must autonomously navigate through a mock home with multiple rooms and with a candle randomly placed in one of the rooms, simulating a house on fire. The robot needs to find the candle and put it out. The main challenge of this contest is to build an autonomous computer-controlled robot that can find its way through an arena that represents a model house, find a lit candle that represents a fire in the house, and extinguish the fire in the shortest time. This task simulates the real-world operation of an autonomous robot performing a fire protection function in a real house. The goal of the contest is to advance robot technology and knowledge while using robotics as an educational tool. This game category is open to Junior and Senior High School participants.

- **Innovative Robot (Remote Control / Autonomous)**
The innovative robot category is one that allows teams to innovate, design and build their robots according to the current year's theme. A sample is Saving the Rivers where teams are to create innovative robot designs to be able to clean, clear, or even recycle the waste that is causing the pollution in our rivers today. There are no strict rules for this category including the judging criteria for the robots. A special panel of judges who are experts in the topic will be selected by the committee for this category. The judging criteria may include design, efficiency, technical competency, aesthetics, and practicality among others. This game category is open to Junior and Senior High School participants.
- **Humanoid Challenge (Penguin Wars)**
This is a robotics game where participants control an articulated two-legged humanoid robot to score goals in opponent's side. The robots can be programmed or remote-controlled. The robot's task is to put colored balls in the opponent's side either by kicking, picking, or throwing the ball. Understanding of humanoid's mechanics and strategy is important and cooperation with teammates is required. This game category is open for Junior and Senior High School participants.

6.2 Innovation Expo

Innovation Expo is an annual event designed to promote innovation among the learners and industry partners. It aims to crowd-source and display science and technology innovations and solutions to everyday challenges. The exhibit will be open to all sectors, public and private, subject to approval of their proposed exhibit/demo by NSTF management and payment of a registration fee. Sale of products and services will not be allowed.

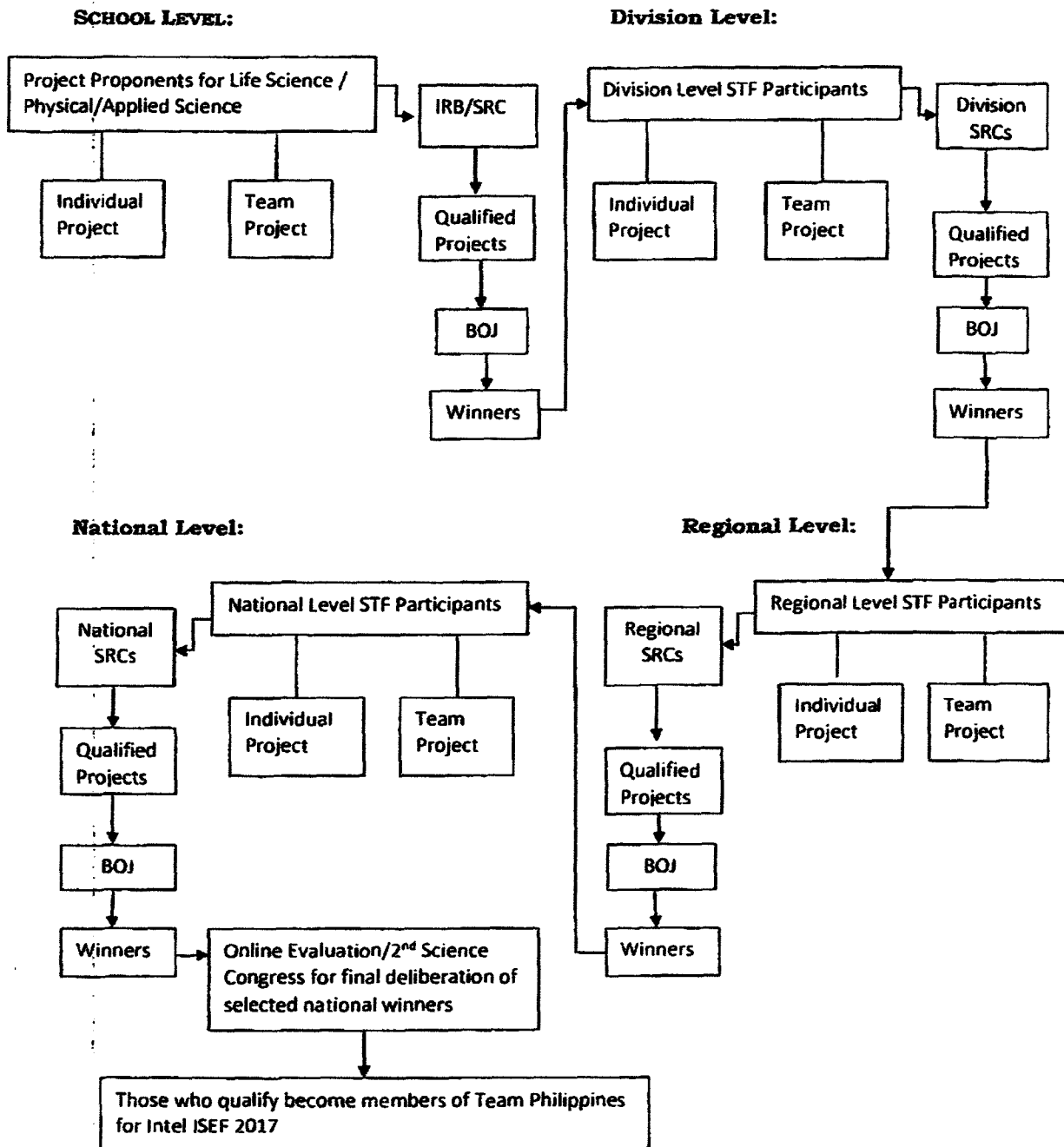
For more information about **Pinoy Robot Games** and **Innovation Expo** please contact **Mr. Denis Dyvee R. Errabo** at (02) 632-7746 or email at nstfsecretariat@gmail.com for details.

6.3 NSTF Educators Academy

NSTF Educators Academy is an event for the official adult participants of NSTF which may include research advisers, adult-in-charge, science supervisors and school heads. This gives the participants opportunity for learning and development through the attendance in various shop talks designed to promote innovation, creativity and excellence in science and research education. The topics are selected to assist educators in managing science programs in their respective areas such as schools, division, districts and regions. The event also gives research advisers and experts an opportunity to share their best practices that benefit the adviser and supervisors in assisting student science research initiatives. Pre-registration to this activity is required.

(Enclosure No. 2 to DepEd Memorandum No. 176 s. 2016)

SCHEMATIC DIAGRAM OF THE FLOW OF STF ACTIVITIES



(Enclosure No. 4 to DepEd Memorandum No. 176 s. 2016)

Format of Research Paper

Investigatory papers that were reviewed by the national SRCs in the past years were found to have inadequacies in the content, particularly in the areas cited below. To ensure that the investigatory papers are of good quality, students must adhere to the guidelines shown below. These can be found in the Guidelines and in the Student Handbook and Research Plan Instructions published in the website (<https://www.societyforscience.org>).

I. Research Plan: (This is compiled separately from the rest of the investigatory paper):

All projects should include the following:

- A. Question or Problem being addressed
- B. Goals /Expected Outcomes /Hypotheses
- C. Description in detail of method or procedures (The following are important and key items that should be included when formulating ANY AND ALL research plans.)
 - Procedures: Detail all procedures and experimental design to be used for data collection.
 - Data Analysis: Describe the procedures to be used to analyze the data/results that answer research questions or hypotheses.
- D. Bibliography: List at least five (5) major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

II. Project Data Book:

A project data book is your most treasured piece of work. Accurate and detailed notes make a logical and winning project. Good notes show consistency and thoroughness to the judges and will help you when writing your research paper. Data tables are also helpful. They may be a little 'messy' but be sure the quantitative data recorded is accurate and that units are included in the data tables. Make sure you date each entry.

III. Research Paper:

A research paper should be prepared and available along with the project data book and any necessary forms or relevant written materials. A research paper helps organize data as well as thoughts. A good paper includes the following sections.

- a) **Title Page and Table of Contents:** The title page and table of contents allows the reader to follow the organization of the paper quickly.
- b) **Introduction:** The introduction sets the scene for your report. The introduction includes the purpose, your hypothesis, problem or engineering goals, an explanation of what prompted your research, and what you hoped to achieve.
- c) **Materials and Methods:** Describe in detail the methodology you used to collect data, make observations, design apparatus, etc. Your research paper should be detailed enough so that someone would be able to repeat the experiment from the information in your paper. Include detailed photographs or drawings of self-designed equipment. Only include this year's work.

- d) **Results:** The results include data and analysis. This should include statistics, graphs, pages with your raw collected data, etc.
- e) **Discussion:** This is the essence of your paper. Compare your results with theoretical values, published data, commonly held beliefs, and/or expected results. Include a discussion of possible errors. How did the data vary between repeated observations of similar events? How were your results affected by uncontrolled events? What would you do differently if you repeated this project? What other experiments should be conducted?
- f) **Conclusions:** Briefly summarize your results. State your findings in relationships of one variable with the other. Support those statements with empirical data (one average compared to the other average, for example). Be specific, do not generalize. Never introduce anything in the conclusion that has not already been discussed. Also mention practical applications.
- g) **Acknowledgements:** You should always credit those who have assisted you, including individuals, businesses and educational or research institutions. However, acknowledgments listed on a project board are a violation of D & S Display rules and must be removed.
- h) **References/Bibliography:** Your reference list should be written based on the Chicago Manual of Style. For more information, you may visit the websites below:

- <http://www.chicagomanualofstyle.org/home.html>
- <http://www.calvin.edu/library/knightcite/index.php>

IV. Abstract:

After finishing research and experimentation, an abstract should be written. This needs to be a maximum of 250 words on one page. It should include the a) purpose of the experiment, b) procedures used, c) data, and conclusions. It also may include any possible research applications. Only minimal reference to previous work may be included. The abstract must focus on work done in the current year and should not include a) acknowledgments, or b) work or procedures done by the mentor. See below for examples of award winning abstracts. See page 27 of the International Rules for the proper formatting of an Official Intel ISEF Abstract and Certification. Please Note: The official abstract form is only for those participating in ISEF. This form may not be required for other levels of competition.

Sample Abstracts

<p>2002 ISEF First Grand Award, Physics</p>	<p>2002 ISEF First Grand Award, Microbiology</p>
<p>A Novel Application of Locally Formulated Cholesteric Liquid Crystals in Dosimetry</p>	<p>Antibiotic Substance Obtained from the Parotid Gland Secretions of the Toad (<i>Bufo marinus</i>)</p>
<p>By Estrella, Allan N., Macalintal, Jeric V., Manapat, Richard K.S. Adviser: Mr. Jonathan Derez Manila Science High School</p>	<p>By Rara, Prem Vilas Fortran M. Adviser: Dr. Jose M. Oclarit Integrated Development School-MSU-Iligan Institute of Technology</p>
<p>Radiation has many industrial and economic uses. However, it poses a danger on those people working near it. To settle with this, dosimetry was introduced. Many kinds of dosimeters such as silver halides, thermoluminescent dosimeters, and semiconductor dosimeters were developed. This study focuses on the potential use of liquid crystals as a dosimeter.</p> <p>Three mixtures of liquid crystals were prepared using nematic E48, cholesteric TM74A and Canola oil synthesized cholesteric liquid crystal with mass ratios (E48: TM74A) of Mixture A (Mixture A), 30:70 (Mixture B) and (E48: Canola) 30:70 (Mixture C). The liquid crystals were then mounted to cells made from polyethylene sheets. Three samples were prepared for each mixture. The samples were then exposed to cobalt-60 for gamma radiation with doses of 2.5 kgy, 5 kgy, 10 kgy, 15 kgy, 20 kgy, 25 kgy and 30 kgy. After each exposure, the samples were observed and color changes were noted.</p> <p>Color changes corresponding to different gamma radiation dose were observed in all samples. In all responses, the grand jean texture of the liquid crystals was restrained suggesting that the energy that was absorbed did not induce any chemical change. However, observed color changes indicated 'unwinding' of the pitch of the helical conformation for the TM74A-based formulation (Mixtures A and B) and 'winding' for the Canola-based liquid crystals (Mixture C). The application of liquid crystals in dosimetry was determined due to the color changes.</p>	<p>The study showed an antibiotic substance was obtained from the parotid secretions of a toad (<i>Bufo marinus</i>). This was isolated by extraction with methanol and initial purification by thin-layer and gravity column chromatography using aqueous methanol in varying concentrations as solvent. The crude extract was assayed on three test microorganisms (<i>Escherichia coli</i>, <i>Bacillus subtilis</i> and <i>Aspergillus niger</i>). Commercial antibiotics (Streptomycin and Penicillin) were used as controls to compare the potency of the compound. All test organisms were inhibited by the isolated compound, showing similar potency as that of the control antibiotics.</p> <p>Out of 30 fractions that were obtained from the gravity column chromatography only fractions 27-30 inhibited bacteria but not fungi, although at the initial experimentation, the crude extract, revealed effective inhibition against <i>Aspergillus niger</i>, a fungal test microorganism. Further purification of the active fractions using high performance liquid chromatography (HPLC) with aqueous methanol yielded a compound with retention time of 3.74 minutes. The compound was collected and assayed on the same test microorganisms. The active compound inhibited <i>E. Coli</i> and <i>B. Subtillis</i> at 30 and 40 mm, respectively. Infra Red (IR) spectrometry revealed amine, alkene and alkyl halides as functional groups. These spectrometric data revealed a trace of peptide spectra suggesting that the antibiotic principle is peptide-like molecule. Bioassay of this compound demonstrated a comparable degree of antibiotic potency as that of streptomycin and penicillin with maximum inhibition of 45 mm in <i>B. subtilis</i> and 34 mm in <i>E. coli</i>.</p>

(Enclosure No. 6 to DepEd Memorandum No. 176, s. 2016)

CHECKPOINTS FOR SRC REVIEW

Source: Society for Science and the Public

This document was developed to provide guidance for the Scientific Review Committee to review a project after experimentation.

ABSTRACT

Review the abstract text and checkboxes keeping the following questions in mind, and then review the information provided on each form to see if it answers the questions, has any inconsistencies, etc. that will require follow up.

Did the area of study require **PRE-APPROVAL?**

Human Participants Does the study mention people, interviews, responses, answers, consent, etc? (requires Form 4). Exempt studies include product testing, public data review, some observational studies.

Animals Look for indications of type of study and research site. Strictly observational studies with no interaction are exempt. Tissue studies in which the student is given the tissue and did not interact with the animal do not need animal forms but will still need pre-approval as a PHBA [Potentially Hazardous Biological Agents] tissue study.

A. Projects may be conducted at home, school, or field ONLY IF the study involved agricultural, behavioral, observational, or supplemental nutrition AND was non-invasive AND had no negative effects on health and wellbeing (requires Form 5A).

B. Projects must be conducted at research institution with IACUC [Institutional Animal Care and Use Committee] in all other cases (requires Form 5B).

PHBA's Study included microorganisms, rDNA, or fresh/frozen tissue, blood, body fluids. Used terms like culturing, plating, tissue, source of tissue, etc. Exemptions include non-primate established cell lines, yeast, lactobacillus, meat from a grocery store, and other items listed in the rules (requires Form 6A; Tissue study, requires Form 6A & 6B)

Was the study done at a **Regulated Research Institute/Industrial Setting** (RRI)? Is the terminology or equipment very sophisticated? Look for possible RRI. (Form 1C)

Does this appear to be a **Continuation?** Any mention of previous research? Uses terms like previously, earlier research, improved, redesigned, year 3, etc. (Form 7)

Any discussion of a **Partner** in a non-team study? Uses "we" consistently (math projects and international studies frequently use "we" for all studies). Form 1C answers this question for studies done at a university.

Any possibly **hazardous chemicals, activities, or devices?** Includes high voltage, hazardous equipment, radioactivity, firearms, explosives, prescription drugs, DEA-controlled substances, alcohol and tobacco. (Form 3)

Time Line Project appears too long/too old: more than one year or started before January of last year. (Form 1A contains this information)

CHECKBOXES ON ABSTRACT

Checkbox 1. Project involved human participants, vertebrate animals, or PHBA's. Requires preapproval and additional forms. Exempt studies do not check this box.

Checkbox 2. Abstract may only reflect their work not the mentor's. May require abstract rewrite.

Checkbox 3. Worked at RRI. (Requires 1C)

Checkbox 4. Project is a continuation. (Requires Form 7, previous abstract & research plan)

CHECKLIST FOR ADULT SPONSOR (1)

This form asks more specifically about projects that required preapproval (humans, animals, PHBA's), continuations, RRI's, and lists the forms that are required. The answers to this checklist need to be consistent with the answers on other forms.

This page is signed when the project is reviewed which should be before the project starts.

STUDENT CHECKLIST (1A)

Grade: Student must have been in high school at the time of research in order to compete.

Contact information: If questions cannot be resolved from the paperwork, it is sometimes necessary to contact the student or adult sponsor. **Continuation:** If a continuation must include Form 7, previous abstracts, and last year's research plan. This information should match the checkmarks on the abstract and on Form 1.

Start/End Dates: Project may only be one year in length and may not have started before January of the previous year. Student should have competed in the first fair which was held after the end date. Fair dates can be found on SSP's website at http://apps.societyforscience.org/find_a_fair.

Information regarding Research Site: This will tell you if you need additional paperwork. For example, Form 1C for RRI, Form 5A if animals at school, field, home, Form 5B if animals at RRI, no culturing of microorganisms is allowed at home (FTQ) [Failing to Qualify], Form 6A for BSL-1 and BSL-2 studies which must be in the appropriate facilities.

RESEARCH PLAN

Review the research plan to find information regarding each of the questions asked in previous section under Abstract. The Research Plan Instructions page lists the items that should be included. The information should be written before the experiment is started (future tense), needs to be very detailed, and must be consistent with the documentation found on all other forms. If more information is needed about the study, the student or adult sponsor may need to be contacted (email, phone or interview).

Human Participants

Look for information about subjects (any risk groups), recruitment, methods, risks and benefits, protection of privacy (HIPPA [Health Insurance Portability and Accountability Act] and FRPA [Family Educational Rights and Privacy Act]), and informed consent (participant knows what they are being asked to do, that they may withdraw at any time, there is no coercion, etc.). Must have preapproval and often will require written consents. (Requires Form 4)

Is the level of risk appropriate? What risk assessment was done? Should the study have written consent/permission/assent? Is the survey attached?

Animals:

Pay particular attention to the detailed procedures and care of the animals in the research

and if they looked for alternatives to animal research. Studies conducted in non-regulated sites are only allowed if they involved agricultural, behavioral, observational, or supplemental nutrition AND involved only non-invasive and non-intrusive methods that do not negatively affect an animal's health or well-being. All others must be at RRI's. (Requires 5A or 5B)

Look for any potential FTQ items such as no indication of preapproval, any animal deaths due to experimental procedures, weight loss ≥15% in any group or subgroup, toxicity studies, studies designed to kill, studies which cause more than momentary pain or suffering, predator/prey, inappropriate water or food restriction, euthanasia by student, etc. Ensure that an allowable embryonic study didn't hatch and become a vertebrate study that is not permitted.

PHBA's:

The source, quantity, and Biosafety Level (BSL) must be indicated for all microorganisms including established cell lines; however, only plant and non-primate established cell lines will not require preapproval or Form 6A.

Culturing of microorganisms may NOT be conducted at home. (FTQ) All BSL-1 studies must be conducted at a BSL-1 facility or higher. If a petri dish or culture container with unknown or BSL-2 microorganisms is opened, it becomes a BSL-2 study and may only be conducted at a BSL-2 facility. (FTQ if opened, subcultured, etc. in BSL-1 lab.) Most high school laboratories are BSL-1 facilities but it is possible that a high school could meet the more stringent requirements of a BSL-2 lab (see BSL-2 checklist). (Requires Form 6A and sometimes 6B.) BSL-3 or BSL-4 studies and studies designed to engineer bacteria with multiple antibiotic resistance are not permitted.

Procedures to minimize risk must be clearly indicated. rDNA studies require close review to ensure proper oversight. Proper disposal methods must be listed (autoclaving, 10% bleach solution/sodium hypochlorite, biosafety pick up, etc.).

Hazardous: Look for detailed descriptions of risks and safety precautions and procedures used including methods of disposal.

APPROVAL FORM (1B)

Dates: Signatures from student and parent should be before the start date shown on 1A.

Pre-approval #2a: Must be signed by SRC or IRB before experimentation begins (Start date on 1A) for human, animal, and PHBA studies but possible FTQ if no preapproval is documented.

Post-approval #2b: SRC signs after experimentation ends (end date on 1A) if the study was conducted at a RRI. Institutional approval forms must also be submitted. (Possible FTQ)

Note: Some fairs will have the fair SRC pre-review a study before it is done at an institution, even if it is approved before experimentation by the institution, and then will also post-approve after the study is complete. They will therefore sign both boxes. Usually, however, it is either pre- or post-approval, not both.

Final SRC Approval: This is signed after the project is complete (end date Form 1A) and immediately before competition.

REGULATED RESEARCH INSTITUTION FORM (1C)

The information provided by the scientist on this form must be consistent with what the student answered on other forms. It must not be filled out by the student. This form is posted so the judges can easily see exactly what the student did rather than what the mentor or others in the research group did. All information must be on the form not "see

attached. This form may only be from a university, college, or industrial site and may not be from their high school.

Checkboxes a) and b) help determine who did what and where.

Questions:

1. "Have you reviewed the rules" helps determine the amount of oversight and if an error was made in following the rules, if this an adult problem or a student problem or both.
2. "How did student get idea" helps determine originality by student.
3. "Was student part of a research group" indicates whether student worked with another high school student, which is only allowed for team projects not individual, or was part of a larger team of adult researchers, undergraduate or graduate students, which is allowed. Students are judged only on their own work, so it needs to be clear what part of the study was done by the entire group or the mentor and what was the student's work.
- 4-5. "What procedures" and "how independent" again help indicate what was actually done by the student.

Continuation: Frequently, the mentor will say "the student worked with me last year" or "in his previous research" or list dates of research which will indicate that the study must be treated as a continuation with Form 7, etc. It also could indicate that the study is too old, too long, or that the student is presenting multiple years of research.

This form is signed by the mentor AFTER the study is completed (End date on 1A).

QUALIFIED SCIENTIST FORM (2)

Look for answers that are consistent with the information on other forms. For example, if the scientist marks yes to 'used humans' but other human subject forms aren't present, will need to clarify. Any yes responses on #2 will require documentation on additional forms.

This form documents the amount of oversight that the student had and the safety precautions needed. The QS and DS review the study before the experiment begins. All approval signatures must be before research begins (Start date on 1A).

Even when not required, this form may be submitted to show the oversight of the study.

RISK ASSESSMENT FORM (3)

Documents that both the student and the supervisor have assessed the risks involved in the research and describes what safety precautions and procedures are needed including the disposal procedures. This form is completed before experimentation (start date on 1A).

This risk assessment is required for hazardous chemicals, activities, or devices, and for some PHBA's including protists, composting, coliform water test kits, decomposition of vertebrate organisms, etc.

Even when not required, this form may be submitted to show the oversight of the study.

HUMAN SUBJECTS FORM (4)

Make sure Form 4 is complete including decision checkmarks in the box and all 3 signatures. Missing checkmarks or signatures indicates no documentation of prior review and therefore could Fail to Qualify. All approval dates must be before research begins. (start date on 1A.)

Research Plan Refer to the research plan for subject information: any risk groups, recruitment, methods, risks and benefits, protection of privacy (HIPPA & FRPA), and

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informed consent (participant knows what they are being asked to do, that they may withdraw, no coercion, etc).

Risk Level Is the level of risk marked appropriate? Was a risk assessment done? Should the study have written consent/permission/assent? Is the survey attached?

HUMAN INFORMED CONSENT FORM

Does the form clearly explain what the participant is being asked to do, how long it will take, the potential risks and steps that will be taken to mitigate risk, the benefits to the participant or to society, how confidentiality will be maintained, that it is completely voluntary and that they may withdraw at any time?

Adult participants sign giving their consent, minors give their assent, and parents of participants give permission. All approval signatures must be before research begins (start date on 1A).

VERTEBRATE ANIMAL FORM (5A)

Since these animals are not in a research institution, which would provide a high level of oversight, special attention must be paid to the housing and husbandry that will be provided by the student. The final disposition of the animals must also be appropriate. Any death, illness, or unexpected weight loss must have been investigated and documented by an attached letter from the QS, DS, or a veterinarian. If there were any deaths due to the experimental procedure, the project will Fail to Qualify.

All approval signatures must be before research begins (Start date on 1A). Capture and Release approvals must be attached when applicable.

VERTEBRATE ANIMAL FORM (5B)

Research which causes more than momentary pain or suffering is prohibited. Appropriate use of anesthetics, analgesics and/or tranquilizers must be documented. Any death, illness, or unexpected weight loss must have been investigated and documented by an attached letter from the QS, DS, or a veterinarian.

Euthanasia by student researchers is prohibited so the final disposition of the animals should also be indicated. If there were any deaths due to the experimental procedure, the project will Fail to Qualify.

If tissues were collected, how were they obtained and how will they be used?

The IACUC approval forms must be attached. They must clearly cover this study and must indicate that the study was approved before the start of the student research. Not all IACUC approval documentation will list the student individually, but the student research training must be indicated on the Form 5B. A letter from the QS or Principal Investigator indicating that the study had IACUC approval is not sufficient.

PHBA FORM (6A)

Identification, Including Biosafety Level (BSL) The source, quantity, and BSL must be indicated. A plant or non-primate established cell line will not require Form 6A but the student may fill out this form in order to document that it is from ATCC, etc. However, human and other primate established cell lines and tissue cultures require Form 6A.

Prohibited Studies BSL-3 or BSL-4 studies, and studies which are designed to engineer bacteria with multiple antibiotic resistance are not permitted. (FTQ)

Site Microorganisms may NOT be cultured at home. (FTQ) All BSL-1 studies must be conducted at a BSL-1 facility or higher. If a culturing plate with unknown microorganisms is opened, except for disinfection or disposal, it becomes a BSL-2 study and may only be conducted at a BSL-2 facility. FTQ if opened, subcultured, etc. in BSL-1 lab. Most high schools are BSL-1 facilities but it is possible that a high school could meet the more stringent requirements of a BSL-2 lab (see BSL-2 checklist).

Risk Reduction Procedures to minimize risk must be clearly indicated. rDNA studies require close review to ensure proper oversight.

Disposal Proper disposal methods must be listed: autoclaving, bleach solution, biosafety pick up, etc.

Approval Dates All approval signatures must be before research begins (start date on 1A.)

HUMAN AND VERTEBRATE ANIMAL TISSUE FORM (6B)

Students may conduct tissue studies with tissue they are given from an IACUC approved study within a research institution but the animal may not be euthanized solely for the student's tissue study. The first checkbox in the signature box indicates this.

The second checkbox in the signature box is marked to indicate that the substances were handled in accordance with the safety standards for Blood Borne Pathogens.

All approval signatures must be before research begins (start date on 1A).

CONTINUATION FORM (7) Previous Year's Abstract & Research Plan

This form is posted with the project so that the judges can tell at a glance exactly what was new and different about this year's study. All information must be on the form, not "see attached." Because research projects may only be one year's work, they will be judged on the current work only not on previous work, and this form is used to document current versus previous research. Previous Intel ISEF projects can be searched at <https://apps2.societyforscience.org/AbstractSearch/Abstract/Index>.

Frequently, students don't wish to call their project a continuation, but it is good research to continue a line of investigation even when the focus is now totally different. If the study is in the same field, if anything they learned in a previous year helped with the current study, or if the current study refers to any earlier research, then it is a continuation and Form 7 and previous abstract and research plan are required.

Repetition of a previous study that reflects no changes but simply retests or increases sample size is not permitted.

A longitudinal study, in which time is a critical variable, is permitted but the original data from previous years cannot be presented only the comparison between years.

NSTF Board of Judges (BOJ) Project Evaluation Form

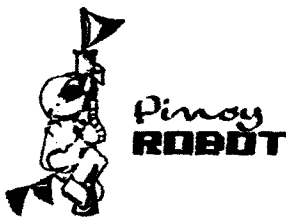


[Enclosure No. 8 to DepEd Memorandum No. 176 s. 2016]

Title of Research Project: _____
 Project Proponent/s: _____
 School: _____
 Project Category: () Life Science () Physical Science
 () Team () Individual

Category	Score
<p>1. Creative Ability (30)</p> <p>1. Does the project show creative ability and originality in the:</p> <ol style="list-style-type: none"> questions asked? approach to solving the problem? analysis of the data? interpretation of the data? use of equipment? construction or design of new equipment <p>2. Creative research should support an investigation and help answer a question in an original way.</p> <p>3. A creative contribution promotes an efficient and reliable method for solving a problem. When evaluating project, it is important to distinguish between gadgeteering and ingenuity.</p>	
<p>2. a. Scientific Thought (30) (If an engineering project, please see 2b. Engineering Goals.)</p> <ol style="list-style-type: none"> Is the problems stated clearly and unambiguously? Was the problem sufficiently limited to allow plausible attack? Good scientists can identify important problems capable of solutions. Was there a procedural plan for obtaining a solution? Are the variable clearly recognized and defined? If controls were necessary, did the student recognize their need and were they used correctly? Are there adequate data to support the conclusions? Does the finalist/team recognize the data's limitations? Does the finalist/team understand the project's ties to related research? Does the finalist/team have an idea of what further research is warranted? Did the finalist/team cite scientific literature, or only popular literature (e.g. local newspapers, magazines)? 	

<p>b. Engineering Goals</p> <ol style="list-style-type: none"> 1. Does the project have a clear objective? 2. Is the objective relevant to the potential user's needs? 3. Is the solution: workable? Acceptable to the potential user? Economically feasible? 4. Could the solution be utilized successfully in design or construction of an end product? 5. Is the solution a significant improvement over previous alternatives or application? 6. Has the solution been tested for performances under the conditions of use? 	
<p>3. Thoroughness (15)</p> <ol style="list-style-type: none"> 1. Was the purpose carried out to completion within the scope of the original intent? 2. How completely was the problem covered? 3. Are the conclusions based on a single experiment or replication? 4. How complete are the project notes? 5. Is the finalist/team aware of other approaches or theories? 6. How much time did the finalist or team spend on the project? 7. Is the finalist/team familiar with scientific literature in the studied field? 8. Are the relevant details (including the pages and dates) of the experiment recorded in the research data logbook? 	
<p>4. Skill (15)</p> <ol style="list-style-type: none"> 1. Does the finalist/team have the required laboratory, computation, observational and design skills to obtain the supporting data? 2. Where was the project performed (i.e. home, school laboratory, university laboratory) Did the student or team receive assistance from parents, teachers, scientists or engineers? 3. Was the project completed under adult supervision, or did the student/team work largely alone? 4. Where did the equipment come from? Was it built independently by the finalist or team? Was it obtained on loan? Was it part of a laboratory where the finalist/team worked? 	
<p>5. Clarity (10)</p> <ol style="list-style-type: none"> 1. How clearly does the finalist or team discuss his/her/their project and explain the purpose, procedure, and conclusions? Watch out for memorized speeches that reflect little understanding of principles. 2. Does the written material reflect the finalist's or team's understanding of the research? 3. Are the important phases of the project presented in an orderly manner? 4. How clearly is the data presented? 5. How clearly are the results presented? 6. How well does the project display explain the project? 7. Was the presentation done in a forthright manner, without tricks or gadgets? 8. Did the finalist/team perform all the project work, or did someone help? 	
<p>TOTAL</p>	
<p>Signature over printed name of the members of the board of judges</p>	



SUMOBOT OFFICIAL GAME RULES

Date updated: August 31, 2016

The objective of Sumobot is for your robot to push the other robot out of the sumo ring. A match is fought between two teams; **EACH TEAM HAVING 1 MEMBER ONLY** will approach the ring. In accordance with the game rules each team competes on a Dohyo (sumo ring) with a robot that they have constructed themselves. The match starts at the judge's command and continuous until a contestant earns two Yuhkoh points. The judge determines the winner of the match.

Length of Match: 3 minutes, 1 minute per round

Robot Specifications

1. A robot must fit within a square tube of the appropriate dimensions for the given class.
2. The total mass of a robot at the start of a match must be under the designated weight.

Height	Width	Length	Weight
Unlimited	15 cm	15 cm	400g / 500g
Unlimited	20 cm	20 cm	1kg
Unlimited	20 cm	20 cm	3kg

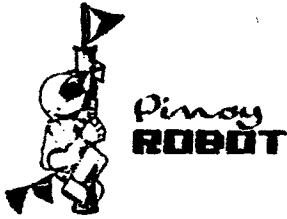
3. A robot may expand in size after a match begins, but must not physically separate into pieces, and must remain a single centralized robot. Robots violating these restrictions shall lose the match. Screws, nuts, and other robot parts with a total mass of less than 5 grams falling off from a robot's body shall not cause the loss of match.

4. Robots must be autonomous. Any control mechanisms can be employed, as long as all components are contained within the robot and the mechanism does not interact with an external control system (human, machine, or otherwise).

5. Autonomous class robots must not start operating for a minimum of five seconds after initiation by the user.

6. The robot must have a name or number for registration purposes. Display this name or number on your robot to allow spectators and officials to identify your robot.





Robot Restrictions

1. Jamming devices, such as IR LEDs intended to saturate the opponents IR sensors, are not allowed. **Reflective materials to disrupt IR distance sensors or IR line tracing sensors are not allowed.**

Scoopers/sweepers (expanding or not expanding) attached to any side of the robot must be colored black.

2. Parts that could break or damage the ring are not allowed. Do not use parts that are intended to damage the opponent's robot or its operator. Normal pushes and bangs are not considered intent to damage.
3. Devices that can store liquid, powder, gas or other substances for throwing at the opponent are not allowed.
4. Any flaming devices are not allowed.
5. Devices that throw things at your opponent are not allowed.
6. Sticky substances to improve traction are not allowed. Tires and other components of the robot in contact with the ring must not be able to pick up and hold a standard 3"x5" index card for more than two seconds.
7. Devices to increase down force, such as a vacuum pump or magnets, are only allowed in the 3 kg class. They are not allowed in all other classes.
8. All edges, including but not limited to the front scoop, must not be sharp enough to scratch or damage the ring, other robots, or players. In general, edges with a radius of greater than .005", as would be obtained with an unsharpened .010" thick metal strip, should be ok. Judges or competition officials may require edges that they deem too sharp to be covered with a piece of tape.

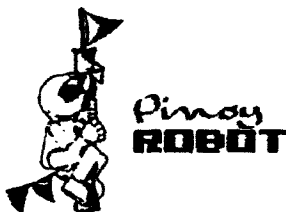
How to Carry Sumo Matches

1. One match shall consist of 3 rounds with 1 minute each round
2. A team receives a "Yuhkoh" point when they win a round. The team with the larger yuhkoh points at the end of the match wins.
3. The judge can choose to give extension rounds are given during a draw. A maximum of 2 extension rounds is allowed. Alternatively, the winner/loser of the match may be decided by judges, by means of weight, lots or rematch.
4. The decision of the judge to resolve a draw is final and cannot be appealed.

Start, Stop, Resume, End a Match

Start Upon the judge's instructions, the two teams bow to each other in the outer ring, approach the ring, and place a robot within their half of the ring on or behind the Shikiri line. (A robot or a part of a robot may not be placed beyond the front edge of





the Shikiri line toward the opponent. Note that is not required that a robot be placed directly behind the Shikiri line; it may be offset to the side, as long as it is behind an imaginary line collinear with the Shikiri line.) When the judge announces the start of the round, the teams start their robots, and after a five second pause the robots may start operating. During these five seconds, players must clear out of the ring area. The robot does not start it consider as false start. The judges give another round to start the game.

Stop, Resume The match stops and resumes when a judge announces so.

End - The match ends when the chief judge announces so. The two teams retrieve the robots from the ring area, and bow.

Time of Match

1. Each round has a maximum of 65 seconds including the 5 second delay. When no Yuhkoh point is scored, a draw is called. Exception is when the robot is about to fall when the 65th second is reached. The referee can extend to a maximum of 5 seconds just to win the Yuhkoh point.
2. A single timeout of 30 seconds can be requested between rounds. Only one timeout per player. A player who extends beyond the 30 second timeout can lose the round depending on the referee's call.
3. Referee must continue each succeeding round without delay. Any player who causes a delay in starting the next round when no timeout is called will lose the round depending on the referee's call.
4. The total time of the match is extended when extension rounds are called.
5. There will be 3 rounds per match. For the finals and semi-finals, there are 5 rounds per match. The match can be extended to a maximum of 2 rounds only.

Time out

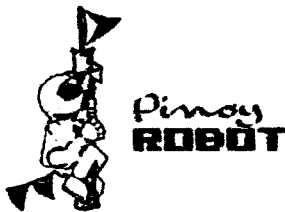
During a time out, repairs to the robot are made but **BATTERIES CANNOT** be changed. Major repairs and battery changes are done after the match.

Yuhkoh

One Yuhkoh point shall be given when:

1. The robot touches the space outside the ring or completely falls outside the ring. The robot can be falling on its own or being pushed by the other robot.
2. ~~When NO CONTACT is made between the robots and one robot falls outside the~~





ring, ~~NO YUHKOH is counted. The round is repeated. When the same robot falls with NO CONTACT for 3 consecutive rounds, the match ends and the robot that remained in the ring is declared the winner.~~

"NO CONTACT RULE" is SUSPENDED. When NO CONTACT is made between the robots and one robot falls outside the ring, YUHKOH is counted. The robot that remained in the ring wins the point.

3. When a part of the robot falls off or separates from the body while in the ring, the other robot wins the point. {exception for nuts and screws}
4. When a robot flips on its side or flips over; when a robot stops moving or spins around in the same location (no progress in movement) for 5 seconds; the other robot wins the point.
5. When all rounds of the match are completed and NO WINNER is found, the robot with the lighter weight gets the winning Yuhkoh.
6. ~~When a robot moves before the 5 second delay requirement, the other robot gets the Yuhkoh point. Referee advises the player to press the start button in a delayed manner so it will move after the 5 second "start call".~~

Robots MUST HAVE a 5 second delay for every match. A robot that moves before the 5 second delay loses the round.

Exception: Judges can decide to relax this rule ONLY during the first elimination round. In such exception, the robot without a 5 sec delay can only place the robot immediately behind the shikiri line with its back touching the shikiri line. Player will press their START button to match the correct start of the round.

7. When the player touches any part of the playing field or any robot in the match directly or indirectly during a round, the Yuhkoh is awarded to the other robot.

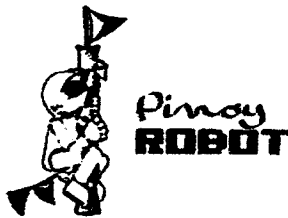
Draw

1. When 65 seconds has lapsed into the round.
2. When the referee cannot decide on which robot fell first.
3. When during a contact, both robots are in a **deadlock position** and there is no progress in the position, after 10 seconds, a draw is called.

False Start

1. When at the start of the round, the player accidentally was not able to properly put the robot ON, a False Start is called – NO points are called, the round is repeated. Referees observe false start carefully.





Penalties

Sportsmanly conduct is expected from players. Any misconduct, foul language or intentional action to harm the opponent or the robot shall be dealt with by the table officials with the recommendation of the referee. Penalties can range from losing a round, a match or being banned for the day.

Injuries and Accidents during the Match

[Unable to Continue the Match] When the game cannot continue due to player's injury, the team mate can replace the player. If there is no replacement, the other player is declared the winner.

Declaring Objections

Only players can state an objection to the call of a referee. COACHES CANNOT INTERFERE.

Procedure:

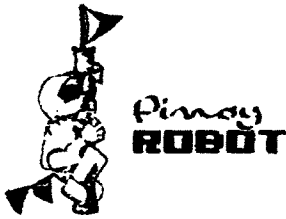
1. The player in the field calls the attention of the referee and states "Sir/Mam, I am objecting to a call".
2. A table official/judge is called to the field in front of the two players and the referee.
3. The objection is stated to the referee and judge witnessed by the other player.
4. The judge makes a FINAL DECISION within 60 seconds.

Playing Field

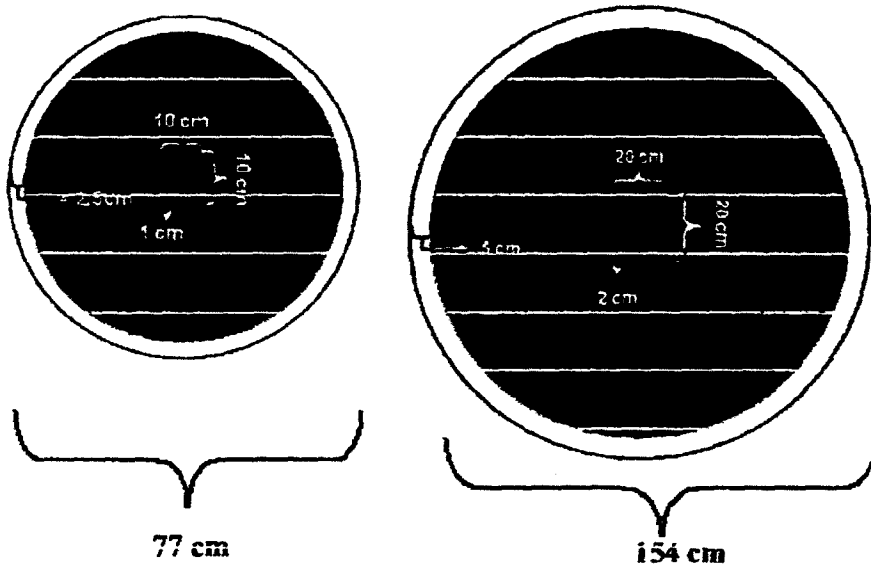
The dohyo interior is defined as the playing surface surrounded by and including the border line. Anywhere outside this area is called the dohyo exterior.

1. The ring shall be circular in shape and of the appropriate dimensions for the given size class.
2. Shikiri lines (starting lines) consist of two painted parallel brown (or equivalent for absorption of IR light) lines centered in the ring with appropriate width and spacing for the given class. The separation distance between the lines is measured to their outside edges.
3. The border line is marked as a white circular ring of a width appropriate for the given class on the outer edge of the playing surface. The ring area extends to the outside edge of this circular line. There should be a space appropriate for the given class outside the outer edge of the ring.





This space can be of any color, and can be of any material or shape as long as the basic concepts of these rules are not violated. This area, with the ring in the middle, is to be called the "ring area". Any markings or parts of the ring platform outside the minimum dimensions will also be considered in the ring area.

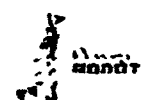


Sumobot Placing Guide

- Good Position



- Bad Position





**Pinoy
ROBOT**games



LINE TRACING OFFICIAL GAME RULES

1. OBJECTIVE:

The objective of Line Tracing is for your autonomous robot to complete the course in the shortest period of time while accurately tracking the line from START to FINISH. A game is played by one robot per team having 2 members. Only one team member may approach the playing field. Playing field consists of different obstacles with corresponding points. Your aim is to surpass the obstacle while moving on the line. The team who approach the finish line in the shortest period of time will win the game.

2. ROBOT:

2-1. Robot type: No restriction

2-2. Construction

2-2-1. Pre-built: All robots must be pre-built before the competition

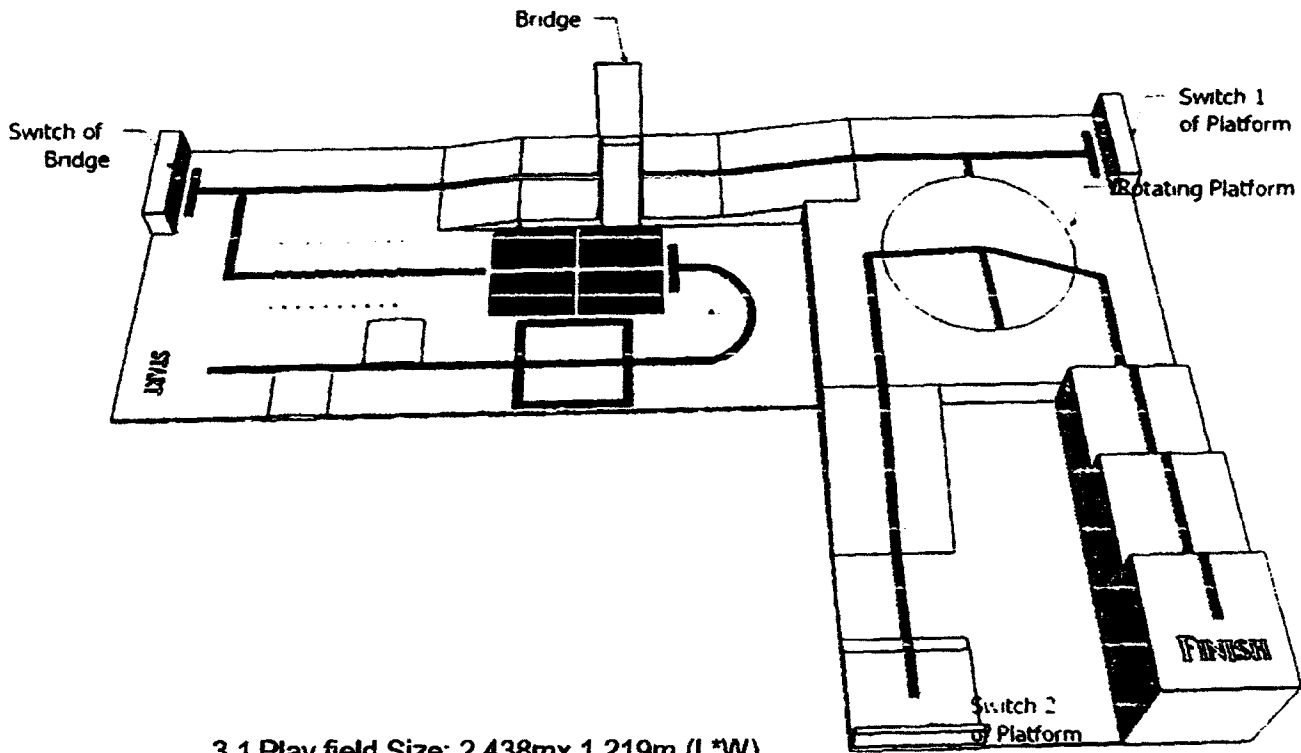
2-2-2. Size: Size of the Robot. The base of the robot should fit in the 24cm x 24cm cell without touching the adjacent obstacles on the side or the top. Note: Your robot can be larger at the top as long as it is higher than 4 inches or 10cm so as not to hit any obstacles. EXPANDING robots are NOT ALLOWED.



**Pinoy
ROBOT**



3. PLAYING FIELD



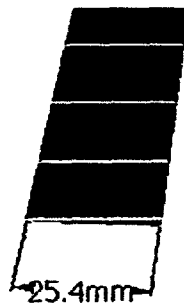
3.1 Play field Size: 2.438mx 1.219m (L*W)

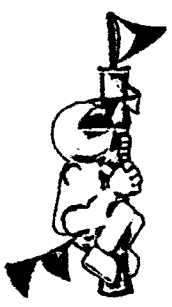
3.2 Play field Floor: Vinyl sticker (Flat white)

3.3 Play field attachment:

3.3.1. Humps: 10mm height and 204.3mm width

3.3.2. Black line: 25.4mm width





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ROBOT**



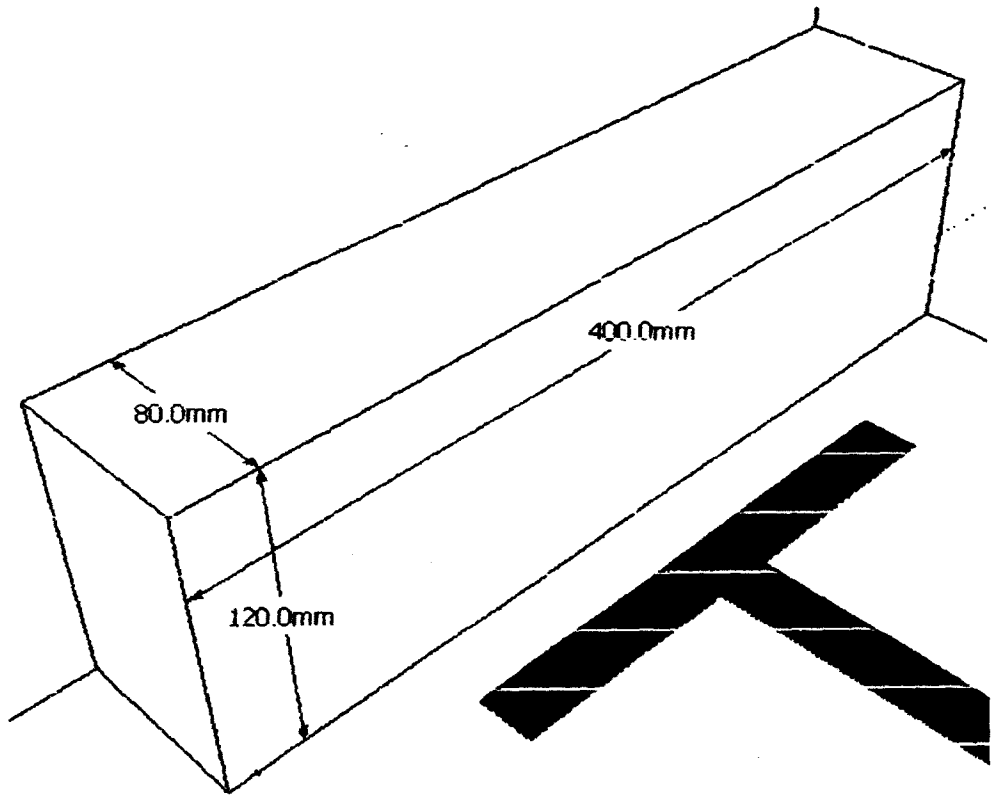
3.3.3. Black Intersection:

3.3.4. Curve Line:

3.3.5. White Intersection:

3.3.6. Stick:

3.3.7. First switch: The robot must push or bump the switch to activate the lever of the bridge. If the robot by pass this switch they can't pass the bridge.



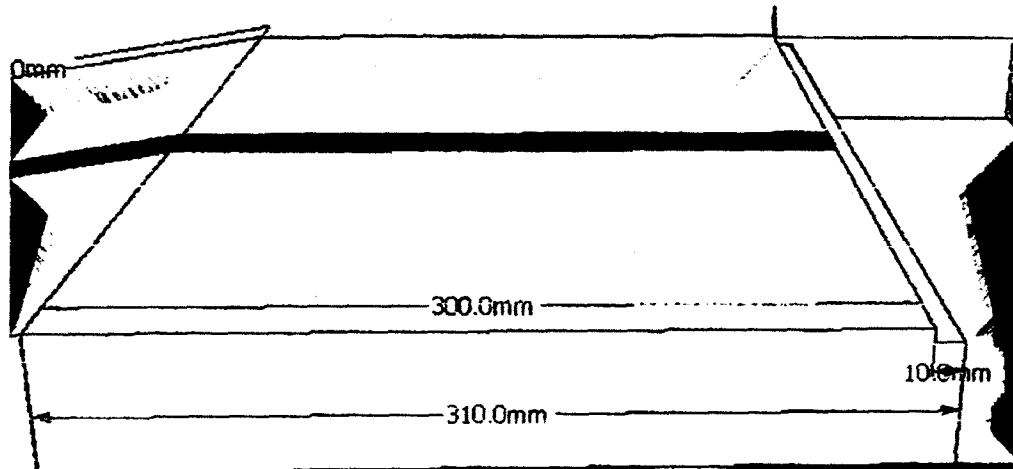


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ROBOT**

data science
and technology corporation

3.3.8. First Incline:

3.3.9. Bridge Connector:



3.3.10. Bridge: If the switch one push or bump it will activate.

3.3.11. Second Incline:

3.3.11. Second switch: It activates the rotating circle. If this switch will not activate the robot cannot continue the game.

3.3.12. Rotating circle: If the second switch activate, it rotate clockwise and the line complete.

3.3.13. Third incline: Way to the third switch.

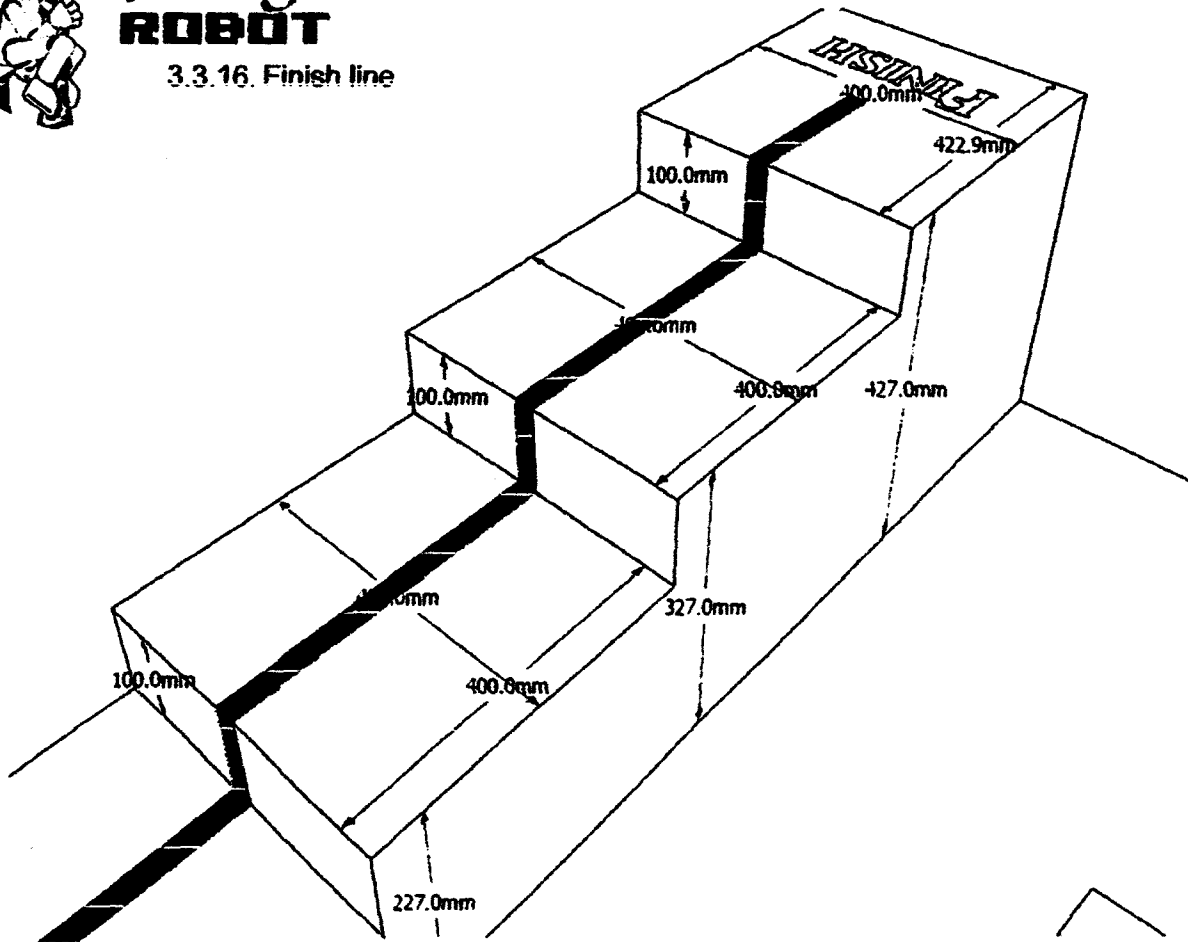
3.3.14. Third switch: This switch activate the rotating circle to rotate counterclockwise

3.3.15. Fourth incline: Way to the finish line.



Pinoy ROBOT

3.3.16. Finish line





**Pinoy
ROBOTgames**
4. REGULATIONS



4.1. Place Robot behind starting line. Referee blows whistle to start. Press the Power switch.

4.2. Robots can be touched, lifted and rotated. It should remain in the same point in the line.

4.2.1. Maximum of 3 touches.

4.2.2. 10 second penalty for every touch

4.3. The game ends if the two wheels of the robot moves out of the center line.

5. Start, Stop and End of the Game

Start-When the referees blow the whistle. It indicates to run the robot.

Stop-When the robot reached the finished line.

End-The game stops when all wheels of the robot is outside the line.

CRITERIA FOR STRATEGIC INTERVENTION MATERIAL

AREA	PERCENTAGE
1. Subtasking <ul style="list-style-type: none"> • Competency-based • Bloom's Taxonomy Followed • SMAR-C 	15 % 5% 6% 4%
2. Congruence <ul style="list-style-type: none"> • Activities in line with content and skills • Assessment in line with content and skills 	15 % 5% 10%
3. Usability/Functionality <ul style="list-style-type: none"> • Language • Title Card • Guide Card • Activity Card • Assessment Card • Enrichment Card • Reference Card • Answer Card • Packaging 	45 % 3% 2% 4% 14% 4% 4% 4% 2% 8%
4. Replicability <ul style="list-style-type: none"> • Validated before classroom use • Developed material based on least learned competency • Material used improved mastery level • Handy and easy to copy • Cost 	15 % 5% 5% 10% 3% 2%
TOTAL	100%

QUIZ MECHANICS

1. All contestants will answer the same set of questions in writing. Before a question is read, the contestants must raise their markers.
2. Questions will be read twice by the Quizmaster.
3. After the second (2nd) reading, the quizmaster shall say "go" --- only then will the contestants be allowed to write their answer. Automatically, the ten (10) second time – limit begin with the word "go" by the Quizmaster.
4. After the limit and the buzzer sounds, the contestant must stop writing and raise their answer boards.
5. The Quizmaster shall read and verify the contestants' answer. (Wrong spelling means wrong answer)
6. There are four (4) rounds in each competition namely: Easy, Average, Difficult, and clincher. The clincher round takes place only if there is a tie.
7. In the easy round, five (5) questions will be asked; in the average round five (5) questions; in the difficult round, five (5) questions, and in the clincher round, as many questions as needed.
8. Points are assigned for each question answered correctly: Easy question – 1point, Average question – 2 points, and Difficult question – 3 points.
9. After the fifth (5th) question in the difficult round, the total number of points of each contestant is tabulated.
10. The contestant who gets the highest number of points is automatically declared the champion; and the second (2nd) highest --- the Runner – up.
11. Should there be a tie among the contestants getting the highest score or the second (2nd) highest score, the contest continues to the Clincher Round to determine the champion or the runner – up as the case may be.
12. The total number of points of the tied contestants will revert back to zero (0).
13. In the Clincher round, the sudden Death Scheme will be followed. The contestant who first (1st) gets the correct answer is declared the winner.
14. In case the champion is unable to compete in the next contest level, the duly certified runner – up will take the place of the champion.
15. The duly registered teacher – coach of the contestant is the only person authorized to make a protest provided a published reference is presented.
16. All protest should be referred to the board of judges immediately, before the Quizmaster reads the next question.
17. The Board of Judges shall be in complete control of the contest. Their decision shall be final in all questions/protest.

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		Angela Lester Alcantara, NOHS
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