Republic of the Philippines
Department of Education

03 SEP 2013

DepEd MEMORANDUM
No. 159, s. 2013

NATIONAL SCIENCE AND TECHNOLOGY FAIR FOR SCHOOL YEAR 2013-2014

To: Undersecretaries
Assistant Secretaries
Bureau Directors
Directors of Services, Centers and Heads of Units
Regional Directors
Schools Division/City Superintendents
Heads, Public and Private Secondary Schools

1. The Department of Education (DepEd), through the Bureau of Secondary Education (BSE), announces the conduct of the **National Science and Technology Fair (STF) for School Year (SY) 2013-2014** on December 3-6, 2013 at a venue to be announced later. The conduct of the school, division, and regional STF shall be held on the following dates:

Event	Date
Online Registration and Submission of School Level Entries	August 1-25, 2013
Actual Conduct of School Level Fair	August 29-31, 2013
Actual Conduct of Division Level Fair	September 12-14, 2013
Actual Conduct of Regional Level Fair	October 3-5, 2013

2. STF aims to promote Science and Technology consciousness among the youth and to identify the most creative/innovative and the best Science and Technology researchers who will represent the country in the Intel International Science and Engineering Fair (Intel ISEF). The schools are encouraged to promote Science, Technology and Mathematics investigatory projects that will address **environmental protection and conservation of the ecosytem**.

3. The submission, evaluation and judging of research projects for the school, division, and regional STF shall be done **online** through website address: www.depednstf.com. See Enclosure No. 6 for further details on the Scientific Review Committee (SRC) or the Board of Judges (BOJs).

4. The research plan and scientific research paper must follow the format specified in the **ISEF Rules**. The project proponents should review and download the 2014 ISEF Rules and Guidelines and all the required forms at http://www.societyforscience.org/page.aspx?pid=282. They should visit Intel ISEF Rules Wizard: http://apps.societyforscience.org/isef/students/wizard/index.asp for guidance in their planned projects. This tool will provide a list of forms that must be completed prior to the submission of the projects. In addition, all research projects from the school to the regional level must undergo peer, teacher and expert evaluation.

5. The **official participants** from each region at the National Level DepEd-BSE Science and Technology Fair shall only be the **Rank 1 Regional winners** *in each of the different categories, whose entries have been approved by the National Level Scientific Review Committee (SRC).* The four individuals and the team project researchers are represented by four project leaders, namely, two selected teacher-advisers, one regional science fair coordinator, and one regional math supervisor. The total number of official participants shall be 12 per region.

6. The travel expenses of the participants in the national level STF shall be charged to local funds or other sources, whereas the expenses of DepEd-BSE staff, board and lodging of official participants, materials, transportation/communication relative to these activities, prizes/cash awards, and honoraria of members of the SRCs, BOJs, and external or non-DepEd resource persons shall be charged to the nationwide lump sum in support of RSHSs (A.III.e.17.b), subject to the usual accounting and auditing rules and regulations.

7. The following are enclosed for guidance of all concerned:

Enclosure No. 1	-	Guidelines on the National STF 2013-2014
Enclosure No. 2	-	Schematic Diagram on the Flow of STF Activities
Enclosure No. 3	-	2013 Calendar of Important STF Activities and Requirements
Enclosure No. 4	-	Format of Research Paper
Enclosure No. 5	-	Format of the Data and Report
Enclosure No. 6	-	DepEd NSTF User Guide
Enclosure No. 7	-	Project Evaluation Form
Enclosure No. 8	-	Scientific Review of STF Project Write-up

Further, Regional Coordinators (RCs), Division Science and Mathematics Supervisors, school heads and participants are expected to download soft copies of the International Rules for Pre-college Science Research: Guidelines for Science and Engineering Fair for SY 2013-2014 and required forms from <http://www.society.org/ise/rulesandguidelines> for their guidance.

8. The registration fee for each participant is as follows:

Level	Participant	Registration Fee
Division	• Students with entries • Research adviser • Supervisors in Science and Mathematics	P 2,000.00
Regional	• Students with entries • Research adviser • Supervisors in Science and Mathematics	P 4,500.00

9. The registration fee shall be charged to local funds, subject to the usual accounting and auditing rules and regulations. This fee will cover prizes, board and lodging of participants and their advisers, Science and Mathematics supervisors, and the materials needed to the conduct of STF. The subsidy to cover the payment for honoraria of the members of SRC and BOJs relative to the conduct of Regional STF shall be downloaded to the regions.

10. All other activities relative to Science and Mathematics investigatory projects, including those of private associations shall be harmonized with the activities of the Science Fair on **December 3-6, 2013**.

11. For more information, all concerned may contact **Mr. Joseph R. Jacob**, Education Program Specialist, Curriculum Development Division-Bureau of Secondary Education (CDD-BSE), DepEd Central Office, 3/F Bonifacio Building, DepEd Complex, Meralco Avenue, Pasig City at telephone no.: (02) 632-7746 or through email address: depednstf@gmail.com.

13. Immediate dissemination of this Memorandum is desired.

BR. ARMIN A. LUISTRO FSC
Secretary

Encls.:
As stated

Reference:
DepEd Memorandum: No. 149, s. 2012

To be indicated in the Perpetual Index
under the following subjects:

CELEBRATIONS & FESTIVALS
CONTESTS
Learning Area, MATHEMATICS
SCHOOLS
SCIENCE EDUCATION
STUDENTS

D-MCR/DM-National Science and Technology Fair 2013
0719/July 31, 2013/8-22-13/8-29-13

(Enclosure No. 1 to DepEd Memorandum No. 159, s. 2013)

GUIDELINES ON THE NATIONAL SCIENCE AND TECHNOLOGY FAIR 2012-2013

Similar to the previous national level fair, the National Science and Technology Fair (STF) for 2013-2014 is an Intel ISEF-affiliated fair. As such, the requirements for affiliated fairs should be complied with as stated in the ISEF guidelines mentioned on page 2 of this Memorandum.

1. The Science Fair

The Bureau of Secondary Education of the Department of Education (BSE-DepED) shall conduct the **National STF 2013-2014** on **December 3-6, 2013**.

The STF is a nationwide Science and Mathematics 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 and Mathematics student researchers who will represent the country in the Intel International Science and Engineering Fair 2014 (Intel ISEF 2014) and other various international/regional science fairs.

2. The Competitions

The competitions will be conducted among Grade 8 to Grade 12 High School Students.

*Students from all high schools offering Special Science Curriculum (such as RSHSs and S & T Oriented HSs,) are **required** to join the said competition.

The **first and second place winners** in each of the categories per cluster at the Regional level shall represent the region to the National STF competition.

The competition will start at the school level advancing to the division, regional, national then to the international level. The participation of schools in the National STF shall be clustered into two types as follows:

Cluster 1 – composed of students from:	**Cluster 2** – composed of students from:
• Regular Public High Schools • Regular Private High Schools • Regular Public Laboratory High School • Regular Private Laboratory High School *regular high schools: schools that do not offer special science & **math curriculum	• Philippine Science High Schools (under DOST) • Regional Science High School (RSHS) • S & T Oriented High Schools (formerly ESEP) • Science Focused Private High Schools • Science Focused Public High Schools • Science Focused Public Laboratory High Schools

Life Science		**Physical Science**		**Life Science**		**Physical Science**	
Individual Project	Team Project	Individual Project	Team Project	Individual Project	Team Project	Individual Project	Team Project

*For project category ideas please visit www.societyforscience.org/isef/students/project_categories
Research projects in Mathematics shall be categorized under Physical Science. All project proponents should properly identify the type of school they belong to. Students who belong to the special science class of a regular public or private high school shall register under the Science ***Focused Public or Private High Schools***.

3. Levels of Competition

School/Division Level

All project proponents must sign up to the NSTF to have an access to the online fair. All applications shall be confirmed via email. All requirements in **PDF Format** must be uploaded as soon as the confirmation has been made. The following are the attachments to be submitted:

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 Vertebrae Animal Tissue Form (6B)
   - I. Continuation Project Form (7)

4. **Abstract** (Maximum of 250 word)
   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 #8)
7. **Scanned copy of the log book**

The school and division level STF should refer to Enclosure No. 3 for the schedules of the competition.

The projects of proponents should have been screened / evaluated by the peer, teacher, and expert (IRB/SRC) at the school level before the online submission.The **Project Evaluation Form** (see Enclosure # 8) must be submitted along with the other required forms and manuscripts as soon as the confirmation of registration is received. The school level BOJs shall determine the winning projects at the school level. They will give comments and suggestions for further improvement of the projects. The proponents of the winning projects will be given time to improve the projects before they are submitted to the division level. The approval of entries qualified for the division level shall be done online by the school fair coordinator. The division coordinator shall see in his /her account all the projects that have been qualified by the schools. Once the school fair coordinator has submitted the winning entries, the project proponent can now upload the improved version of the project .

The Division Science/Mathematics Supervisor shall be a member of the BOJs who shall determine the school/division winners of the different categories and fair divisions. All the winning projects in the division level shall be submitted online to the regional coordinator (see the user guide for further instruction).

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 for the division level. Likewise, the division level winners should be officially endorsed to the region.

Regional Level

The first place projects at the division level in both clusters must have been properly scrutinized by identified members of the regional SRC.

The first place projects at the regional level shall be submitted online and officially endorsed by the Regional Office to DepEd Central Office through the Bureau of Secondary Education. The official endorsement of the region shall be submitted as an attachment to the respective accounts of the regional fair coordinators.

All projects approved by the regions shall undergo evaluation by the national SRC. The members of the SRC shall determine the projects qualified for the national level competition. The project proponents will receive a notification in their respective accounts if their projects qualify for the national level STF.

National Level

The First Place winners of both clusters in the different categories shall represent the region in the national level STF to be conducted on December 3-6, 2013 at a venue to be announced later.

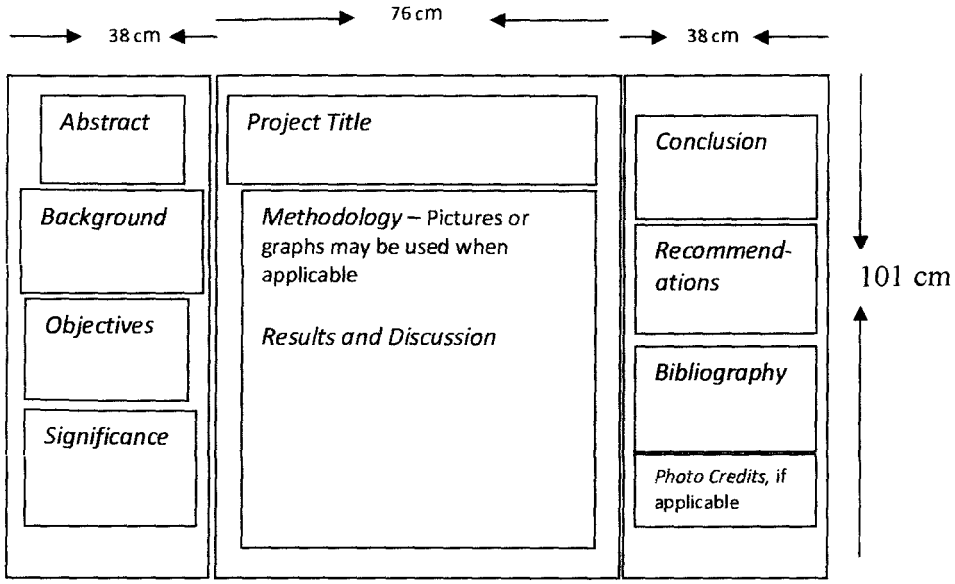
4. The Research Project

Science research projects must conform with international rules published by the ***Intel International Rules for Pre-college Science Research: Guidelines for Science and Engineering Fairs 2014.*** 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 2013 to December 2013. However, since the National STF is in the first week of December, then the complete write-up should have been done by November 2013.

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 for 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 environmetal 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 23 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)

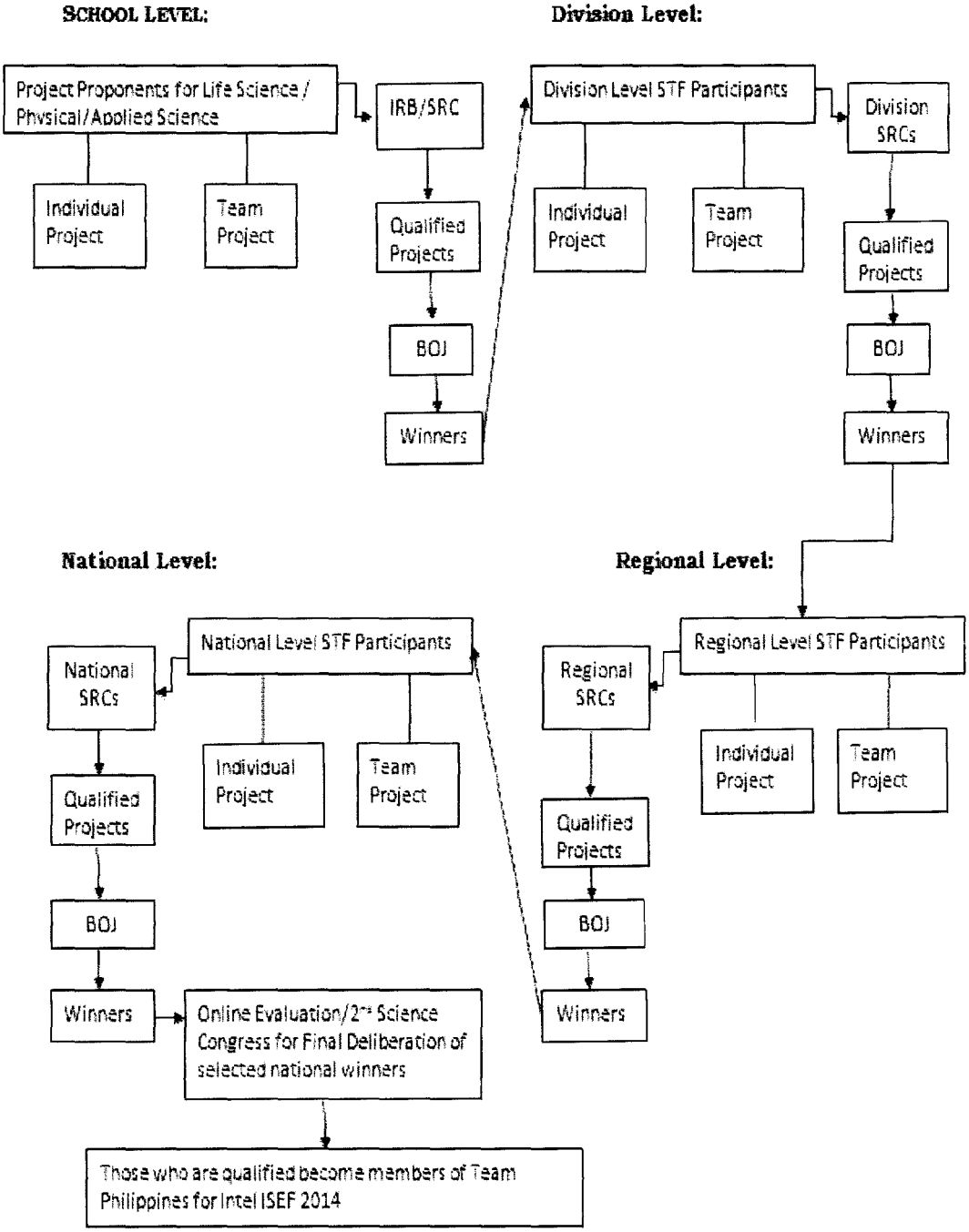
*Note that a proponent should **not** include his/her face in the project's procedure/illustration in the display.*

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

- Photocopy and original 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: http://www.societyforscience.org/document.doc?id=12)

(Enclosure No. 2 to DepEd Memorandum No. 159, s. 2013)

SCHEMATIC DIAGRAM OF THE FLOW OF STF ACTIVITIES



(Enclosure No. 3 to DepEd Memorandum No. 159, s. 2013)

CALENDAR OF IMPORTANT STF ACTIVITIES AND REQUIREMENTS

Activity	Date	Required Items	Persons Involved	Venue
On-Line Submission of Entries	August 1-25, 2013	School Level On-Line Submission of write-ups in PDF format	Project Proponents School Fair Coordinator	
Conduct of School STF	August 29- 31, 2013	School level winning projects	Project proponents Project advisers Dept. Heads/Div. Science and Math Supervisors	Respective schools or On-line
Submission of School Level winning projects to division	September 1-6, 2013	On-Line submission of the winning entries by the School Fair Coordinator to the Division Coordinator	School Fair Coordinator	On-line
Conduct of Division STF	September 12-14, 2013	Division level winning projects	Project proponents Project advisers Dept. Heads/Div. Science and Math Supervisors	Designated Schools or On-line
Submission of Division Level winning projects to the regional level	September 15-20, 2013	On-Line submission of the winning entries by the Division Fair Coordinator to the Region Online submission of the revised manuscripts by the project proponents incorporating the comments and suggestions of the school level SRCs / BOJs	Division Fair Coordinator	On-line
Conduct of Regional Level STF	October 3-5, 2013	Regional level winning projects	Project proponents Project advisers Dept. Heads/Div. Science and Math Supervisors	Designated Schools or On-line
Submission of Regional Level winning projects to the National Level	October 6-18, 2013	On-Line submission of the winning regional entries by the Regional Fair Coordinator to the National Online submission of the revised manuscripts by the project proponents incorporating the comments and suggestions of the regional level SRCs / BOJs	Regional Fair Coordinator	On-line
Submission to BSE of the Official List of Regional entries properly endorsed by the Regional Office	October 18, 2013	Official Enbdorsement of the Regional Office to be faxed to any of the following numbers: 635-9822 636-5127 636-5173	BSE Staff Project proponents Project advisers Dept. Heads / Div. And Regional Science and Math Supervisors	RO to CDD-BSE

Validation of Regional Winners submitted/ endorsed by the regions	October 18, 2013	Validated regional entries to national fair	BSE Staff Regional Science and Math Supervisors	On-line
On-Line Review of Regional Winners by the National SRCs	October 23-31	Selection of projects to be qualified in NSTF Evaluation forms Comments and suggestions of the National SRCs	Identified SRC BSE Staff	On-line
Meeting of SRCs members for deliberation and submission of consolidated SRC forms	November 5, 2013	List of qualified entries for the NSTF Affiliated Questionnaire matrix (master list of proponents using ISEF matrix) Evaluation Forms per project with SRC comments	Identified SRC BSE Staff	BSE Conference Room
Announcement of National Qualifiers	November 8, 2013	Memo to the regional offices	BSE Staff Regional Science and Math Supervisors	
Review and Revision of entries qualified to the NSTF	November 9-17, 2013	Reviewed, revised, and completed projects qualified for the NSTF	Regional Science and Math Supervisors Regional Level SRC Research Advisers Project proponents	
Planning Meeting on the conduct of National STF with the RCs Meeting of RCs and return of SRC comments on write-ups to RCs	November 12, 2013	Program flow of the NSTF	BSE Staff RCs Volunteers Representatives from the venue	BSE Conference Room
On-Line Submission of the QUALIFIED NATIONAL ENTRIES by the Regional Fair Coordinator Submission to BSE of the Official List of entries for the NSTF properly endorsed by the Regional Office	November 18, 2013	REVISED Write-up to National Endorsement from the regional office	BSE Staff	CDD-BSE
Actual conduct of the National STF	December 3-6, 2013	Display tarpaulins 24 winning projects 10 of 24 projects qualified for on-line mentoring	BSE Staff Regional delegates Project advisers RCS and BOJs	To be announced

(Enclosure No. 4 to DepEd Memorandum No. 159, s. 2013)

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. These rules can be found in the Guidelines (http://www.societyforscience.org/isef/rulesandguidelines) and in the Student Handbook (http://www.societyforscience.org/document.doc?id=12).

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 you will use 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 litrature 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 include any documentation that is not your own (i.e. books, journal articles, websites, etc.). See an appropriate reference in your discipline for format or refer to the Instructions to Authors of the appropriate publication. Three common reference styles are:

1. *APA (American Psychological Association) Style :*
   -http://apastyle.apa.org/
   -http://www.calvin.edu/library/knightcite/index.php
   -http://owl.english.purdue.edu/owl/section/2/10/

   This resource offers examples for the general format of APA research papers, in-text citations, endnotes/footnotes, and the reference page.

2. *MLA (Modern Language Association) Format:*
   -http://www.mla.org/style
   -http://www.calvin.edu/library/knightcite/index.php
   -http://owl.english.purdue.edu/owl/section/2/11/

   This resource offers examples for the general format of MLA research papers, in-text citations, endnotes/footnotes, and the Works Cited page.

3. *The Chicago Manual of Style:*
   - http://www.chicagomanualofstyle.org/home.html
   -http://www.calvin.edu/library/knightcite/index.php

The Chicago Manual of Style presents two basic documentation systems. The more concise author-date system has long been used by those in the physical, natural, and social sciences. In this system, sources are briefly cited in the text, usually in parentheses, by author's last name and date of publication. The short citations are amplified in a list of references, where full bibliographic information is provided.

4. ***Abstract:***

After finishing research and experimentation, an abstract should be written. This needs to be a 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 28 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

2002 ISEF First Grand Award, Physics	**2002 ISEF First Grand Award, Microbiology**
A Novel Application of Locally Formulated Cholesteric Liquid Crystals in Dosimetry	**Antibiotic Substance Obtained from the Parotid Gland Secretions of the Toad (*Bufo marinus*)**
By Estrella, Allan N., Macalintal, Jeric V., Manapat, Richard K.S. Adviser: Mr. Jonathan Derez Manila Science High School	By Rara, Prem Vilas Fortran M. Adviser: Dr. Jose M. Oclarit Integrated Development School-MSU-Iligan Institute of Technology
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, thermoluminuscent dosimeters, and semi-conductor dosimeters were developed. This study focuses on the potential use of liquid crystals as a dosimeter. 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. Color changes corresponding to different gamma radiation does 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.	The study showed an antibiotic substance was obtained from the parotid secretions of a toad (*Bufo marinus*). 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 (*Escherichia coli, Bacillus subtillis* and *Aspergillus niger*). 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. 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 *Aspergillus niger*, 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 *E. Coli* and *B. Subtillis* 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 *B. subtilllis* and 34 mm in *E. coli.*

(Enclosure No. 5 to DepEd Memorandum No. 159, s. 2013)

Format of the Data and Report

(to be used in the official endorsement of the school to division, division to region and region to central office)

This should be in **Excel spreadsheet** and sent to email address: depednstf@gmail.com on **18 October 2013**. Please take note of the sample below:

Category /Cluster	Name of Project Leader and Members			Grade Level	Age	Gender	Project Title	School/Address/ Phone #	Name of Project Adviser/ Phone #
	First Name	Middle Name	Last Name						
Cluster1 Life Science INDIVIDUAL									
Cluster1 Life Science TEAM									
Cluster 1 Physical Science INDIVIDUAL									
Cluster 1 Physical Science TEAM									
Cluster2 Life Science INDIVIDUAL									
Cluster2 Life Science TEAM									
Cluster 2 Physical Science INDIVIDUAL									
Cluster 2 Physical Science TEAM									

The Report of the Conduct of S&T Fair may include the following:

1 Title
2 Table of Contents
3 Introduction/ Rationale
4 Detailed Report
- General information
- SRC Deliberation (including 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

(Enclosure No. 6 to DepEd Memorandum No. 159, s. 2013)

CHECKPOINTS FOR SRC REVIEW

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

ABSTRACT

Review the abstract text and check boxes 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 **PREAPPROVAL**?

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 preapproval as a PHBA 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 preapproval 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 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), Form 6A for BSL-1 & 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 & benefits, protection of privacy (HIPPA & FRPA), 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. Culturing of microorganisms may NOT be conducted at home (FTQ.) 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 -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.
Preapproval #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.
Postapproval #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 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 & 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 -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 1 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 found at http://apps.societyforscience.org/abstracts/.

Frequently, students don't wish to call their project a continuation, but it's 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.

Source: Society for Science and the Public

(Enclosure No. 7 to DepEd Memorandum No. 159, s. 2013)

DepEd NSTF System Users Guide

I. Introduction

DepedNSTF is a web application system that automates the Philippine Science Fair Contest for High School students. It has an online registration for participating students, submission of contest entries, judging of entries and archiving. It also has a forum page where mentors and students can exchange messages and discuss their project.

II. Types of Users

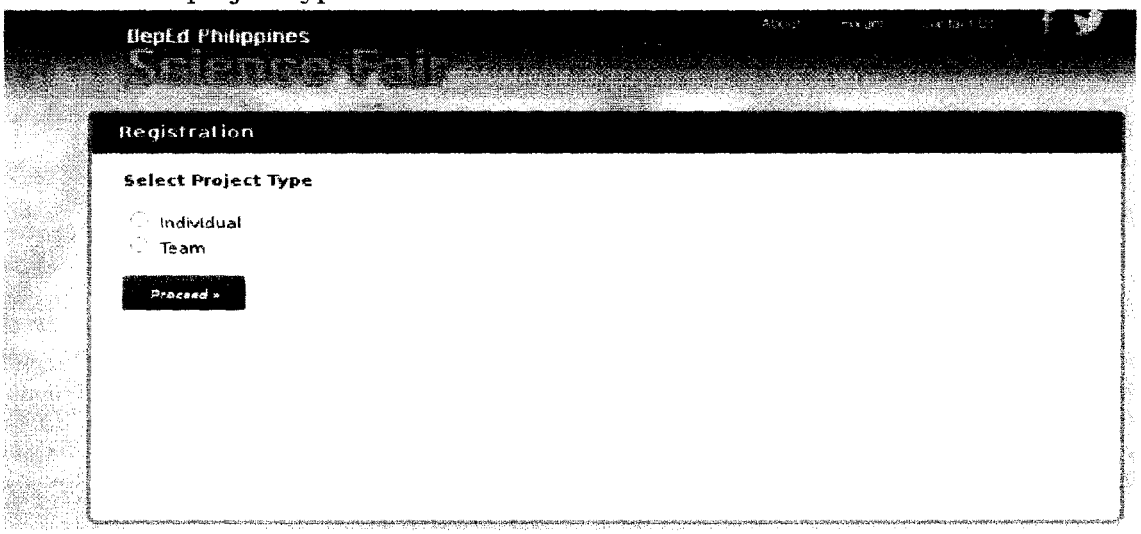
The users of the system are defined by the ff. Roles and access:

1 Student – register and submit forms online, post messages in forum
2 SRC/BOJ – rank the projects submitted
3 Coordinator – select the winners that will proceed to the next level
4 Mentors view
5 the forms submitted by the students and post messages in forum
6 Moderators – view and delete the messages in forum
7 Administrator – allowed to access the CMS to manage users, content and view logs

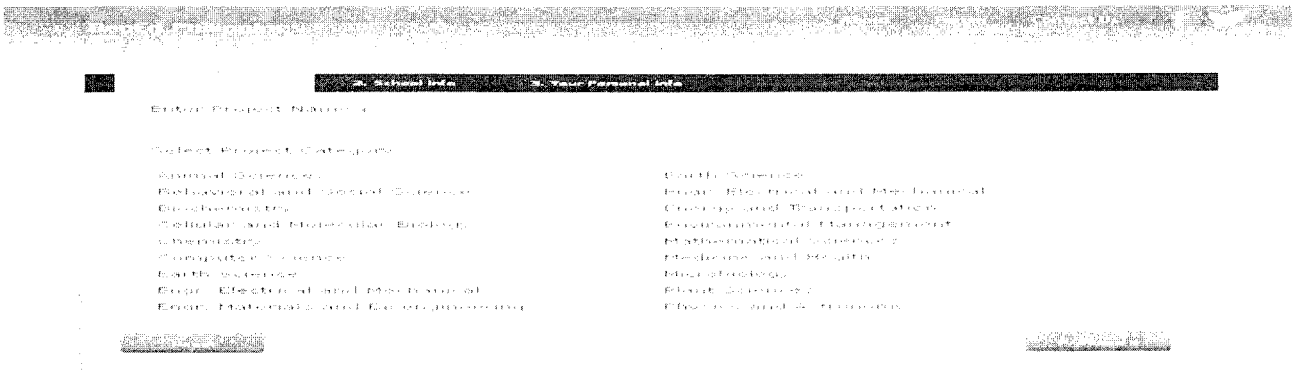
III. Students Registration Guide

1. Go to http://www.depednstf.com/registration.php

2. Select the project type and click <Proceed>.



3. Complete all the required fields in the section Create Project, School Info and Your Personal Info.



1. Check email for confirmation.
2. Click the link on the email to login.

Login

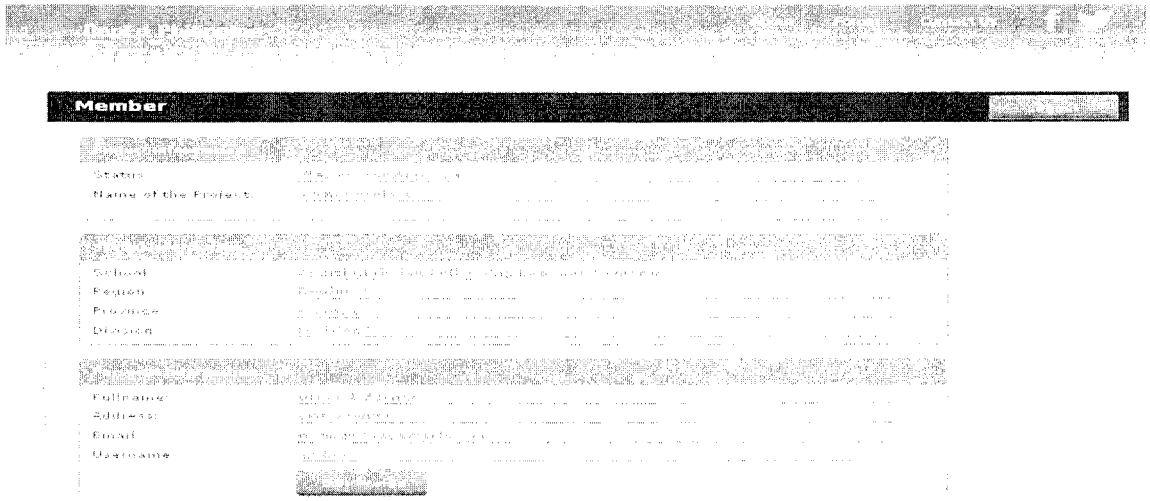
Login page

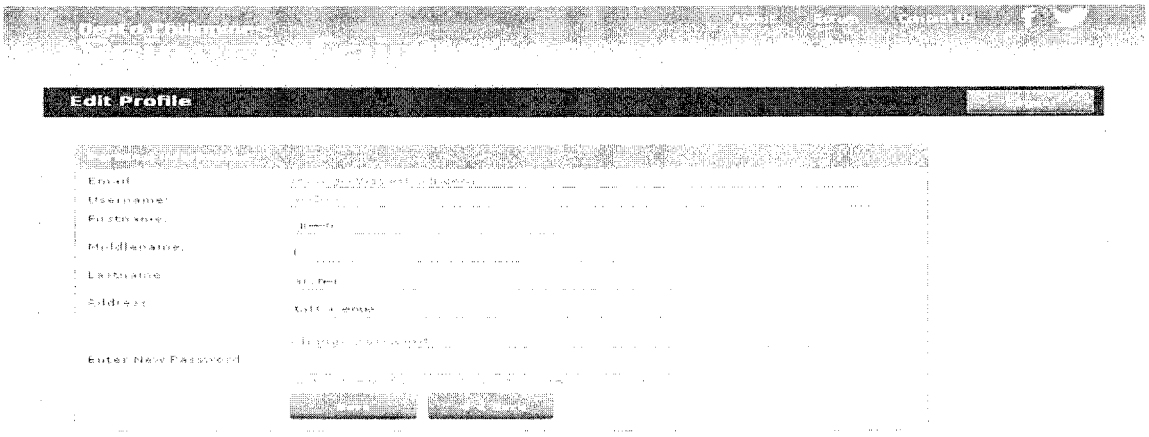
1. Type your username/password on the login page. Click on <Sign In>.
2. You will be directed to the Member Details page

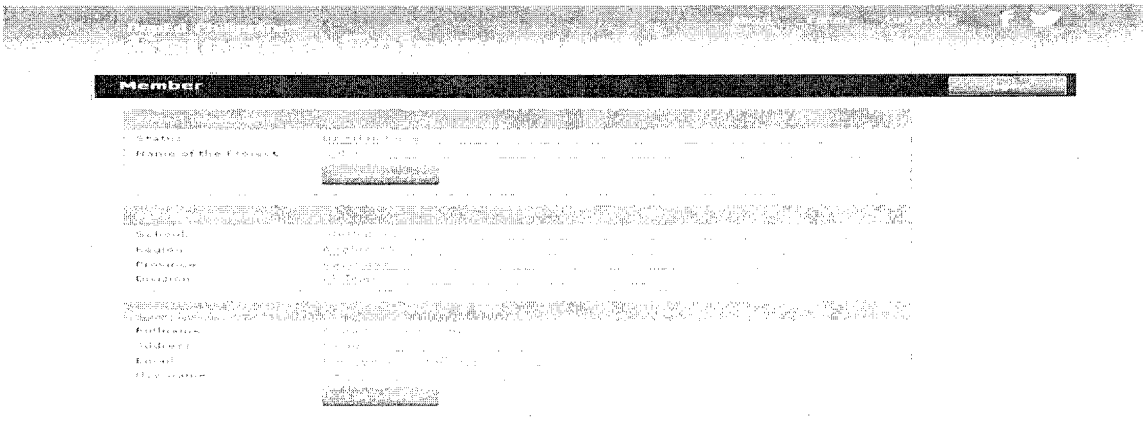
How to edit profile:

1. Click on the <Edit Profile> button.

2. Modify the fields that you want to change and click on the <Save> button.





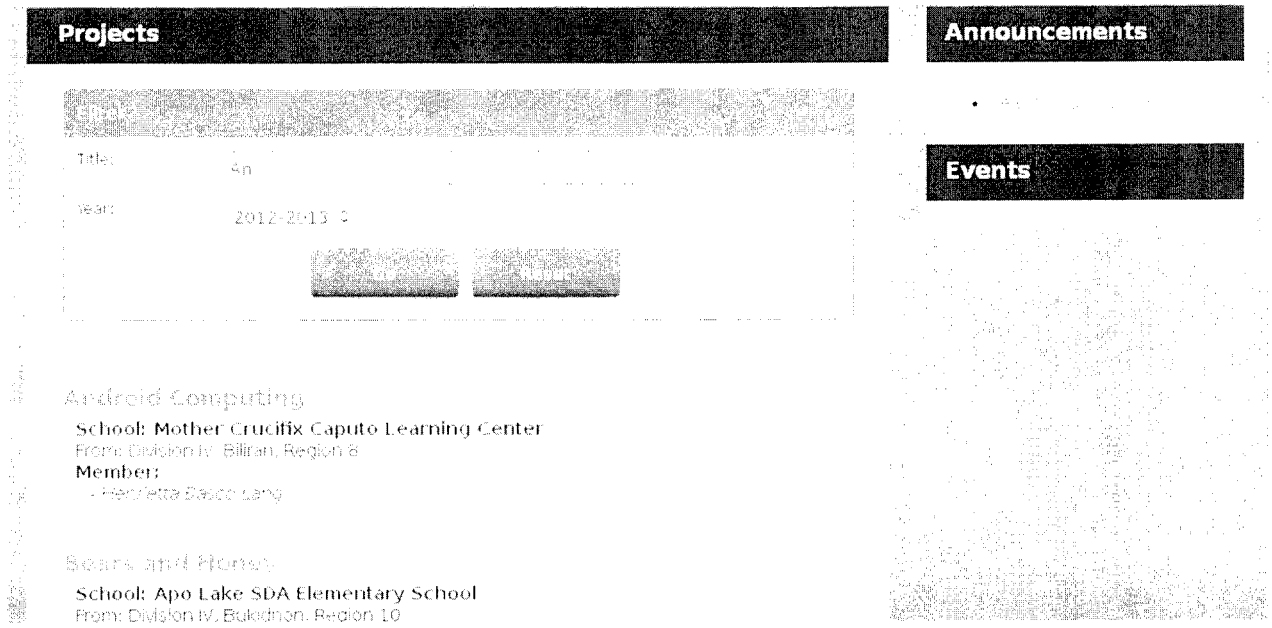


Approved project Member Details page

How to view list of projects:

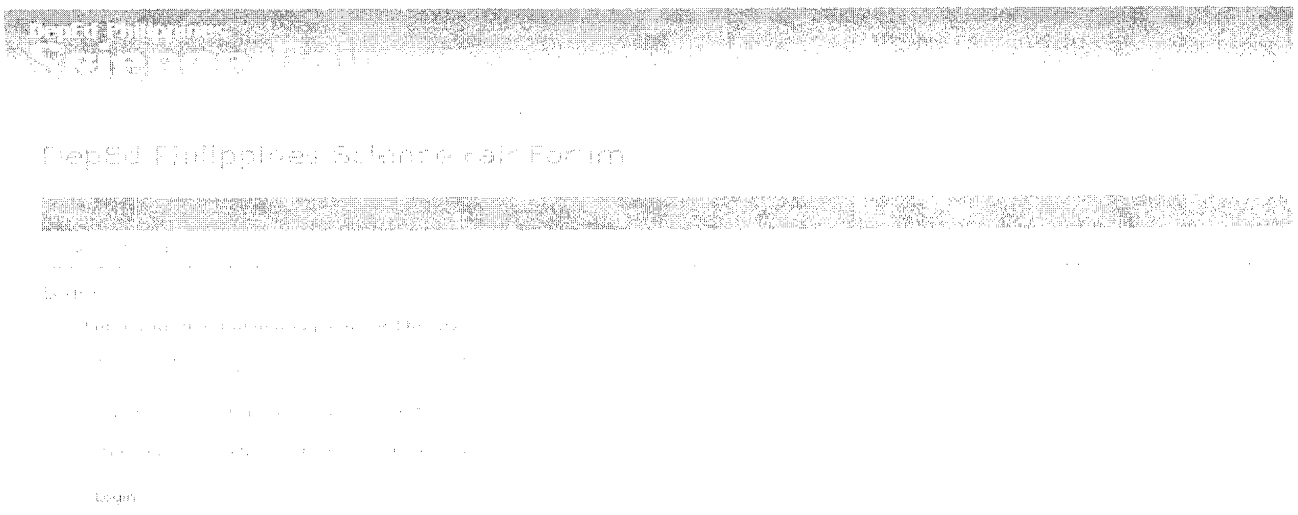
1. Click on Projects on the menu panel.

2. You may filter the projects by typing the filter criteria in the Filter Box and click on <Go>. Click on <Reset> to get back to the original list.

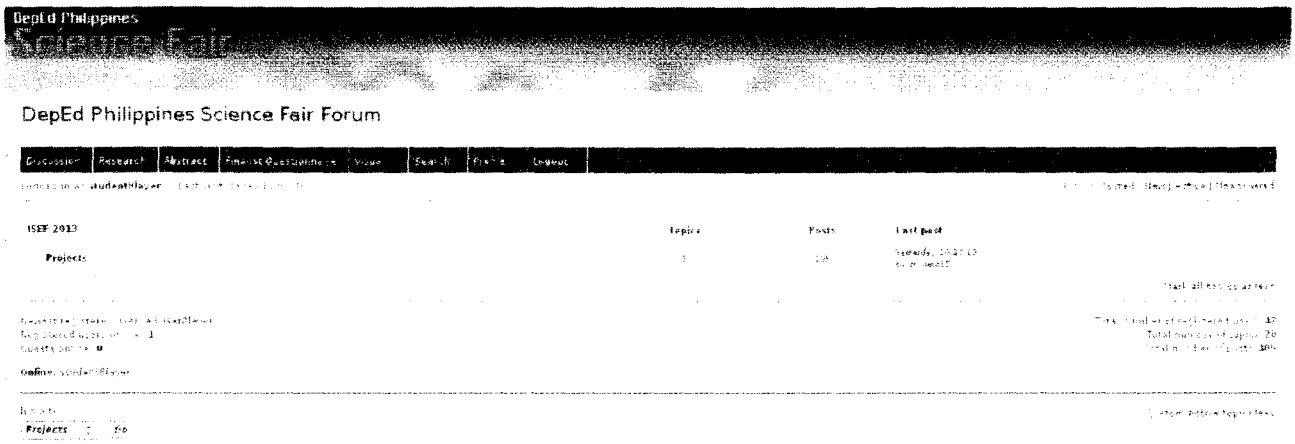


Forum Login

1. Type your username/password on the forum link. Click on <Login>.

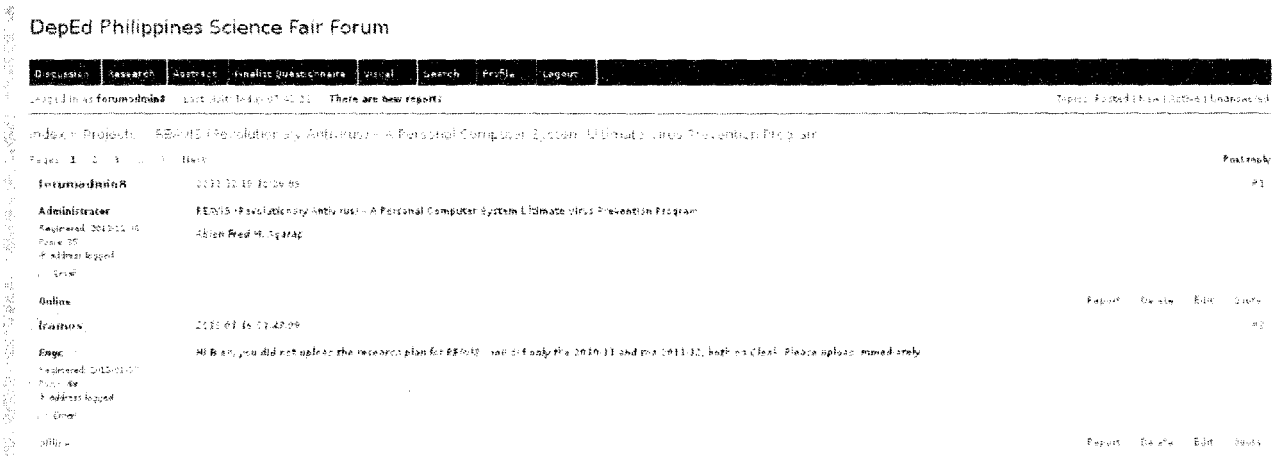


2. You will be directed to the initial screen of forum with your project.



How to Post comments

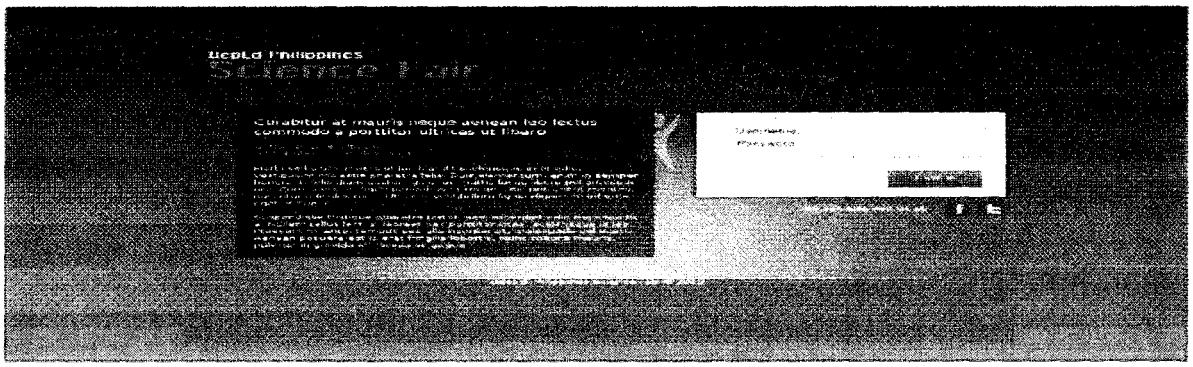
1. Click on the topic of the project. You will be directed to the discussion thread of the topic.

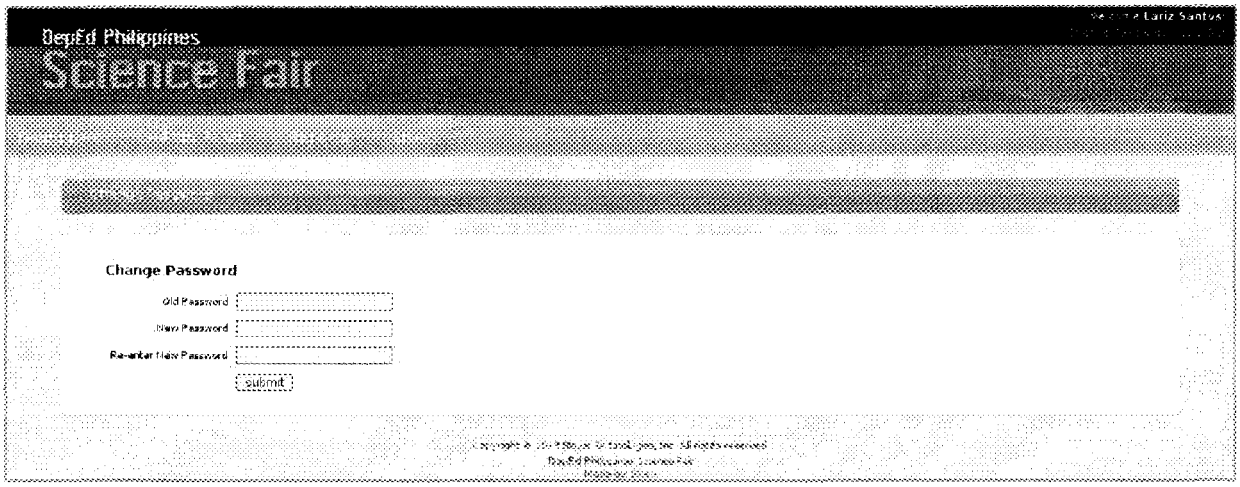


2. Click on the <Post Reply> link on the upper right corner of the page.

IV. Coordinators Guide

1. Login at the system site http://www.depednstf.com/system using the username/password provided by the admin.





How to Change Password

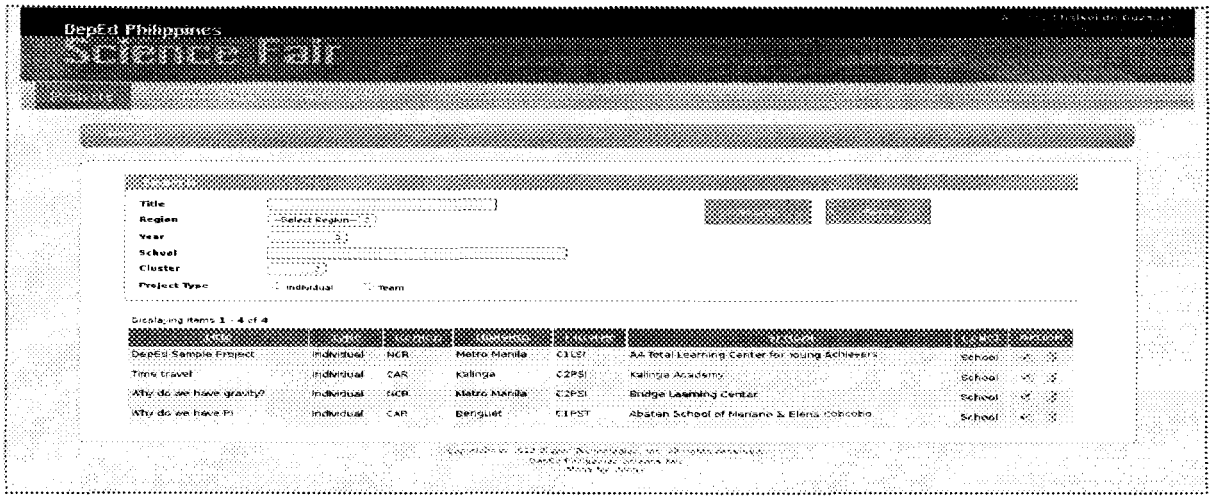
1. Click on the Change Password link at the upper right corner of your window.

2. Type the old password and the new password, and then click on <Submit>.

3. A message will appear on the screen confirming the changed password.

How to qualify the project to the next level

1. Go to Projects → School /Division/Regional/National Level

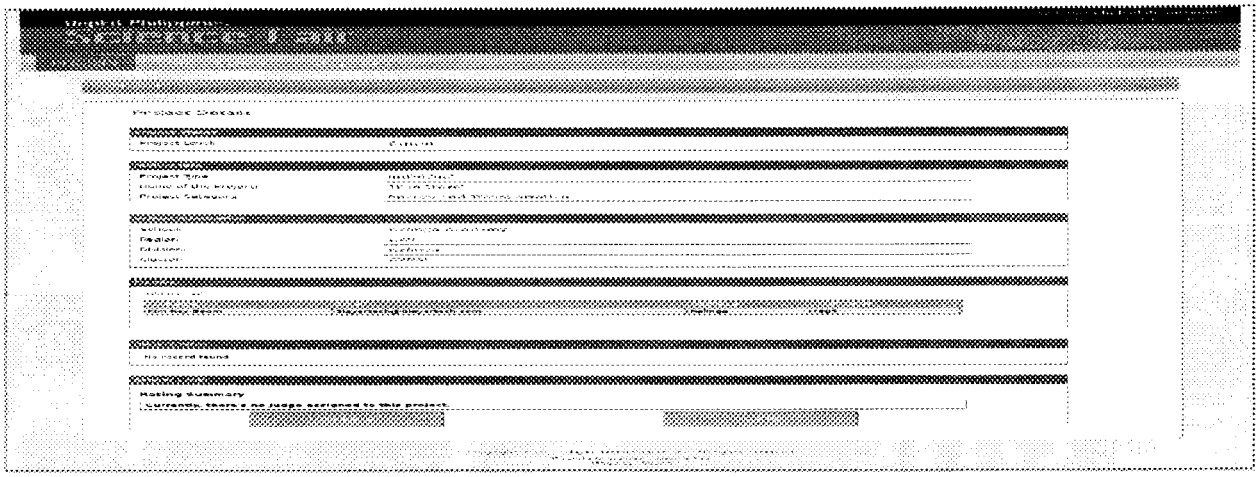


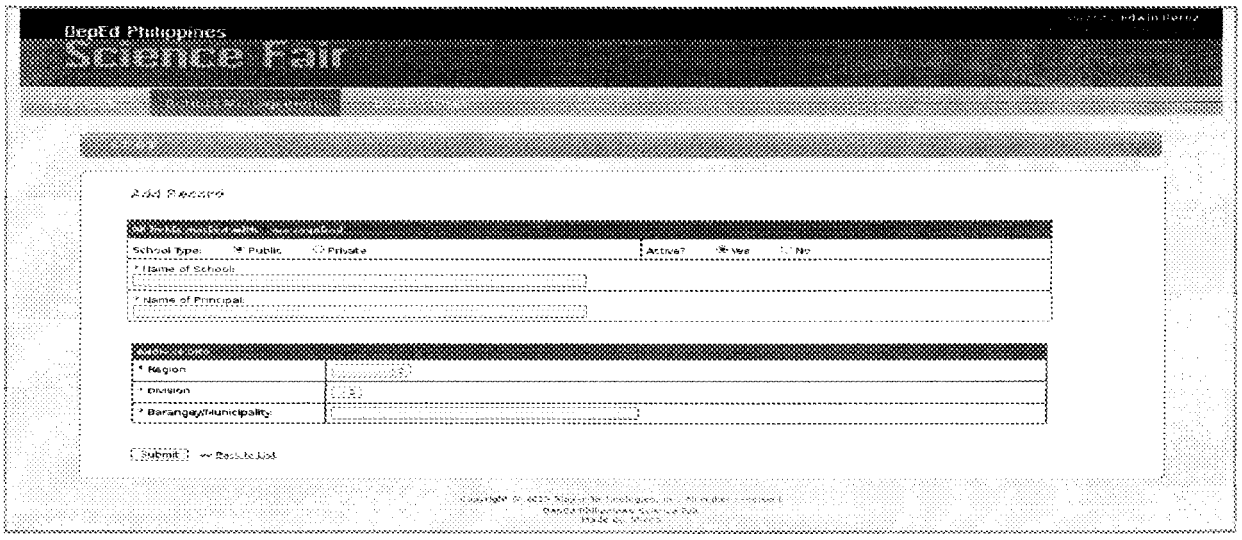
2. Select the project you want to qualify/eliminate by clicking on the <Edit Record> icon (hammer) under the Action Column.

3. Click on the <Eliminate> button to eliminate the project or <Qualify> button to move to the next level.

How to filter the list of school

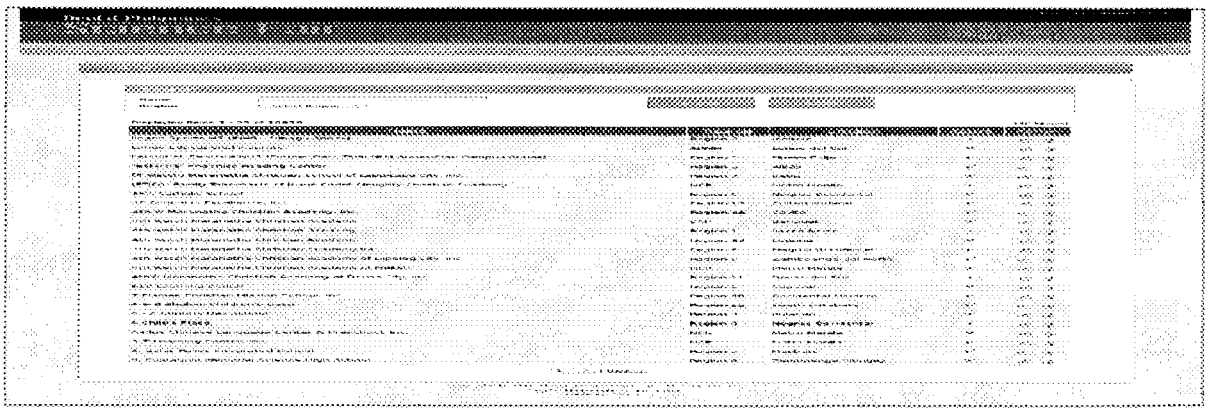
1. Type the list you want to filter by keying the search criteria in the search box.
   <**Note:** > You may fill-up the search with only one or all of the criteria.
2. Click on the Search button to see the search result.





How to add a school

1. Click on the School Management on the menu panel.



2. Click on the <add Record> link at the upper right corner of the School list page.

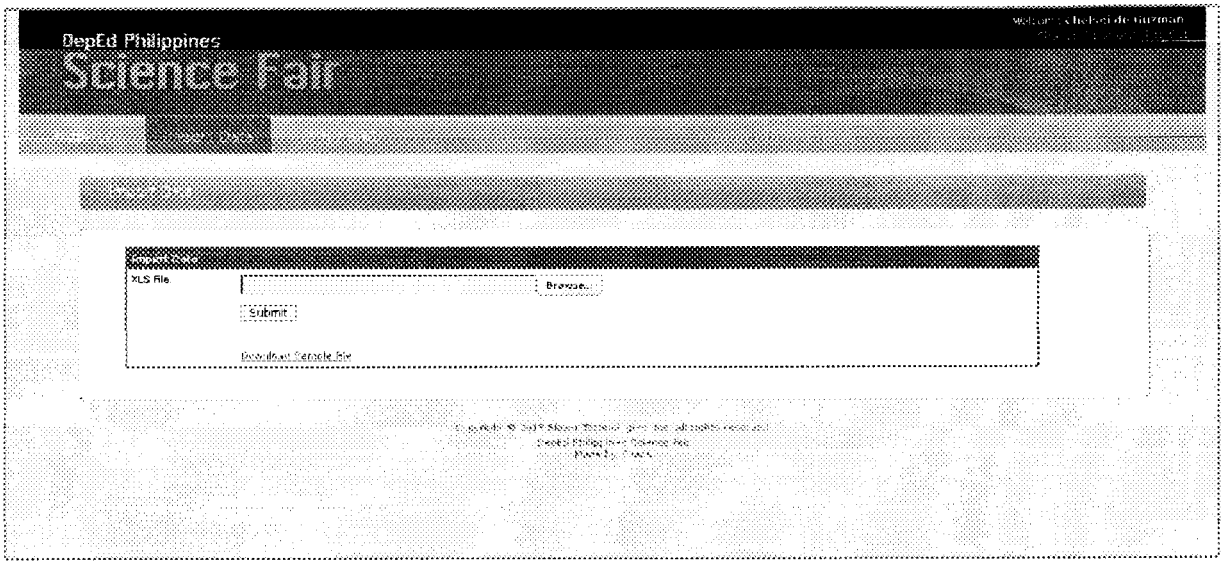
3. Type all the required data on the school form and click on <Submit>.

<Note: > Only Division Coordinator has the permission to add a new school.

How to batch upload lists of BOJ/SRC

1. Click on <BOJ/SRC> under the <Import Data> menu.
2. Click on the <Browse> button beside the filename textbox.
3. Select the excel file from your lists of files.

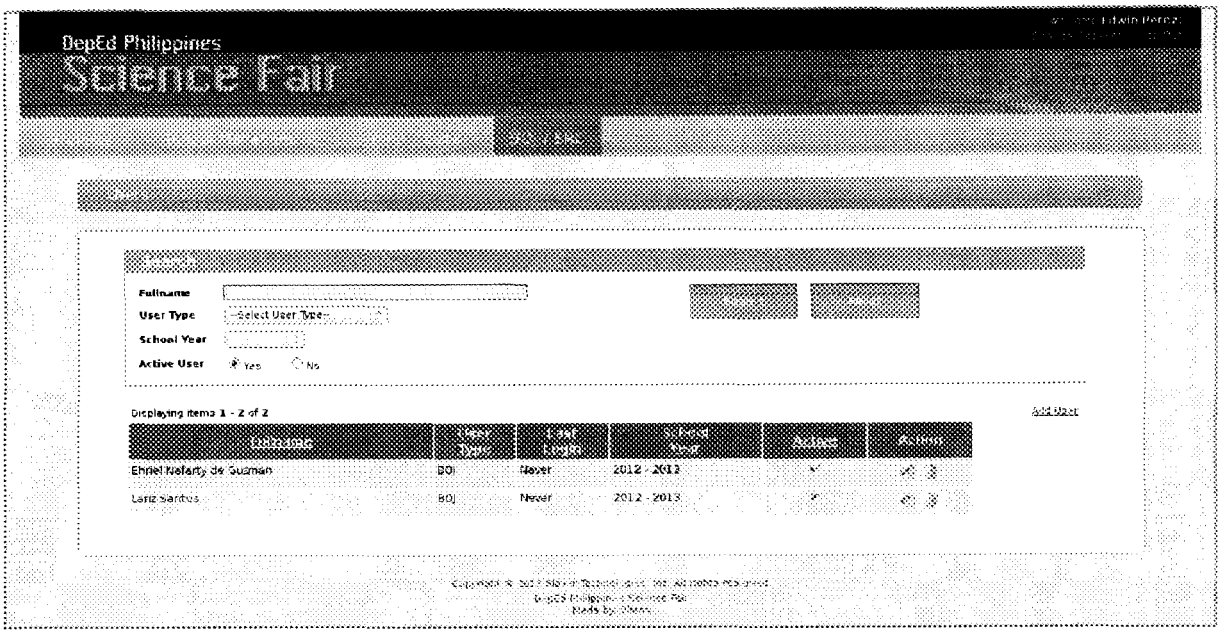
<Note :> The format of the excel should be the same as the sample file.
To view the sample format, click on the <Download Sample File> link.
4. Once the path and the filename appeared on the textbox, click on the <Submit> button.



<Note : > The list of BOJ/SRC/Coordinator will come from the outside of the system. It may be through email or whatever policy that DepEd has set.
<Note : > The school coordinator may only upload the school level BOJ/SRC.
The Division coordinator may only upload the school coordinators and division BOJ/SRC.
The Regional coordinator may only upload the division coordinators and regional BOJ/SRC.
The National coordinator may only upload the regional coordinators and national BOJ/SRC.

How to deactivate a user

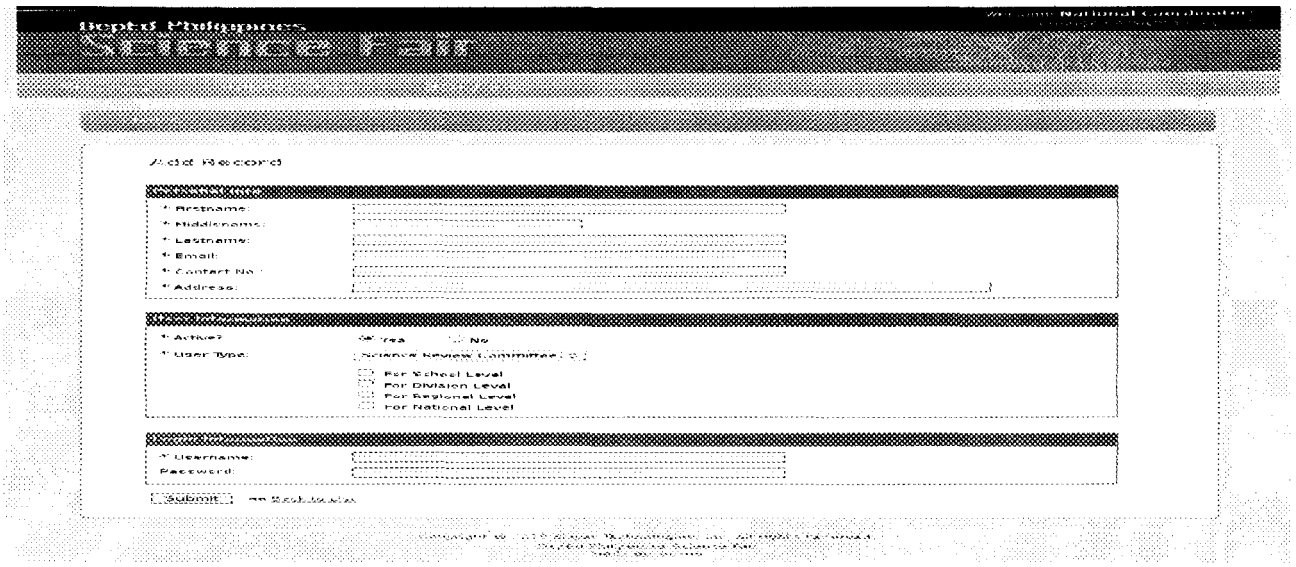
1. Click on <BOJ/SRC> under the menu panel.
2. Filter the user you want by using the search criteria.
3. Click on the check icon under the Active Column of the user list.
4. The user will be removed from the current list.



How to reactivate a user

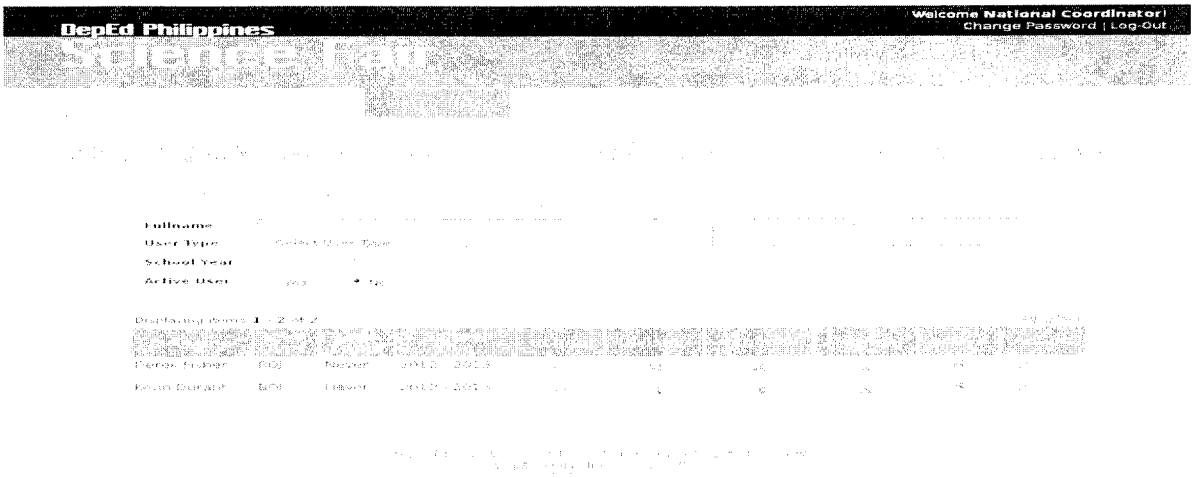
1. Click on <BOJ/SRC> under the menu panel.
2. Click on the <No> on the radio button selection of Active users.
3. Select which user to reactivate again from the list of users and click on the <X> icon in the Active column.

The user will be removed from the current list and will appear in the active list.



How to Add/Modify Users

1. To add a new user, click on the <Add User> link on the upper right corner of the user list box.
2. Type the user details in the form and click on <Submit>.
3. 4. To modify a user's data, select the user you want to change from the list by clicking the <Edit Record> icon(hammer) under the Action Column.
4. Modify the user data and click on <Submit>.

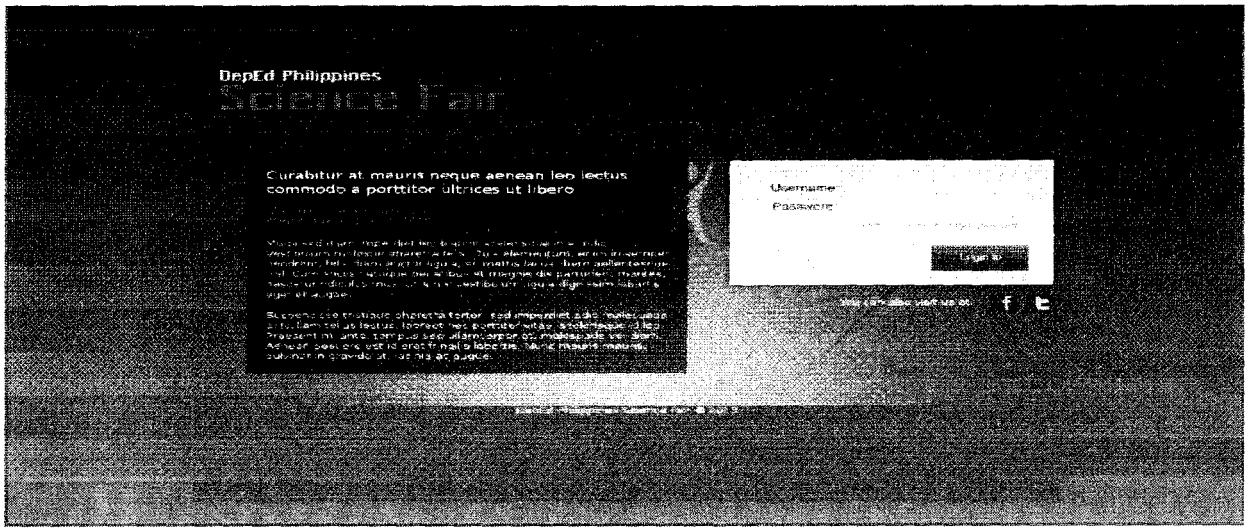


3. Type your message and click on <Submit>.

4. The posted comment will appear on the topmost thread.

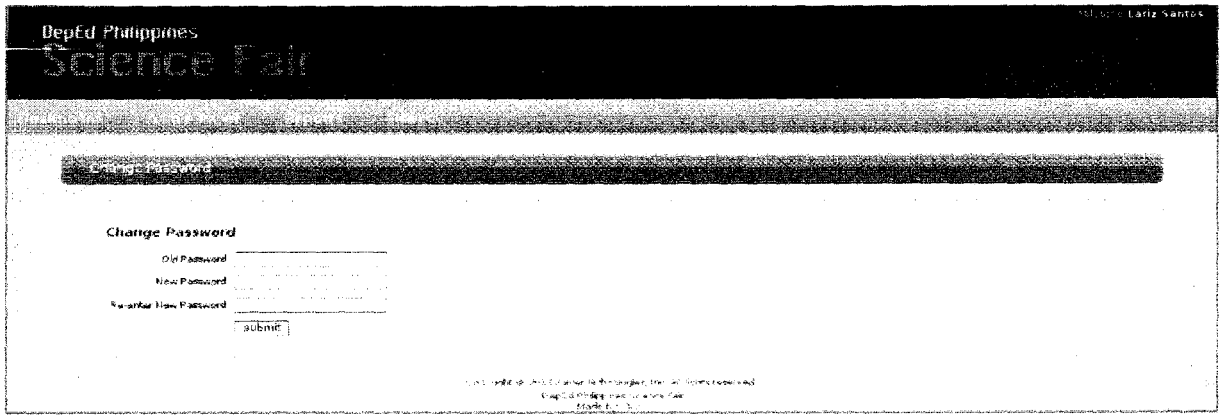
V. BOJ/SRC Guide

1. Login at the system site http://www.depednstf.com/system using the username/password provided by the admin.



How to Change Password

1. Click on the Change Password link at the upper right corner of your window.

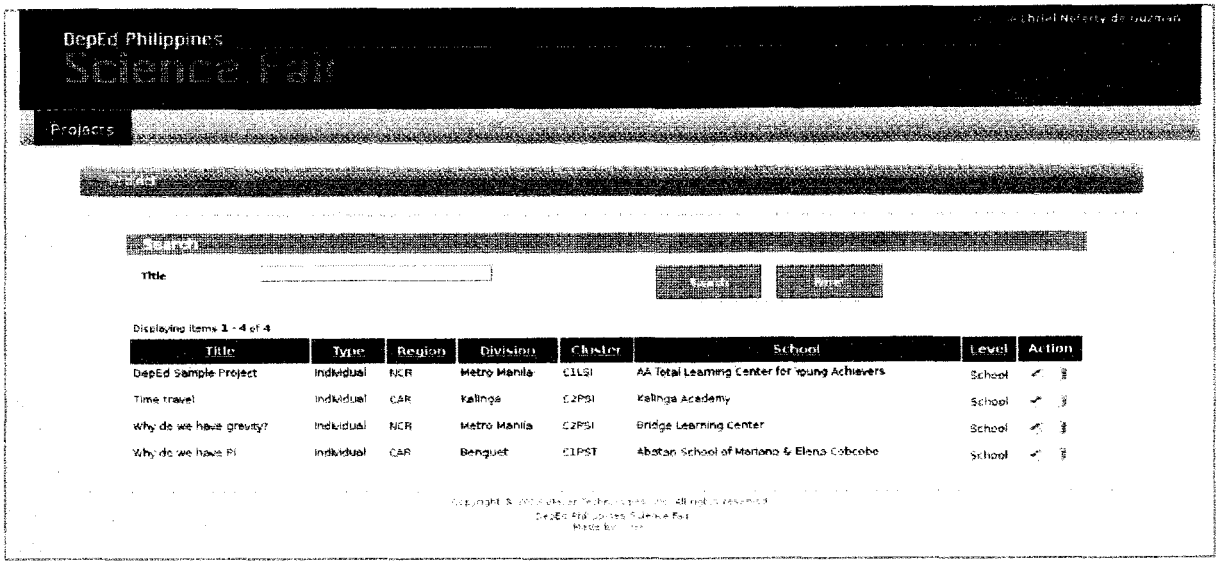


2. Type the old password and the new password, and then click on <Submit>.

3. A message will appear on the screen.

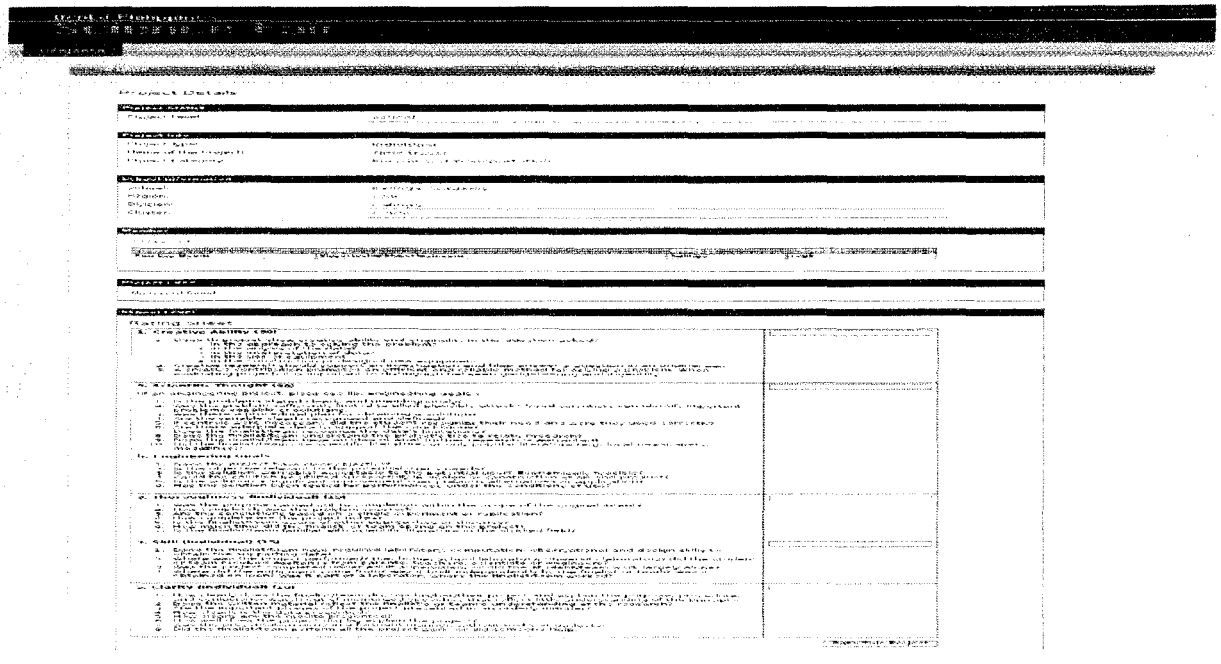
How to Rank the project

1. Go to Projects → School /Division /Regional/National Level



2. Select the project you want to judge by clicking on the <Edit Record> icon (hammer) under the Action Column.

3. Fill up the text box in the right column of the Rating Sheet and click on the <Rate this Project> button.



Project Evaluation Form

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

Category	Peer Evaluation	Teacher Evaluation	Expert Evaluation
1. **Creative Ability** (30) 1. Does the project show creative ability and originality in the questions asked? a. in the approach to solving the problem? b. in the analysis of the data? c. in the interpretation of the data? d. in the use of equipment? e. in the construction or design of new equipment 2. Creative research should support an investigation and help answer a question in an original way. 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.			
2. **a. Scientific Thought** (30) (If an engineering project, please see 2b. Engineering Goals.) 1. Is the problems stated clearly and unambiguously? 2. Was the problem sufficiently limited to allow plausible attack? Good scientists can identify important problems capable of solutions. 3. Was there a procedural plan for obtaining a solution? 4. Are the variable clearly recognized and defined? 5. If controls were necessary, did the student recognize their need and were they used correctly? 6. Are there adequate data to support the conclusions? 7. Does the finalist/team recognize the data's limitations? 8. Does the finalist/team understand the project's ties to related research? 9. Does the finalist/team have an idea of what further research is warranted? 10. Did the finalist/team cite scientific literature, or only popular literature, or only popular literature (e.g. local newspapers, magazines)? **b. Engineering Goals** 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?			
3. Thoroughness (15) 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 & dates)* of the experiment recorded in the research data logbook?			
4. **Skill** (15) 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?			
5. Clarity (10) 1. How clearly does the finalist or team discuss his/her/their project and explain the purpose, procedure, and conclusions? Watch out of 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?			
TOTAL			
Signature over printed name of the evaluators			

Evaluators Profile

Evaluator	Proper Address (Mr., Ms., Dr., Eng., etc.)	Name	Present Grade Level / Position & Specialization	School / Institution	Contact Number / E-mail Address
Peer Evaluator					
Teacher Evaluator					
Expert Evaluator					

2013-2014 National Science and Technology Fair

Scientific Review of STF Project Write-up

(Enclosure No. 9 to DepEd Memorandum No. 159, s. 2013)

Fair Division: Life Science [ ] Physical/Applied Science: [ ] Level: National

Cluster 1: [ ] Cluster 2: [ ] Venue:

Category: Individual: [ ] Team: [ ] Date:

Instruction: Please put a check [✓] on appropriate box and write recommendations on the space provided

Project Code No.	Recommendations
Completed forms,signature and dates (to be verified by the Science Fair Secretariat) [ ] complete [ ] incomplete	
Evidence of use of reference materials [ ] adequate [ ] inadequate [ ] needs certification/data book	
Evidence of proper laboratory supervision [ ] adequate [ ] inadequate [ ] needs certification/data book	
Use of accepted research techniques [ ] adequate [ ] inadequate [ ] needs certification/data book	
Use of pathogenic organisms, hazardous substances and devices/disposal of wastes [ ] Proper [ ] Improper	
Status of investigatory project [ ] original concept of study (does not violate intellectual property rights) [ ] with innovation [ ] Research Plan [ ] with violation found [ ] Project Data book [ ]needs changes/improvement	
Over-all evaluation of project [ ] Approved [ ] Disapproved	

CERTIFICATION

This is to certify that the above project was reviewed by the National Level S & T Fair Scientific Review Committee.

SRC Member Printed Name and Signature SRC Member Printed Name and Signature SRC Member Printed Name and Signature

Date Reviewed/Approved/Disapproved_____