Republic of the Philippines
Department of Education
CORDILLERA ADMINISTRATIVE REGION

May 16, 2022

REGIONAL MEMORANDUM
No. 228 . 2022

REGIONAL SCIENCE AND TECHNOLOGY FAIR 2022

To: Assistant Regional Director
Schools Division Superintendents
Education Program Supervisors for Science
All Others Concerned

1. The Regional Office through the Curriculum and Learning Management Division shall conduct a face-to-face ***Regional Science and Technology Fair (RSTF)*** this July 6-8, 2022 with the theme, Expanding the Horizon: Futures of Science, Technology, Engineering and Mathematics (STEM).

2. This year's RSTF aims to empower the youth and cultivate innovation, and creativity amid the changing world and showcase the competence of learners in addressing community problems for sustainable development.

3. The Virtual RSTF will banner the following events and competitions:
   a. Siyensikula – an original video creation and competition
   b. Likha – a Research Proposal Competition
   c. STEMtokperiments – aTiktok Science Experiments Competition
   d. AghamBayaniJuan – a public community exhibition of partners in Science, Technology, Research, and Innovation

4. The Schools Division Offices shall conduct their own selection and screening process for their entries and participants to the Regional Science and Technology Fair.

5. The documents below are enclosed for the information and guidance of all concerned.
   Enclosure No. 1: Siyensikula Mechanics
   Enclosure No. 2: Siyensikula Criteria/ Peer to Peer Evaluation tool
   Enclosure No. 3: Siyensikula waiver and Certification
   Enclosure No. 4: Likha – Mechanics and Criteria
   Enclosure No. 5: Likha – Rubrics and Evaluation Tool (screening)
   Enclosure No. 6: Likha – Rubrics and Evaluation Tool (Final Judging)
   Enclosure No. 7: Likha – Project Proposal Template
   Enclosure No. 8: STEMtokperiments – Mechanics and Criteria
   Enclosure No. 9: Timeline NSTF 2022

6. For queries, please contact Rosita C. Agnasi, OIC-CLMD or Asterio C. Madalla through this number: (074) 422-7096 or mobile number: 09466522935.

7. Immediate dissemination of and strict compliance with this memorandum is directed.

ESTELA P. LEON-CARIÑO EdD, CESO III
Director IV/Regional Director

For Authority of the Regional Director:

FLORANTE E. VERGARA
Director III/Assistant Regional Director

CLMD/RCA/acm

(Enclosure 1 to Regional Memorandum No. 228 ,2022 s. 2022)

Siyensikula Mechanics

1. This competition is open to all Junior and Senior High School students from both Public and Private Schools in the country. Only individual entries are allowed for the siyensikula.

2. The participant/ s must discuss a difficult topic under Physical Sciences, Life Sciences, Mathematics, or an Engineering concept in a clear, creative, and engaging manner through a video presentation that is not more than three (3) minutes. The participants can discuss the topic in English and/or Filipino.

3. All contents in the video must be original and are owned by the participant/ s. Entries may include personal experiences and thoughtful observations. Videos must reflect that the student has carefully reviewed and examined the topic.

4. All creative visual tools such as animations, simulations, physical demonstrations, or visual aids are allowed. Entries with photos and videos which are derivative works will automatically be disqualified.

5. Each division may send 1 official entry to the Regional Siyensikula competition.

6. Entries must be submitted following subject format: "SIYENSIKULA DIVISION Video Title" STYENSIKULA Benguet Ligtas).

7. The email should include: (1) the name of the participant, (21 a Youtube video link attachment of the video entry, and (3) a pdf file of the video script along with the references in the Chicago Manual of Style. Non-submission of any of the required documents for the competition category will automatically be disqualified.

228 . 2022

(Enclosure 2 to Regional Memorandum No. _____s. 2022)

Siyensikula - Rubric Evaluation Tool

Entry No.

Criteria	Points					
	0	1	2	3	4	5
Engagement	Failed to establish engagement and did not hold viewer's attention	Somewhat interesting but did not hold viewer's attention for the entire length of the video	Fairly interesting and held viewer's attention for the entire length of the video.	Interesting and engaged the viewer throughout run of the video	Very interesting and throughout the video, viewer was excited to see what would come next	Captivating and made the viewer want to watch other videos made by the entrant
Explanation	Failed to explain the subject matter clearly. Video did not help viewer understand subject matter	Explanation was at times confusing and viewer was unable to understand much of the subject matter	Explanation was fairly clear but covered only general concepts	Explanation was clear and covered some topics beyond general concepts	Explanation was very clear and covered many topics beyond general concepts	Viewer was able to fully understand the explanation, and video provided a deep dive into the intricacies of the subject matter
Creativity	No elements of the video demonstrated a creative approach to explaining the subject matter	The explanation was standard and contained one or two resourceful elements	Parts of the video used creative approaches that made those parts of the explanation stronger.	Many parts of the video took an unorthodox approach to explaining the subject matter which made the overall explanation stronger	The entrant implemented a creative approach throughout the entire video that helped the viewer understand the subject matter	Video provided an inventive approach that should be used to teach this subject matter
Difficulty	Subject matter is typically covered at the elementary school level	Subject matter is typically covered at the junior high school level	Subject matter is typically covered at the senior high school level.	Subject matter is typically covered at the senior high school level but the video expands upon more complex areas of the subject matter	Subject matter is typically covered at the advanced senior high school level or early college level	Subject matter is typically covered at the advanced college level or higher
Total (Maximum of 20 points)						

(Enclosure 3 to Regional Memorandum No. 228 , 2022 s. 2022)

CERTIFICATION

KNOWN ALL MEN BY THESE PRESENTS:

That I/We _____ of _____ writer/s in the _____ hereby certify that our entry is of our own, and is new and original to the best of our knowledge. I/We further certify that we give our permission for DepEd – Bureau of Curriculum Development to share the said Videos as supplemental learning materials to be used in the classrooms.

IN WITNESS WHEREOF, I/We have hereunto set our hands on this _____ day of _____, 2022 at _____.

_____ Witness

_____ Witness

SUBSCRIBED AND SWORN TO before me this _____ day of _____ 2021, at _____, Philippines, affiant _____, exhibiting his proof of identity as above stated.

Doc. No.:
Page No.:
Book No.:
Series of 2022

Note: ***Please submit this form together with your entries on or before the Deadline of submission.***

(Enclosure 4 to Regional Memorandum No. 228 ·2022 s. 2022)

Likha – A Full Proposal Research Competition

MECHANICS AND CRITERIA

1. This competition is open to all Grade 9 - 12 students from both Public and Private Schools in the country.

2. The first pl,ace winners at the Regional level shall represent the region to the National STF competition as approved by the Screening Committee. Only one (1) entry is allowed per category.

3. The four (4) major categories are Life Science, Physical Science, Robotics and Intelligent Machines, and Mathematics and Computational Sciences.

4. The official entries to the Regional level Likha Competition should be properly endorsed by the Schools Division Superintendent through an endorsement letter on or before the deadline of submission on June 27, 2022.

5. Entries must be submitted via email with a subject format: LIKHA_DIVISION CATEGORY (ex. LIKHA BENGUET-LS-I).

6. The email should include completely filled-out Project Form /Enclosure 5,1 and other relevant files in PDF format Incomplete submission of the required documents may disqualify the Division entries.

7. The RSTF Technical Working Committee reserves the right to remove, reject, or disqualify any entry if it infringes, misappropriates, or violates any rights of any third party including, without limitation patent, copyright, trademark or right of privacy or publicity.

8. The Project Proposal will be screened according to the following criteria:

Criteria	Weight
Originality and Innovation	25%
Technical/Scientific Merit	25%
Community Connection and Impact	25%
Excellence of method	25%
Total	100%

9. The Project Proposal will be **judged** according to the following criteria.

Criteria	Description	Weight
Originality and Innovation	The project provides novel and innovative solutions to issues in the environment	20%
Technical/Scientific Merit	Sound scientific basis to generate new knowledge or apply existing knowledge in an innovative manner	20%
Community Connection and Impact	Outcomes are expected to address the issue or problem identified.	20%
Excellence of method	Solution and method proposed and cost effective, viable, timely and relevant	20%
Presentation	Proponent/s provide/s a clear explanation of the facts, theories, thorough understanding of the expected output of the proposal.	20%
Total		100%

10. Project Format Descriptions:

a. **Executive Summary**- a brief discussion about the proposal.
b. **Introduction**- a declaration of the project and its idea and context to explain the goals and objectives to be reached and other relevant information that explains the need for the project and states the aims to describe the amount of work planned for implementation; refers to a simple explanation or depiction of the project that can be used as communication material
   - **Rationale-** a brief analysis of the problems identified related to the project
   - **Significance** refers to the alignment to national S&T priorities, strategic relevance to national development and addresses current issues and concerns.
   - **Scientific Basis-** scientific findings, conclusions or assumptions used as justification for the research.
   - **Theoretical Framework-** the structure that summarizes concepts and theories that serve as basis for the data analysis and interpretation of the research data.
   - **Objectives-** statements of the general and specific purposes to address the problem areas of the project.

c. **Review of Literature** - refers to the following: (a) related researches that have been conducted, state-of-the-art or current technologies from which the project will take off; (b) scientific/technical merit; (c) results of related research conducted by the same Project Leader, if any; (d) Prior Art Search, and; (e) other relevant materials.

d. **Methodology** - description of the design and engineering solution proposed to address the problem, the (a) variables or parameters to be measured and evaluated or analyzed; (b) treatments to be used and their layout, (c) experimental procedures and design; (d) statistical analysis; (e) evaluation method and observations to be made, strategies for implementation (Conceptual/Analytical framework).

e. **Expected Output and Potential Impact** – discusses the possible outcome of the project, the target beneficiaries, socio and economic impact

f. **Workplan and Target Deliverables**- indicates the timeline of activities to be accomplished in the conduct of the project.

g. **References** – list of reference materials such as journals, designs and patents, and online sources. It should follow Chicago Manual of Style in referencing.

(Enclosure 5 to Regional Memorandum No. 228 s. 2022)

LIKHA - RUBRIC EVALUATION TOOL (SCREENING)

CRITERIA	POINT
1 Originality and Innovation (25)	
1 Does the project show originality and innovation in terms of	
a proposed approach in solving the problem?	
b research design?	
c research methodology?	
d construction or design of a new or improved equipment?	
2 Did the research project considered an issue/problem/gap that previous research projects did not addressed?	
3 Does the project transforms an idea or solution into a creative, unique and major improvement to the current technology process/product technique design?	
2 a Technical Scientific Merit (25)	
(If an engineering project, please see 2b Engineering Goals.)	
1 Is the problem stated explicitly and concisely?	
2 Was the approach to solve the problem supported by relevant, critical and logical related literatures (scientific basis/theoretical framework/mathematical theory)?	
3 Did the finalist team cite sufficient number of credible related literatures to provide a solid understanding and pre-requisite information for readers to better understand the research project?	
4 Does the finalist team recognize the projects' limitations?	
5 Does the analysis of background information with depth?	
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 Will the solution be tested for performances under standardized protocols?	
3 Community Connection and Impact (25)	
1 Did the project addressed a relevant research issue? (e.g. food safety, water conservation, cyber security, traffic/road congestion, health, disaster mitigation, agriculture and environment and others)	
2 Did the student clearly defined the extent on how the research project can potentially benefit and meet the needs of the society?	
3 Does the proposed solution gives value, effectiveness and efficiency to their target sector?	
4 Excellence of Method (25)	
1 Was the research methods supported by relevant and credible related literatures?	
2 Was there an efficient, thorough, valid and reliable procedural plan to attain the research objectives?	
3 Are the variables clearly identified and defined?	
4 If controls were necessary, did the student recognize their need and will be used correctly? For the extraneous variables, did the student identified methods on how to control such variables?	
5 Does the critical elements (e.g. treatments, techniques, protocols, replications, trials) of the research design and methods appropriately developed?	
6 Does the project specifically and clearly explained what and how quantitative and qualitative data will be collected?	
7 Does the project recognize ethical or safety issues and has adequate plans to manage risks?	
8 Does the project include appropriate protocol's procedures for waste disposal and data analysis?	
9 Is the proposed timeline/workplan appropriate, achievable, practical and feasible?	
TOTAL	

Signature over printed name of the evaluator

(Enclosure 6 to Regional Memorandum No. 228 ·2022 s. 2022)

LIKHA - RUBRIC EVALUATION TOOL (FINAL JUDGING)

CRITERIA	POINT
1. Originality and Innovation (20)	
a. Does the project show originality and innovation in terms of:	
a. proposed approach in solving the problem?	
b. research design?	
c. research methodology?	
d. construction or design of a new or improved equipment?	
2. Did the research project considered an issue/problem/gap that previous research projects did not addressed?	
3. Does the project transforms an idea or solution into a creative, unique and major improvement in the current technology/process/product/technique/design?	
2. a. Technical Scientific Merit (20)	
(If an engineering project, please see 2b. Engineering Goals.)	
1. Is the problem stated explicitly and concisely?	
2. Was the approach to solve the problem supported by relevant, critical and logical related literatures (scientific basis/theoretical framework/mathematical theory)?	
3. Did the finalist/team cite sufficient number of credible related literatures to provide a solid understanding and pre-requisite information for readers to better understand the research project?	
4. Does the finalist/team recognize the projects' limitations?	
5. Does the analysis of background information with depth?	
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 applications?	
6. Will the solution be tested for performances under standardized protocols?	
3. Community Connection and Impact (20)	
1. Did the project addressed a relevant research issue? (e.g. food safety, water conservation, cyber security, traffic/road congestion, health, disaster mitigation, agriculture and environment and others)	
2. Did the student clearly defined the extent on how the research project can potentially benefit and meet the needs of the society?	
3. Does the proposed solution gives value, effectiveness and efficiency to their target sector?	
4. Excellence of Method (20)	
1. Was the research methods supported by relevant and credible related literatures?	
2. Was there an efficient, thorough, valid and reliable procedural plan to attain the research objectives?	
3. Are the variables clearly identified and defined?	
4. If controls were necessary, did the student recognize their need and will be used correctly? For the extraneous variables, did the student identified methods on how to monitor and keep these variables constant?	
5. Does the critical elements (e.g. treatments, techniques, protocols, replications, traits) of the research design and methods appropriately developed?	
6. Does the project specifically and clearly explained what and how quantitative and qualitative data will be collected?	
7. Does the project recognize ethical or safety issues and has adequate plans to manage risks?	
8. Does the project include appropriate protocols/procedures for waste disposal and data analysis?	
9. Is the proposed timeline/workplan appropriate, achievable, practical and feasible?	
5. Presentation (20)	
1. How clearly and concisely does the finalist or team discussed his/her project and explain the rationale and procedures? 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 proposal?	
3. Are the important phases of the project presented in an orderly manner?	
4. How clearly is the rationale presented?	
5. How clearly are the research methods presented?	
6. Did the student used presentation resources as guide?	
7. Is the presentation professional with the use of colors, fonts and graphics?	
8. Did the student speaks clearly, maintains eye contact and uses appropriate scientific language?	
9. Did the student provided clear, detailed and accurate answers to the questions given?	
TOTAL	

Signature over printed name of the Judge

(Enclosure 7 to Regional Memorandum No. 228 s. 2022)

LIKHA – PROJECT PROPOSAL TEMPLATE

(1) PROJECT PROFILE

Project Title _____

Names of Project Proponent/s _____

Region _____ Division _____

School _____ Grade Level _____

Project Duration (number of months) _____

Email _____ Contact number _____

(2) CATEGORY OF RESEARCH

_____ Physical Science
_____ Life Science
_____ Robotics and Intelligent Machines
_____ Mathematics and Computational Sciences

(3)

____ Individual
____ Team

(4) THEME

_____ Food Safety
_____ Water Conservation
_____ Renewable Energy
_____ Cyber Security
_____ Traffic / Road Congestion
_____ Health
_____ Disaster Mitigation
_____ Agriculture and Environment
_____ Others (please specify)

(5) EXECUTIVE SUMMARY (not to exceed 200 words)

(6) INTRODUCTION

(6.1) RATIONALE/SIGNIFICANCE (not to exceed 300 words)

(6.2) SCIENTIFIC BASIS/THEORETICAL FRAMEWORK/MATHEMATICAL THEORY INVOLVED

(6.3) OBJECTIVES

General
Specific

(7) REVIEW OF LITERATURE

(8) METHODOLOGY

(9) EXPECTED OUTPUTS AND POTENTIAL IMPACTS

(10) WORK PLAN AND TARGET DELIVERABLES

(11) REFERENCES

(Enclosure 8 to Regional Memorandum No. 228 , 2022 s. 2022)

STEMTOKPERIMENTS – A TIKTOK SCIENCE EXPERIMENT COMPETITION
COPETITION MECHANICS

1. This competition is open to all Junior and Senior School students from both Public and Private Schools in the country.

2. There will be two (2) categories: (a) Junior High School, and (b) Senior High School. The video entry should feature only one (1) Tiktok user.

3. Each Division may send one (1) official entry from each category to the Regional STEMTokperiments Competition. They should be properly endorsed by the SDS through an endorsement letter on or before the deadline of submission.

4. The participant must design an experiment proving or applying a Scientific concept, theory, or law in a cheerful, lively, and creative manner through a Tiktok video that is not more than one (1) minute.

5. The participant can explain the topic/concept in English or Filipino.

6. The Tiktok Video must use the hashtags #SCITOKPERIMENTS and #RSTF2022 in uploading the video entry in Tiktok.

7. A11 contents and audio in the TikTok video must be original and are owned by the participant/s. All creative visual tools such as animations, simulations, physical demonstrations, or visual aids are allowed. The contestant will be held accountable to any issues that may arise regarding the originality and accuracy of the content.

8. The following TikTok video format are highly recommended:

   File size: The video should be up to 287.6 MB in s2e for iOS, or 72 MB on Android.
   orientation: TikTok is formatted to be viewed on a smartphone, so vertical video is best.
   Dimensions: TikTok video dimensions should be 1O80" 1920.
   Aspect ratio: The aspect ratio should be that of a standard smartphone screen, 9:16. l: I is also possible, but it will not take up the whole screen.
   File type: TikTok supports .mp4 and .mov files.
9. Entries must be submitted via email with a subject format: "#SCITOKPERIMENTS_DIVISION ENTRYNO. " (ex. "#SCITOKPERIMENTS - BENGUET_EntryNo l)

1O. The email should include: (1) the name/s of the participant/ s; (2) Tiktok video link attachment of the video entry; and (3) a pdf file of the video script along with the references in Chicago Manual of Style. Non-submission of any of the required documents for the competition category will automatically be disqualified.

11. RSTF Technical Working Committee reserves the right to remove, reject, or disqualify any entry if it: (a) violates the terms of service and privacy policy of Tiktok; and (b) infringes, misappropriates, or violates any rights of any third party including, without limitation, patent, copyright, trademark or right of privacy or publicity.

12. The Tiktok Video will be judged according to the following criteria:

Criteria	**Percentage**
Originality and Creativity • Video is original, creative and unique.	30%
Delivery/Execution • Delivery is well planned with smooth transitions and edits. • Ideas are very organized and easily understood. • All sound and visual elements coincide with the video's content.	30%
Accuracy of Content • All information being delivered is accurate and relevant.	40%
Total	100%

(Enclosure 9 to Regional Memorandum No. 228 , 2022 s. 2022)

NATIONAL SCIENCE AND TECHNOLOGY FAIR TIMELINE

Activity	Date/Schedule
School and Division Level Screening	May 30 – June 3, 2022
Regional Level Science and Technology Fair	June 27 – July 1, 2022
Submission of Entries for the National Level Science and Technology Fair	July 15, 2022
National Level - Preliminary Screening of Entries	July 18 – 22, 2022
National Science and Technology Fair Culmination Program and Awarding Ceremony	August 1 – 5, 2022