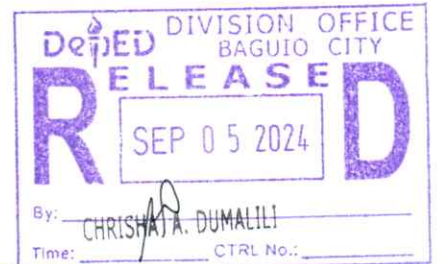




Republic of the Philippines
Department of Education
CORDILLERA ADMINISTRATIVE REGION
SCHOOLS DIVISION OFFICE OF BAGUIO CITY



September 4, 2024


DIVISION MEMORANDUM

No. **494-2024**

2024 DIVISION SCIENCE FESTIVAL

To: All Chief Education Supervisors
Education Program Supervisors
Public School District Supervisors
Public and Private Elementary School Heads
Others Concerned

1. In recognition to the importance of fostering a culture of innovation and scientific inquiry among learners and teachers, this office through the Curriculum Implementation Division will conduct the **2024 Division Science Festival** on October, 19 & 26, 2024.
2. The activity aims to:
 - a. Develop and strengthen the Science, Technology, Engineering and Mathematics (STEM) skills of learners through the conduct of **Quiz Bee, SciDama, and Science and Technology Fair**;
 - b. Enhance learners' science process/research skills, critical thinking, and problem-solving abilities;
 - c. Foster collaboration among stakeholders in promoting sustainable development through innovation; and
 - d. Promote innovation and scientific exploration on local products of the region to enhance and improve the quality and maximize its marketability through the conduct of **Research Innovation and Scientific Exploration (RISE) Expo**.
3. Each school is encouraged to mobilize organizations, promote collaboration across learning areas and conduct school level activities in preparation to the district level competition. Attached are the criteria for judging and the timeline of activities. Venues and TWGs will be announced later.
4. For clarification or inquiries, please get in touch with Ms. Juliet C. Sannad, Chief of the CID at (074) 619-3491.
5. Immediate and wide dissemination of this Memorandum is desired.


SORAYA T. FACULO, PhD, CESO VI
Assistant Schools Division Superintendent
Officer-in-Charge
Office of the Schools Division Superintendent





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2024 Division Science Festival

I. TIMELINE

| No. | Activities | Timeline |
|-----|---|----------------------|
| 1 | Science Club Month Celebration/School Level activities | September |
| 2 | District Level Elimination-Quiz Bee, SciDama, RISE | September to October |
| 3 | Division orientation of science coordinators on the different events | September 28, 2024 |
| 4 | Submission of RISE manuscript | October 14, 2024 |
| 5 | Division Quiz Bee | October 19, 2024 |
| 6 | Research Innovation Scientific Exploration Division Expo | October 19, 2024 |
| 7 | Submission of Science Investigatory Projects for Division Scientific Review (SRC) | October 10, 2024 |
| 8 | Division Science and Technology Fair | October 26, 2024 |
| 9 | Division SciDama | October 26, 2024 |

II. MECHANICS

A. Science and Technology Fair

a. Theme: “Towards a Shared Vision: Exploring the Future for a Better Tomorrow”

b. Categories

| Individual | Team |
|---------------------------------------|---------------------------------------|
| Life Science | Life Science |
| Physical Science | Physical Science |
| Robotics and Intelligent Machines | Robotics and Intelligent Machines |
| Mathematics and Computational Science | Mathematics and Computational Science |
| Innovation Expo | Innovation Expo |

c. Eligibility

1. Open to Grades 9-12 learners from both public and private schools.
2. The project should include no more than 12 months of continuous research and should not include research activities performed before January of the previous school year (For school year 2024-2025, research projects may be accomplished within 1-12 month/s starting from January 2024 to January 2025).
3. Top 3 school winners in each category may submit for screening by the division Scientific Review Committee (SRC) and qualifiers will advance to the Division Science and Technology Fair.



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d. General Procedure

1. Submit three (3) hard(color-coded) and digital copies of the research manuscripts and other requirements (forms, etc) to the DSTF focal person, EPS, with the attached report of the conduct of the School Science and Technology Fair and endorsement by the school head on or before October 10, 2024(See Appendix 16 for the color-coding). For the parts of the manuscripts and required forms, refer to:
DepEd (2023). School, Division, Regional, and National Science and Technology Fair Guidebook.
2. For qualifiers, submit three (3) soft-bounded hard copies of the color-coded manuscripts with tags to identify the revisions done based on the review and Recommendation Report. List of qualifiers will be issued on or before October 21, 2024.
3. List of Qualifiers, schedule of setting up of display boards, and mechanics for the submission of the school shout out will be issued on or before October 21, 2024.

e. Cash Prizes

| Award | Cash Prize |
|--------------|-------------------|
| First Place | 4,500.00 |
| Second Place | 3,000.00 |
| Third Place | 2,000.00 |

B. Quiz Bee

- a. The participants will be the Top1 per district per grade Level. Participants may come from private or public schools.

| Grade Level | Participants | Coverage |
|--------------------|---|--|
| 3 | District Top1, Individual | First and Second Quarter topics; Basic Science Process Skills |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | District Top1, Individual | First and Second Quarter topics Basic and Integrated Science Process Skills |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 & 12 | District Top1, Team of three, non-STEM students | Earth and Life Science Physical Science Basic and Integrated Science Process Skills |
| 11&12 | School Top 1, Team of three, STEM students | General Biology I General Biology 2 General Physics 1 General Chemistry 1 |



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| | | |
|--|--|--|
| | | Basic and Integrated Science Process Skills |
|--|--|--|

- b. The quiz consists of three rounds: EASY, AVERAGE, and DIFFICULT questions.

| Round/Category | Type of Question | Time Limit | Credit |
|---------------------------|--|---|--------------------------------------|
| Easy | Multiple Choice, 4 options (A, B, C, D) | 10 seconds | 10 points (1 point per question) |
| Average | Multiple Choice, 4 options (A, B, C, D) | 20 seconds | 20 points (2 points per question) |
| Difficult | Without option-identification or problem solving | 30 seconds without computation 60 seconds-with computation | 30 points (3-points per question) |
| Clincher (tie breaker) | Without option-identification or problem solving | 30 seconds without computation 60 seconds-with computation | 1 point |

c. **Preparation of Questions**

- Each participant will prepare questions: Two (2) Easy, two (2) Average, two (2) Difficult, and two (2) Clincher.
- Each question will be typewritten on a 1/3 bond(long). Include the answer.
- One out of the EASY, AVERAGE, and DIFFICULT questions shall be on assessment of science process skills in the context of the given topics/content.

Basic Science Process Skills

Observing - using the senses to gather information about an object or event. Example: Describing a pencil as yellow.

Inferring - making an "educated guess" about an object or event based on previously gathered data or information. Example: Saying that the person who used a pencil made a lot of mistakes because the eraser was well worn.

Measuring - using both standard and nonstandard measures or estimates to describe the dimensions of an object or event. Example: Using a meter stick to measure the length of a table in centimeters.

Communicating - using words or graphic symbols to describe an action, object or event. Example: Describing the change in height of a plant over



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time in writing or through a graph.

Classifying - grouping or ordering objects or events into categories based on properties or criteria. Example: Placing all rocks having certain grain size or hardness into one group.

Predicting - stating the outcome of a future event based on a pattern of evidence. Example: Predicting the height of a plant in two weeks time based on a graph of its growth during the previous four weeks.

Integrated Science Process Skills

Controlling variables - being able to identify variables that can affect an experimental outcome, keeping most constant while manipulating only the independent variable. Example: Realizing through past experiences that amount of light and water need to be controlled when testing to see how the addition of organic matter affects the growth of beans.

Defining operationally - stating how to measure a variable in an experiment. Example: Stating that bean growth will be measured in centimeters per week.

Formulating hypotheses - stating the expected outcome of an experiment. Example: The greater the amount of organic matter added to the soil, the greater the bean growth.

Interpreting data - organizing data and drawing conclusions from it. Example: Recording data from the experiment on bean growth in a data table and forming a conclusion which relates trends in the data to variables.

Experimenting - being able to conduct an experiment, including asking an appropriate question, stating a hypothesis, identifying and controlling variables, operationally defining those variables, designing a "fair" experiment, conducting the experiment, and interpreting the results of the experiment. Example: The entire process of conducting the experiment on the effect of organic matter on the growth of bean plants.

Formulating models - creating a mental or physical model of a process or event. Examples: The model of how the processes of evaporation and condensation interrelate in the water cycle.

d. **Contest Proper**

1. Upon registration, the contestants shall be directed to their seats.
2. The coaches shall convene to submit and deliberate the questions.
3. Each question in the three rounds will be read twice. After the quizmaster reads the question the second time, he/she will say "GO", ONLY then the participants will write their answers. When the time is up, the quizmaster will say, "Markers Up". The participants will hold their markers up and their answers. The scorers will record their answers accordingly. A cumulative score per participant will be



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announced by the Quizmaster after each round before going to the next segment. The total score for the three rounds will be 60 points.

4. In case of a tie, tie breaker (clincher) question/s shall be asked until a definite winner emerges.
5. The participants will be provided with the papers where they will write their answers but they will bring their markers.

C. Sci-Dama

a. Participants

1. Open to Grades 3-10 learners from private and public schools.

Elementary: Top 2 per District

High School:

| District | Top | District | Top |
|----------|-----|----------|-----|
| 1 | 2 | 6 | 2 |
| 2 | 2 | 7 | 3 |
| 3 | 4 | 8 | 2 |
| 4 | 2 | 9 | 2 |
| 5 | 2 | 10 | 3 |

b. Category per Grade Level

| Grade Level | Category |
|-------------|-------------------|
| 3 | Water Patrol |
| 4 | Water Patrol |
| 5 | Power Patrol |
| 6 | Power Patrol |
| 7 | Electro SciDama |
| 8 | Dama Sci-Notation |
| 9 | THI Sci-Notation |
| 10 | Thermo SciDama |

c. Rules

Refer to DECS Memorandum 363 s. 1999

D. Research Innovation and Scientific Exploration (RISE) Division Expo

- a. The event is open to JHS and SHS students from public and private schools
- b. Participants to the Division Level are the Top 3 winners in the District RISE Expo in the ff categories:

| Key Stage | Individual | Team (3 members) |
|-----------|----------------|------------------|
| JHS | District Top 3 | District Top 3 |
| SHS | District Top 3 | District Top 3 |



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c. Description and Mechanics (refer to RM 358 s 2024)

2024 RISE Regional Expo
(Research, Innovation, Scientific Exploration)

| | | | | | | | |
|--|--|---|-----|--|-----|--------------------------|-----|
| Component Area | Science, Mathematics, English, Technology, Culture & Arts | | | | | | |
| Key Stage | Key stage 3 and 4 | | | | | | |
| Event Title | RISE Regional Tournament | | | | | | |
| No. of participants | JHS = 1 (individual), 3 (Team) = 4 SHS = 1 (individual), 3 (Team) = 4 | | | | | | |
| Performance Standard | Obtain scientific and technological information from varied sources and utilize the information gathered to innovate and improve the quality of existing local products and/or create products useful to the community utilizing the scientific process in solving problems. | | | | | | |
| 21 st Century Skills | Critical thinking, Communication skills, Creativity, Problem solving, Collaboration, Information literacy, Technology and Engineering skills and digital literacy. | | | | | | |
| Description | RISE Expo is a new event under IPED that combine science and culture to develop the 21 st century skills of learners at the same time enhances the indigenous products of the community. It allows learners to apply science, mathematics, and communication skills as well as their ICT skills in improving local products. While they appreciate the culture of the community, they will investigate ways on making it more attractive and appropriate to the taste and needs of the new generation. | | | | | | |
| Criteria for Judging | <table border="1"><tr><td>1. Originality and Creativity This criterion assesses the uniqueness and innovation of the project. It looks at how the research addresses a problem in a novel way.</td><td>25%</td></tr><tr><td>2. Community Connection & Impact This criterion evaluates how the innovation research benefits the community or society. It assesses the project's potential to make a positive impact.</td><td>30%</td></tr><tr><td>3. Market Attractiveness</td><td>15%</td></tr></table> | 1. Originality and Creativity This criterion assesses the uniqueness and innovation of the project. It looks at how the research addresses a problem in a novel way. | 25% | 2. Community Connection & Impact This criterion evaluates how the innovation research benefits the community or society. It assesses the project's potential to make a positive impact. | 30% | 3. Market Attractiveness | 15% |
| 1. Originality and Creativity This criterion assesses the uniqueness and innovation of the project. It looks at how the research addresses a problem in a novel way. | 25% | | | | | | |
| 2. Community Connection & Impact This criterion evaluates how the innovation research benefits the community or society. It assesses the project's potential to make a positive impact. | 30% | | | | | | |
| 3. Market Attractiveness | 15% | | | | | | |



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| | | |
|--|--|------|
| | <p>This criterion examines the commercial viability of the innovation. It considers the potential market demand, scalability, and sustainability of the project.</p> | |
| | <p>4. Functionality This criterion evaluates the practical functionality and performance of the innovation. It assesses how well the innovation functions and whether it meets the intended objectives. Researchers should demonstrate evidence of successful testing, validation, or prototypes to support the claims of the innovation's effectiveness</p> | 20% |
| | <p>5. Product presentation This criterion looks at how effectively the innovation and research are presented to the audience. It assesses the clarity, coherence, and visual appeal of the poster display and any supplementary materials. Additionally, researchers' ability to communicate the innovation's key features, benefits, and impact in a compelling and engaging manner is considered. The criterion also considers how well the researchers answer questions.</p> | 10% |
| | <p>Total</p> <ul style="list-style-type: none"><i>The criteria were adopted from the National Science and Technology Handbook of the Department of Education.</i> | 100% |



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- d. The innovation paper format is adapted from the Science and Technology Fair Guidebook of the Department of Education (2023):

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APPENDIX 5:
Innovation Expo Paper Format

Title Page and Table of Contents: The title page and table of contents allow the reader to follow the organization of the paper quickly.

Introduction:

1. Features and Specifications – This describes the details of your invention.
2. Market Trends and Opportunities – This part of the report must include three items: what inspired you to develop this invention, an explanation of what problem your invention will solve, and provide supporting details that your invention does not exist yet. Explain what products are already on the market that are somewhat like your invention and describe how yours differs.

Materials and Methods: Describe in detail how you made your invention. Explain what materials were used and how you put them together to make your invention. Your report should be detailed enough so that someone would be able to repeat the steps and make your invention. Directions on how to use the invention are also necessary here. You must include a detailed drawing(s) of your invention.

Results and Discussion: This is the essence of your paper. Compare your results with theoretical values, published data, literature and related studies, commonly held beliefs, and/or expected results. Include a discussion of possible errors, statistics, graphs, pages with your raw collected data, etc. 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?

Conclusions: This discusses the potential applications, possible customer benefits, and the impact of the innovation in solving problems and issues of today and tomorrow.

Acknowledgements: This part gives credit to those who have assisted you, including individuals, businesses, and educational or research institutions.

References/Bibliography: Your reference list should be written based on the APA (American Psychological Association) style formatting and citation.

APPENDIX 6:
Innovation Expo Display Board Format

| Title | Content |
|------------------------------------|--|
| Introduction | Provide a brief introduction to your innovation, highlighting its purpose and significance. |
| Problem Statement | Clearly state the problem or challenge that your innovation addresses. |
| Solution/Innovation | Describe your innovative solution concisely and prominently on the poster. |
| Features and Specifications | Present the key features and specifications of your innovation using bullet points or visuals. |
| Materials and Methods | Use simple visuals or graphics to illustrate the materials used and the steps in the development process. |
| Results and Discussion | Showcase the results of your innovation and compare them to expectations or existing solutions. Use graphic charts, or infographics to present data effectively. |
| Benefits | Emphasize the potential benefits of your innovation to the target users or the community. |
| Visuals | Include images, diagrams, and photographs to enhance the visual appeal and understanding of your innovation. |
| Conclusions | Summarize the main conclusions and the broader implications of your innovation. |
| Future Development | Discuss potential future developments or applications of your innovation. |
| Developers' Name | Indicate the name(s) of the proposer/s (Do not indicate the name of the school/region). |

Specifications: Each Display Board must have a 35" x 48" dimensions (portrait style)

DEPARTMENT OF EDUCATION

- e. Submission of innovation expo manuscript (3 copies) will be on October 14, 2024. Folder color will be as follows:

| | JHS | SHS |
|------------|-------|-------|
| Individual | green | red |
| Team | blue | brown |

- f. Display, presentation and judging will be on October 19, 2024.
 g. The First and Second Place winners will participate in the **Research Innovation and Scientific Exploration (RISE) Regional Expo.**