



Republic of the Philippines  
**Department of Education**  
Cordillera Administrative Region  
**SCHOOLS DIVISION OF BAGUIO CITY**



October 30, 2024

DIVISION MEMORANDUM  
No. **624-2024**

**TUKLAS RESEARCH PROJECT FAIR QUALIFIERS  
& TWGs FOR THE 2024 DIVISION SCIENCE FESTIVAL**

To: All Chief Education Supervisors  
Education Program Supervisors  
Public Schools District Supervisors  
Public and Private Secondary School Heads  
Public and Private Elementary School Heads  
Teachers, SDO Personnel  
Others Concerned

1. This is to announce the qualifiers for the Tuklas Research Project Fair in the **2024 Division Science Festival** with the theme: **“Towards a Shared Vision: Exploring the Future for a Better Tomorrow”** on November 9, 2024 at the Baguio City High School gym from 8:00AM to 5:00PM.
2. All events (Tuklas Research Project Fair, Quiz Bee, SciDama, and RISE Fair) will be conducted on the said date. Kindly refer to the enclosures for the list of qualifiers, general procedures /contest venues, and technical working group.
3. There will be a coordination meeting of all committee chairpersons and co-chairpersons on November 5, 2024, 2:45 PM to 4:00PM, at the SDO Training Hall.
4. Coaches and TWGs shall be entitled to one (1) day service credit as per DO 53, s. 2003 and CSC DBM Joint Circular No. 2, s. 2004.
5. For inquiries, please feel free to contact our Education Program Supervisor, Ms. Virginia C. Alindayo, at 0999-329-3403.
6. Immediate and wide dissemination of this Memorandum is desired.

**SORAYA T. FACULO, PhD CESO VI**  
Schools Division Superintendent

For the Office of the Schools Division Superintendent:

  
**ARMY VICTORIA A. FIANGAAN**  
Education Program Supervisor





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**Enclosure 1. List of Qualifiers**

**A. Team Category**

Life Science-Team					
	Research Title	Proponents	Coach	School	Code
1	Antimicrobial Activity of Dragon Fruit ( <i>Hylocerus lindatus</i> ) Stem Extract Against <i>Staphylococcus aureus</i>	Stephanie Lei C. Ticag Efren Mae M Padaoan Santinah S. Velasco	Lissa B. Roxas	Baguio City National Science High School	LS-T-01
2	Antibacterial Activity of Bolivian Sunset Leaves ( <i>Seemania sylvatica</i> ) Against <i>Staphylococcus aureus</i>	Ethan Azriel S. Guerrero Eagann Joyse M. Romero Carl Norville D. Torres	Lissa B. Roxas	Baguio City National Science High School	LS-T-02
3	Assessment of White Rice ( <i>Coryza sativa</i> ) Bran Extract as an Antimicrobial Agent Against <i>E. coli</i>	Henna Dalen A. Celino Marc Dylan D. Amongo Kate Angela V. Penullar	Joey B. Lartec	Baguio City National High School	LS-T-03
Physical Science-Team					
	Research Title	Proponents	Coach	School	Code
1	Carbon Dated TiO <sub>2</sub> Nanoparticles on Activated Carbon Anode for Voltage Output Enhancement in Soil Microbial Fuel	Jared Jairus A. Licdan Antonio Erich Von R. Naños Robin Nev D. Abrera	Ariel N. Millare	Baguio City National High School	PS-T-01
2	Bioethanol Production and Assessment of <i>Sechium edule</i> and <i>Brassica oleracea</i> var capitata	Johnn Louie V. Am-amlan Gavin Liam A. Corpuz	Charry Mar G. Mahusay	Baguio City National Science High School	PS-T-02





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3	Bio-adsorptive Ability of Malunggay ( <i>Moringa oleifera</i> ) Leaves in River Watre Using pH Indicator and Turbidity Testing	Charmaine Faye R. Carolino Bezaleel Ivan J. Apelado Kurt Ivan R. Castro	Charry Mar G. Mahusay	Baguio City National Science High School	PS-T-03
4	Assessment of Water Quality in Selected Watershed Stations of Camp 8, Baguio City	Marielle D. Lamadrid Ezra B. Peckley Lawrence Allen B. Baracas	Efren Matthew C. De Peralta	Baguio City National High School	PS-T-04
5	Organic Hues: Examining Cotton Fabric Color Fastness with Beta Vukgaris Dye Through Wash Cycles	Nicole Martinez Carlos Miguel S. Espiritu Maryan Zaira N. Cendaña	Efren Matthew C. Dep Peralta	Baguio City National High School (Senior High School)	PS-T-05
6	Phytochemical and Toxicity Analysis of Saba Central Soft Core ( <i>Musa acuminata x balbisiana</i> ) Chips	Kirt Hendrick B. Balbino Kenan M. Tarcuan Fredelyn G. Ped-eng	Johnny P. Buasen	Santo Tomas National High School	PS-T-06
7	Low Density Polyethylene Plastic Decomposition by Mealworms( <i>Tenebrio molitor</i> )	Kirsten Anika S. So Theona Amira M. Subala	Johnson M. Aquicio	Small World Christian School Foundation	PS-T-07
<b>Robotics and Intelligent Machine-Team</b>					
	<b>Research Title</b>	<b>Proponents</b>	<b>Coach</b>	<b>School</b>	<b>Code</b>
1	KABUNYAN: Kompact Automated Botanical Ground Nutrient Yield Analyzer and Nitrate Optimizer Robot	Jovanie T. Soypaan Razi Jade S. Reyes Kriziah Khae B. Raquipiso	Jerry Manogan	Guisad Valley National High School	RIM-T-01
2	Enhancing Sustainable Farming: An Automated Soil Moisture Sensing Device for Precision Irrigation	Latrell M. Kedse Arriel Maxene E. Pachejo Kriszel Hera P. Queñado	Charry Mar G. Mahusay	Baguio City National Science High School	RIM-T-02





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3	Portable Light Tracking Solar Phone Charger	Hannah Lorraine P. Sagmayao Dominique Reign P. Tamsi	Lissa B. Roxas	Baguio City National Science High School	RIM-T-03
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**Mathematics and Computational Science-Team**

	Research Title	Proponents	Coach	School	Code
1	Baguio Breakthrough: Optimizing the Shortest Routes to Tourist Destinations in the City of Pines	Hayden Bon Dulnuan Cynara Aliyah Llano Kheseeya Liwan	Jessica A. Yeban	Rizal National High School	MCS-T-01
2	Predicting Student's Travel Time from Home to School: A Mathematical Model	Alvin B. Barba Angelica Mae M. Marcos Rashied Clint P. Payangdo	Joshua Nico V. Bati	Guisad Valley NHS	MCS-T-02

**Innovation-Team**

	Research Title	Proponents	Coach	School	Code
1	Eco-Friendly Crop Helper and Observer for Enhanced Natural Pest Control and Efficiency (ECHO FENCE)	Diane Kyla V. Olonan Crizzly Dane Pepito Shirley Marie G. Permison	Jerry L. Manogan	Guisad Valley National High School	I-T-01
2	Seasonal Dynamic of Wind and Water Optimizing Renewable Energy Harvesting for Sustainable Electricity Generation	Jasmin C. Pingi Cyrus Jay II C. Necesito Aiguen Doryn A. Bowaken	Viliu P. Buya	Baguio City National High School (Senior High School)	I-T-02





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3	Optimization of Piezoelectric Shoes (Padyak-kulisap) as Energy Source for Emergency Lighting	Bryam Jore P. Disu Rey P. Ferrer Zed Aldrich G. Parel	Viliu P. Buya	Baguio City National High School (Senior High School)	I-T-03
4	Navigating M.I.N.D.S: Exploring Grade 7 and 10 BCNSHS Students' Level of Satisfaction and Acceptability on the Application	Avril De Aro Jezreel Onos Jana Baoid	Florence P. Truntich Odicar Joice F. Chavez	Baguio City National Science High School	I-T-04
5	Papyri Application Innovation: Assessing the Level of Satisfaction and Acceptability Among Grade 7-8 Students of Baguio City National Science High School	Jaixha Gubatan Lanz Quintinita Axl Rumbaoa	Florence P. Truntich Odicar Joice F. Chavez	Baguio City National Science High School	I-T-05

**B. Individual Category**

Life Science-Individual					
	Research Title	Proponents	Coaches	School	Code
1	Antibacterial Activity of Philippine Pomelo ( <i>Catius maxima</i> ) Peel Crude Extract Against <i>Staphylococcus aureus</i>	Ycremel Lee P. Losnong	Lissa B. Roxas	Baguio City National Science High School	LS-I-01
2	Peeling Back the Layers: Exploring the Antibacterial Potential of <i>Musa acuminata x balbisiana</i> (Saba) Peel Extract Against <i>Staphylococcus aureus</i> and <i>Escherechia coli</i>	Jermaigne C. Rafayle	Efren Matthew C. De Peralta	Baguio City National High School (Senior High School)	LS-I-02
3	Allelopathic Effects and NPK (Nitrogen, Phosphorus, Potassium) Analysis of Benguet Lichen ( <i>Parmelia saxatilis</i> )	Gherwin Cruzado	Johnny P. Buasen	Santo Tomas National High School	LS-I-03





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Physical Science-Individual					
	Research Title	Proponents	Coach	School	Code
1	Chinese Pechay ( <i>Brassicarapa rapa</i> ) Stalk as an Effective Biosorbent for Methylene Blue Solution	Efren Brandon L. Gonzales	Michael John P. Deatras	UB Science High School	PS-I-01
2	Comparative Analysis of the Water Retention Capacity Guar Gum and Xanthan Gum-based Hydrogels	Kim Chelsey C. Paningbatan	Joey B. Lartec	Baguio City National High School	PS-I-02
Robotics and Intelligent Machine-Individual					
	Research Title	Proponents	Coach	School	Code
1	UV-Based Ultraviolet BOT for Bio-Control Operations (UB-UBBO): A Pest Control BOT in Agricultural Field	Ian Kervy M. Manuel	Jerry Manogan	Guisad valley National High School	RIM-I-01
2	Airpal: Cloud-powered Remote-Controlled Robot for Seamless Remote Interactions	Jermaine G. Villarico	Mildred K. Pa-ac	Baguio City National Science High School	RIM-I-02
Mathematics and Computational Science-Individual					
	Research Title	Proponents	Coach	School	Code
1	Optimizing Crop Production Efficiency Through Percent of Reduction in Production: A Mathematical Model	Jahzeel Luz P. Eustaquio	Jerry L. Manogan	Guisad Valley National High School	MCS-I-01





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<b>Innovation-Individual</b>					
	<b>Research Title</b>	<b>Proponents</b>	<b>Coach</b>	<b>School</b>	<b>Code</b>
1	Technologically Harmonized Integrated Robot Detector for Digital Analysis Yield, Processing pH and Soil Evaluation (THIRD DAY PHASE)	QueenCess P. Mercado	Jerry L. Manogan	Guisad Valley National High School	I-I-01
2	Zero Waste Processing Plant Miniature: Conversion of Non-biodegradable to Biodegradable Materials with the Use of Patented Formula	Hyacinth Nia Tess E. Alacdis	Ariel Millare	Baguio City National Science High School	I-I-02





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**Enclosure 2. General Procedures and Guidelines**

**A. Tuklas Research Project Fair**

**a. Reference**

**DepEd (2023).** *School, Division, Regional, and National Science and Technology Fair Guidebook*. First Edition.

**b. General Procedure**

1. Setting Up of Display Boards
  - Date and Time: Nov. 8, 2024, from 4:00 PM to 5:00 PM, and Nov. 9, 2024, from 7:00 AM to 7:45 AM at the BCHS gym.
  - Display Board Dimensions: The height should range between 76.2 cm and 250 cm, and the width between 50.8 cm and 100 cm.
2. Presentation
  - Each team or proponent will be given a maximum of 5 minutes to present their research, followed by a question-and-answer session.

**B. RISE Fair**

**a. Due Date**

- Project RISE manuscripts (3 copies) will be submitted on October 30, 2024.

**b. Setting Up of Display Boards**

- Date and Time: Nov. 8, 2024, from 4:00 PM to 5:00 PM, and Nov. 9, 2024, from 7:00 AM to 7:45 AM. At the BCHS gym.
- Display Board Dimensions: The height should range between 76.2 cm and 250 cm, and the width between 50.8 cm and 100 cm.
- Each team or proponent will be given a maximum of 5 minutes to present their research, followed by a question-and-answer session.

**C. SciDAMA**

- a. The SciDAMA competition for secondary level will be held at *Baguio City High School*, while the elementary level competition will take place at *Mabini Elementary School*.
- b. Players are required to bring their own boards and chips for the competition
- c. Competition starts at 8:00 AM.

**D. Quiz Bee**

- a. Venue will be at Baguio City High School





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**Enclosure 3. Technical Working Group**

**Technical Working Group**

Event/ Committee	*Chairperson/ -Co-Chairperson/ .members	Terms of Reference	Total No of Members	Members
Research Project Fair	<b>*Marilyn Bugatti</b>	1. Manage the conduct of the event: -registration of participants -preparation of display board label -setting up of display boards -research congress/presentation -ranking of scores	7	Christopher Coral Lany Lалан Ma. Angelica H. Mangili Wanda Casio Lilia G. Mayapit Andreline Familiaran
RISE	<b>*Brenda P. Contada</b> -Geraldine Lapiguera	1. Manage the conduct of the event : -registration of participants -setting up of display boards - congress/presentation -ranking of scores	4	Victorie Pulao Michael Edrian Ferrer
Quiz Bee	<b>*Jeany Dupo</b> -Rufina Cads(SHS) -Dindo Sergio(JHS) -Angelbert Pednga(Elem)	1. Manage the conduct of the event in all grade levels: -preparation of needed materials -Register participants -Assign TWG (quizmaster, timer, & scorer) per grade level -prepare related report	34	to be identified (from the coaches)
SciDama	Secondary: <b>*Darwin Paas</b> -Pepito Dacaimat Elementary: <b>*Chadrey Madume</b> -Emma Wakat	1. Manage the conduct of the event in all grade levels: -prepare needed materials -Register participants -Assign TWG (arbiter, timer, & scorer) per grade level -prepare related report	28	to be identified (from the coaches)
Physical Arrangement and Food	<b>*Marissa Wayan</b> -Geraldine B. Banos  Greg Parrocha(Elem-AMES) Erham Haramain(Elem-AMES)	1. Prepare the contest venues and auditorium or gym (stage, sound system, chair, projector) 2. Distribute meals and snacks/token of the TWGs.	9	Evelyn R. Nocelo Allan Litaoen BCAST Officers





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Certificates and Program	*Salome C. Fangkingan -Jofelyn Nicolas	1. In-charge of invitation, program and certificates 2. Usher judges and guest	7	Geraldine Domagas Dale Andre M. Dicang Mark Adrian J. Arenas Ginaluz M. Panergo Anthony T. Bangcado
Registration	*Joan Andayan	1. Register all participants: -learners per event -coaches per event -Judges -TWGs 2. Facilitate accomplishment of DTRs for service credit	3	Melanie E. Abaggue Bryan Bosaing