



Republic of the Philippines  
**Department of Education**  
REGION III  
**SCHOOLS DIVISION OF PAMPANGA**

February 20, 2024

**DIVISION MEMORANDUM**

No. **126**, s. 2024

**EMPOWERING SCIENCE TEACHERS: A DIVISION TRAINING WORKSHOP ON  
HARNESSING ROBOTICS KITS FOR ENHANCED STEM LEARNING**

To: Assistant Schools Division Superintendents  
Chief Education Supervisors  
Education Program Supervisors  
Public Schools District Supervisors  
Public School Secondary Principals/School Heads  
Science Cluster Chairs  
Special Science Curriculum (SSC) Coordinators  
All Others Concerned

1. This Office announces the conduct of a *Division Training Workshop on Harnessing Robotics Kits for Enhanced STEM Learning* on March 8, 2024, from 8:00 AM to 4:00 PM at the Teachers' Training Center, Schools Division Office of Pampanga.
2. The training workshop aims to:
  - 2.1 provide science teachers with comprehensive training on the fundamentals of robotics, including basic principles, components, and mechanics;
  - 2.2 equip science teachers with practical skills in assembling, programming, and troubleshooting robotics kits, enabling them to facilitate hands-on learning experiences for their students;
  - 2.3 explore innovative teaching methodologies and strategies for integrating robotics activities into the science curriculum, aligning with learning objectives and standards; and
  - 2.4 inspire student interest in STEM subjects and cultivate essential 21st-century skills such as critical thinking, problem-solving, and computational thinking through engaging in robotics activities.
3. The participants of the above-mentioned training are the SSC teachers. Likewise, the participants are requested to bring their laptop, smart phone, robotics kits and 4 pcs AA batteries for the robot.
4. Enclosure No. 1 for the List of Participants and Technical Working Group and Enclosure No. 2 for the Training Matrix are attached.
5. Transportation and other incidental expenses of the participants shall be charged from MOOE or other local school funds subject to the usual accounting and auditing rules and procedures.
6. This Memorandum serves as the travel order of the participants.



**Address:** High School Blvd., Brgy. Lourdes, City of San Fernando (P)  
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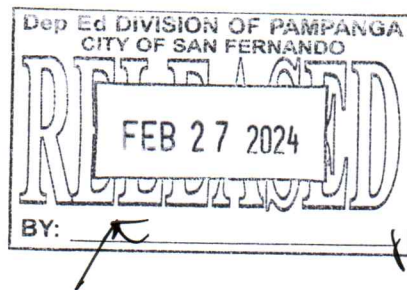
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7. Wide dissemination of this Memorandum to all concerned is earnestly desired.

**ROMEO M. ALIP, PhD, CESO V**  
Schools Division Superintendent

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Enclosure No.1 to Division Memorandum No. \_\_\_\_\_, s. 2024

<b>List of Participants</b>	
<b>Name</b>	<b>School</b>
Marianne E. Vilaga	Don Antonio Lee Chi Uan Integrated School
Lee Andrew O. Manuel	Don Antonio Lee Chi Uan Integrated School
Angelica T. Ablaza	Don Antonio Lee Chi Uan Integrated School
Sherwin L. Cruz	San Vicente National High School
Mary Grace E. Cruz	San Vicente National High School
Nikko M. Nabung	San Vicente National High School
Gener P Magcalas	Lubao National High School
Donna Marie B. Bautista	Lubao National High School
Angela S. Pinlac	Lubao National High School
B-Jay G. Samson	Rodolfo V. Feliciano Memorial HS
Camile Grace G. Pangan	Rodolfo V. Feliciano Memorial HS
Criselle May P. Bulaun	Rodolfo V. Feliciano Memorial HS
Antuane Alfaro	San Matias National High School
Robert P. Alfaro	San Matias National High School
Ricardo C. Pincaro	San Matias National High School
Rolan B. Jimenez	Remedios National High School
Nica C. Lampa	Remedios National High School
Daisy R. Gindap	Remedios National High School
Aldrin Santos	Justino Sevilla High School
Aileen P. Sison	Justino Sevilla High School
Kristel Maryjoy Dumlaog	Justino Sevilla High School
Layrell S. Alicante	Pulung Santol National High School
Lawrenze Q. David	Pulung Santol National High School
Jessica C. Datu	Pulung Santol National High School
Zaldy A. Quijano Jr	San Pablo 2nd National High School
Joanna Marry R. Buduan	San Pablo 2nd National High School
Laurence S. Pangan	San Pablo 2nd National High School
Barry D. Guinto	Gutad National High School
Lorwina D. Turla	Gutad National High School
Jean Gladys Y. Vitug	Gutad National High School
Zairah Mae C. Ibañez	Potrero National High School
Rosita C. Cayanán	Potrero National High School
Paulyn R. Espino	Potrero National High School
Alvin Jay S. Torio	Porac Model Community High School



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Chrisper S. Escoto	Porac Model Community High School
Robert M. Saculles	Porac Model Community High School
Judy Ann P. Cruz	Becuran National High School
Ma. Generosa T. Agustin	Becuran National High School
Richard C. Gumin	Becuran National High School
<b>Technical Working Group</b>	
Carlo Vincent Jordan	Arayat National Hs
Leslie Anne Nicdao -Verdeflor	San Vicente National High School
Bay D. De Jesus	Sto. Rosario National High School - Minalin
Raymond S. Manalastas, PhD	Salapungan National High School
Neslaine P. De Guzman	San Juan High School
Alejandro M. Cortez, Phd	Masantol High School
Catherine P. Pamandanan	Porac Model Community High School



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Enclosure No.2 to Division Memorandum No. \_\_\_\_\_, s. 2024

**EMPOWERING SCIENCE TEACHERS: A DIVISION TRAINING WORKSHOP  
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 March 8, 2024**

**TRAINING MATRIX**

## Teachers' Training for Robotics – SDO Pampanga

**Program Content Focus**

**Content Matrix**

Topics/ Time Allotment per topic/ Resource Person	Expected Learning Outcomes	Activities to Achieve Learning Outcomes	Assessment Strategies /Tools	Outputs
<b>1 Day</b>				
<b>09:00 -09:30 Opening Program</b>				
<b>09:30 -10:30 AM</b> <b>Introduction to Robotics</b> <b>Trainer:</b> <b>Niel Vincent Banaticla</b>  <b>Topics:</b> a. Robotics b. Basic Parts of a Robot c. Input and Output Devices of a Robot d. Functions of Every Part of a Robot	Assemble and test a Robot	Lecture / workshop	<b>Activity 1</b> Assembling and testing a robot	Assembled robot
<b>10:30 AM – 12:00 PM Introduction to Robotics Programming</b>				
<b>Trainer:</b> <b>Niel Vincent Banaticla</b>				
<b>Topics:</b> a. Manual Control of Robots b. PC-based Programming software c. Basics of Robotics Programming d. Lights, Sound, and Motion of a Robot	1. Control a robot remotely using a mobile device 2. Execute basic codes of a robot	Lecture / Workshop/ demonstration of output	<b>Activity 2</b> Executing and controlling a robot remotely using a mobile device	Program execution of <ul style="list-style-type: none"> <li>• <b>Mobile App Controlled Robot</b></li> <li>• <b>sing-and-dance robot</b></li> </ul>



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12:00 PM – 01:00 PM  
 Health Break

01:00 PM – 04:00 PM  
 Introduction to Robotics Programming

Trainer:  
 Niel Vincent Banaticla

<p>12:00 PM – 01:00 PM Health Break</p>				
<p>01:00 PM – 04:00 PM Introduction to Robotics Programming</p>				
<p>Trainer: Niel Vincent Banaticla</p>				
<b>Topics</b> a. Line -Following Robot b. Obstacle Avoidance Robot	1. Execute commands for a line- following robot 2. Execute commands for an obstacle avoidance robot	Lecture / Workshop/ demonstration of output	<b>Activity 2</b> Executing commands for a. line following robot b. obstacle avoidance robot	Program execution for <b>a. line following robot</b> <b>b. obstacle avoidance robot</b>
<p>4:00 PM – 4:30 PM Closing Ceremony</p>				

**Materials:** Sound system, LCD projector/TV, tables

- Each participant must bring a **laptop and a smart phone**
- **Software Needed: Follow the instruction attached in this training matrix**
- Each participant must have **4 pcs of AA batteries for the robot**



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