Republic of the Philippines
Department of Education
Region V– Bicol
SCHOOLS DIVISION OFFICE OF LIGAO CITY

Office of the Schools Division Superintendent

30626168 March 5, 2026

DIVISION MEMORANDUM
No. 0117 s. 2025

DIVISION ORIENTATION-TRAINING ON ROBOTICS KITS FOR SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM) ADVANCEMENT

To: Asst. Schools Division Superintendent
CID and SGOD Chief Education Supervisors
Public Elementary and Secondary School Heads
All Others Concerned

1. Aligned with DO No. 32 s. 2011 on professional development and DO No. 21 s. 2019, which strengthen STEM education under the K to 12 curriculum, this Office, through the Curriculum Implementation Division (CID) will conduct the **Division Orientation-Training on Robotics Kits for STEM Advancement** on **March 10 – 11, 2026**, 8:00 AM – 5:00 PM at **Bicol Regional Science High School (BRSHS).**

2. The activity aims to:
   a. equip the teachers and students with fundamental knowledge and hands-on experience in assembling and programming robotics kits to build confidence in using robotics tools in the classroom;
   b. enhance the competencies of teachers and students in designing robotics-based projects, problem-solving and creative and innovative thinking through collaborative experiential learning;
   c. orient the school leaders, teachers and students with proper utilization, maintenance, storage, safekeeping and simple troubleshooting of robotics kits.

3. The participants in this activity are select STEM Teachers and students involved in Robotics and research of Ligao East Central School, Bicol Regional Science High School, Deogracias P. Princesa Memorial High School, Ligao City National Technical and Vocational High School, Ligao National High School and Paulba National High School. The participants are advised to bring laptop and extension cord.

3. The school heads are advised to assign relieving teachers to maximize time-on-task stipulated in DO No. 9, s. 2025 entitled Instituting Measures to Increase Engaged Time-on-Task and Ensuring Compliance Therewith.

4. The Robotics Kits were purchased by the City Government of Ligao charged to Special Education Fund (SEF). These will be distributed to the identified schools during the launching and turn-over of the project on March 11, 2026, 3:00 PM at BRSHS. The Public Schools District Supervisors and school heads of the recipient schools are requested to attend the launching and turn-over ceremony.

5. The lunch for two days (2) of the participants, technical working group (TWG) and trainers shall be taken care of by FELTA, Inc. Snacks (morning and afternoon) of the participants and TWC and transportation expenses shall be charged to respective school/division MOOE/local funds subject to the usual accounting and auditing rules and regulations.

6. Enclosed to this Memorandum are the following:
   a. Allocation of Participants per School
   b. Division Executive Committee and Technical Working Group
   c. Training Matrix for Spike Prime, Artificial Intelligence STEAM and MATRIX Robotics

7. For information, guidance and compliance of all concerned.

NYMPHA D. GUEMO
Schools Division Superintendent

Enclosure 1 of Division Memorandum ____ s. 2025

Division Orientation-Training on Robotics Kits for STEM Advancement

Allocation of Participants

School/Office	Day 1 March 10, 2026 only SPIKE PRIME ROBOTICS		Day 2: March 11, 2026 only ARTIFICIAL INTELLIGENCE STEAM ROBOTICS		Day 2: March 11, 2026 only MATRIX ROBOTICS	
	Teachers	Students	Teachers	Students	Teachers	Students
Bicol Regional Science HS	2	6	1	3	1	3
Ligao National HS	2	6	1	3	1	3
DPPMHS	1	3	1	3	0	0
Paulba National HS	1	3	1	3	0	0
LCNTVHS	1	3	1	3	0	0
Ligao East Central School	1	3	0	0	0	0
Sub- Total	8	24	5	15	2	6
TWG	3		4			
Trainers (FELTA)	4		4			
Total	39		36			

Enclosure 2 of Division Memorandum No. _____ s. 2025

EXECUTIVE COMMITTEE

Nympha D. Guemo - Schools Division Superintendent
Melchizedek C. Tongco – Asst. Schools Division Superintendent
Tita V. Agir – CID Chief
Ernie M. Baranquel – SGOD Chief
Jocelyn P. Navera – Education Program Supervisor, Science
Jojim B. Cordova – Education Program Supervisor, Mathematics
Evangeline B. Bobis – Division Supply Officer

TECHNICAL WORKING GROUP

Rene Prena – Principal, BRSHS
Iris Paz – Principal, DPPMHS
Marjorie Plazo – Principal, LCNTVHS
Kenn Clinton D. Perez – OIC-IT Officer

Committees:
Registration/Attendance/Certificates – Chris John Rosamiran
Program/Invitation – Jiji Erick Matias
Preparation of training hall and venue for launching and turn-ver/Sounds/Decoration/Tables/Chairs – Host School

DepEd Ligao
Robotics Teacher's Training
March 10 , 2026

Training Matrix for Spike Prime

There are a few possibilities:

1. **Skills training matrix** — A table showing what skills (e.g., programming, building, sensors, motors, data logging) are taught at each level (beginner/intermediate/advanced).
2. **Curriculum matrix** — A plan linking lessons or modules to learning outcomes (e.g., LEGO Education SPIKE Prime curriculum alignment).
3. **Team training matrix** — A chart showing which students or team members are trained in which SPIKE Prime functions (useful for robotics clubs or PRO and FLL teams robotics local and international competition).

SPIKE Prime Training Matrix that combines all three approaches:

Skill Area	Beginner Level	Intermediate Level	Advanced Level
Building & Design	Identify and use basic LEGO Technic parts; assemble simple models	Use gears, pulleys, and linkages to build functional mechanisms	Design efficient, modular robots for specific challenges
Programming (Blocks)	Use basic movement and sensor blocks (motor control, wait, loops)	Use variables, conditionals, and My Blocks for custom functions	Implement proportional control, nested loops, and data-driven logic
Sensors	Understand and use Color and Distance sensors	Combine multiple sensors for decision-making	Calibrate and optimize sensor data; integrate IMU (gyro) for precision
Data & Control	Record basic data (distance, color)	Plot data and interpret sensor feedback	Implement feedback loops and real-time decision systems
Team Collaboration	Work in pairs to follow guided builds	Share roles and debug programs collaboratively	Lead design reviews, manage version control, and mentor peers
Competition/Projects	Complete guided missions	Design original solutions with performance goals	Optimize robot design and code under time constraints

Things to prepare:
Basic Microphone, bring your own Laptop and extension cord
Food: Lunch c/o Felta
Trainors: John Paul Obina and John Ulyssess Oguan

DepEd Ligao
Robotics Teacher's Training
March 11, 2026

ARTIFICIAL INTELLIGENCE STEAM ROBOTICS TRAINING MATRIX

Level	Focus Area	Learning Objectives	Key Skills	Tools / Platforms	Projects / Outcomes
Level 1: Foundation (Beginners)	Introduction to STEAM & Robotics	- Understand basic STEAM principles - Learn how robots sense, think, and act - Introduction to coding logic	- Logical thinking - Basic programming - Team collaboration	Scratch	Build a simple moving robot that responds to light/sound
Level 2: (Early Learners)	Coding + Robotics + Sensors	- Apply sensors and actuators - Understand control loops - Explore simple AI concepts (pattern recognition, object detection)	- Sensor calibration - Flow control - Basic AI vocabulary	Arduino, micro:bit,	Line-following robot, obstacle avoidance robot
Level 3: Intermediate (High School)	Robotics + Applied AI	- Introduce Machine Learning fundamentals - Use data to make robot decisions - Apply STEAM design thinking	- ML model training - Data analysis - Mechanical design integration	Tensor Flow, Teachable Machine, Raspberry Pi, ROS (Beginner), Fusion 360	Smart home assistant bot, AI-driven sorting system
Level 4: Advanced (College / Technical Level)	AI Systems & Automation	- Understand AI algorithms (vision, NLP, path planning) - Integrate robotics and IoT - Develop autonomous systems	- Deep learning - Cloud AI integration - ROS programming	AIsteam	Autonomous vehicle simulation, AI surveillance
Level 5: Professional / Research	Applied AI + Robotics Innovation	- Develop and deploy full AI-driven robotic systems - Conduct experiments and research in AI ethics, safety, and optimization	- System architecture - Research methodology - AI ethics & governance	Unity Robotics Hub, Gazebo	Publish research, create prototypes for industry or social good

Integration of STEAM Disciplines

Discipline	Integration Example in AI Robotics
Science	Physics of motion, energy, and sensors
Technology	Coding, automation, data systems
Engineering	Designing robot structures and control systems
Arts	Design thinking, aesthetics
Mathematics	Algorithms, statistics, probability for AI models

Things to prepare:
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Food: Lunch c/o Felta
Trainors: John Paul Obina and John Ulyssess Oguan

March 11, 2026
DEPED - LIGAO

Training Matrix for MATRIX Robotics

Level	Target Audience	Prerequisites	Core Training Modules / Topics	Certification / Outcome
Beginner / Associate	Students (middle school / high school), new educators/trainers	None required	• Introduction & Assembly Basics (hardware) WRO Learn+3MATRIX Robotics+3MATRIX Robotics+3 • Electronics & Basic Sensors • Basic Programming (block-based) • Building simple robots / projects • Sharing a project in the MATRIX community (social media etc) MATRIX Robotics+1	Official Associate Certificate, entry to MATRIX Community, priority access to resources MATRIX Robotics
Educator / Coach (Intermediate)	Educators, trainers, coaches who already have experience with MATRIX tools	Completion of Beginner level, one workshop/webinar attendance	• Workshop/Training sessions: lead one beginner-friendly training or demo session MATRIX Robotics • Build a project using MATRIX tools and share publicly • Use MATRIX in educational/competitive context (e.g., competition coaching)	Professional Certification: recognition as Coach/Mentor, featured profile/project, access to product testing & training MATRIX Robotics
Professional / Advanced	Veteran educators, curriculum developers, mentors working at a high level	Educator/Coach level + real-world experience with teams, competitions	• Advanced curriculum: programming techniques, sensor integration, machine-learning/AI applications (with MATRIX hardware & software) MATRIX Robotics+1 • Hands-on workshops and practical assignments • Lead training of peers, publish robotics curriculum or case studies • Coach winning teams or contribute significantly in competitions	Grandmaster Certification: for top-tier educators/mentors, opportunities to speak, collaborate globally, test new products MATRIX Robotics+1

Things to prepare:
Basic Microphone, bring your own Laptop and extension cord
Food: Lunch c/o Felta