Republic of the Philippines
Department of Education
NATIONAL CAPITAL REGION
SCHOOLS DIVISION OFFICE OF CITY OF VALENZUELA

Office of the Schools Division Superintendent

DIVISION MEMORANDUM
No. 0471 s. 2026

INTERIM GUIDELINES FOR IMPLEMENTATION OF SPECIAL PROGRAM FOR SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (SPSTEMs) F OR SY 2026-2027 ONWARDS

To: OIC – Assistant Schools Division Superintendent
Chief Education Supervisors - CID and SGOD
Education Program Supervisors and
Public Schools District Supervisors
Public Elementary and Secondary School Heads
All Others Concerned

1. For the information and guidance of all concerned, attached is Regional Memorandum No. 421, s. 2026, dated June 1, 2026, from Dr. Jocelyn DR Andaya, Regional Director, NCR, Concurrent Officer-in-Charge, Office of the Assistant Secretary for Operations, regarding the above-captioned subject, for appropriate action.

2. In addition, please refer to the said memorandum for the following enclosures:

a. Enclosure 1: Interim Regional Guidelines on the Regional and Legislated Science High School

b. Enclosure 2: List of Equipment for the Innovation Lab

c. Enclosure 3: Minimum Research Laboratory Equipment Standards for Science High Schools

d. Enclosure 4: Three-Year Masterplan for SPSTEMs

e. Enclosure 5: List of NCR Science High Schools

3. As stated in the Memorandum, all applications for the approval of new SSESs and STEs shall be temporarily placed on hold until further notice. Furthermore, STEs and SSESs shall not introduce any additional subjects, curricular offerings, or program enhancements beyond those currently being implemented by the school without prior approval and the issuance of corresponding policy guidelines from the Department of Education.

4. All SPSTEMs (RSHSs, LSHSs, STEs, and SSESs) shall submit, through this Office, their accomplishment report for the previous school year and their annual plan for the special program for the next school year to the Regional Office on or before the start of the school year. For School Year 2026–2027, the submission shall be made on or before **July 3, 2026**.

5. Immediate dissemination of this Memorandum is desired.

NOEL D. BAGANO
Schools Division Superintendent

Encl: As Stated
Reference: Regional Memorandum 421, s. 2026
To be indicated in the Perpetual Index
under the following subject

GUIDELINES
SSES
STES
SCIENCE HIGH SCHOOL

CID/LQP- INTERIM GUIDELINES FOR IMPLEMENTATION OF SPECIAL PROGRAM FOR SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (SPSTEMs) FOR SY 2026-2027 ONWARDS
_____/June 10,2026

Republic of the Philippines
Department of Education
NATIONAL CAPITAL REGION

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BY: DATE: 3:41

June 1, 2026

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REGIONAL MEMORANDUM
No. 421, s. 2026

To: Schools Division Superintendents
All others concerned

INTERIM GUIDELINES FOR IMPLEMENTATION OF SPECIAL PROGRAM FOR SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (SPSTEMs) FOR SY 2026 – 2027 ONWARDS

1. In pursuit of the goals of the Basic Education Development Plan (BEDP) 2030 and ongoing reforms under the Enhanced K to 10 Curriculum, and in line with the 5 Priority Areas of DepEd NCR, the region recognizes the need to provide interim operational guidance to the different Special Programs for Science, Technology, Engineering and Mathematics (SPSTEMs) which include the Regional Science High School, Legislated Science High Schools, Science, Technology and Engineering (STE)-Implementing Schools, and Special Science Elementary Schools.

2. These interim guidelines is issued to:
   a. Ensure the uninterrupted implementation of SPSTEMs;
   b. Promote harmonized standards and operational consistency across schools;
   c. Safeguard the integrity and intended outcomes of SPSTEMs while allowing contextual flexibility; and
   d. Serve as the regional contextual framework for Special Programs in STEM.

3. Attached in this memorandum are the following enclosures, to wit:
   a. Enclosure 1: Interim Regional Guidelines on the Regional and Legislated Science High Schools
   b. Enclosure 2: List of Equipment for the Innovation Lab
   c. Enclosure 3: Minimum Research Laboratory Equipment Standards for Science High Schools
   d. Enclosure 4: Three – Year Masterplan for SPSTEMs
   e. Enclosure 5: List of NCR Science High Schools

4. All applications for approval of new SSESs and STEs will be temporarily on hold until further notice.

5. No additional subjects, curricular offerings, or program enhancements beyond those currently implemented by the school shall be introduced by STEs and

SSESs without appropriate authority and the issuance of subsequent policy guidance from the Department of Education.

6. All SPSTEMs (RSHS, LSHS, STEs and SSES) shall submit to the region, through their divisions, their accomplishment report for the previous school year and their annual plan for the special program for the next school year on or before the start of the school year. For this School Year, the submission shall be on or before **July 3, 2026.**

7. These interim guidelines shall take effect for SY 2026 – 2027 onwards, and shall remain in force unless otherwise repealed or rescinded by another regional issuance, or a central office issuance.

8. Immediate dissemination of this Memorandum is desired.

JOCELYN DR ANDAYA
Regional Director, NCR
concurrent Officer-In-Charge, Office of the
Assistant Secretary for Operations

CLMD/DKEvangelista

ENCLOSURE 1

INTERIM OPERATIONAL GUIDELINES FOR THE REGIONAL AND LEGISLATED SCIENCE HIGH SCHOOLS UNDER THE SPECIAL PROGRAM FOR STEM (SPSTEM)

COLLECTIVE VISION OF THE SCIENCE HIGH SCHOOL AND SCIENCE HIGH SCHOOL STUDENTS UNDER DEPED NCR

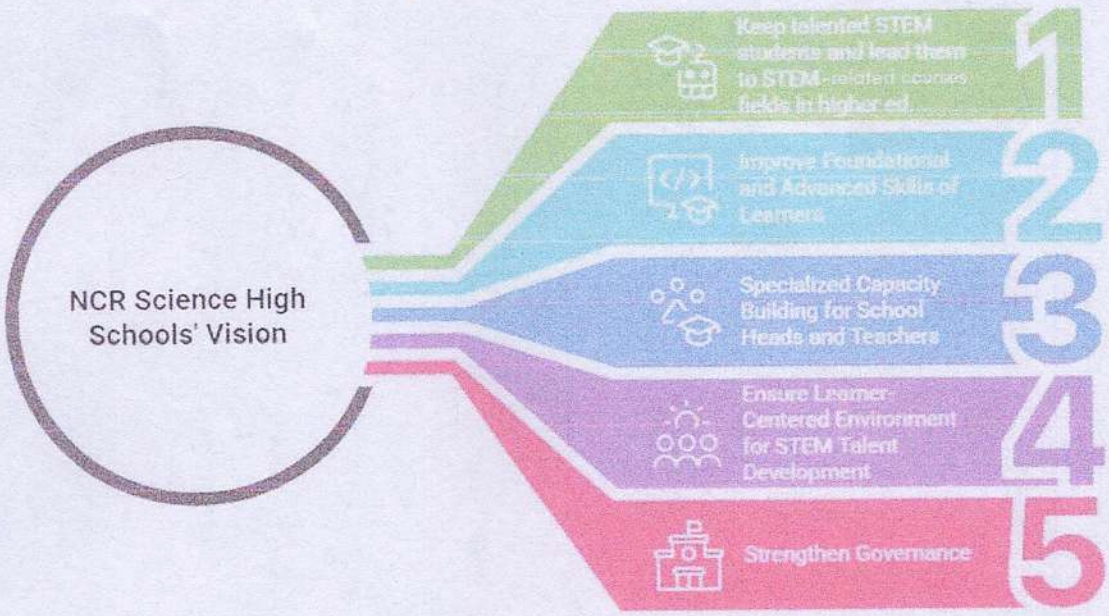
Science High School

A Science High School with accelerated learning outcomes is a showcase institution where every learner achieves mastery beyond minimum standards, progressing faster and deeper in foundational skills, STEM competencies, and 21st-century literacies. It nurtures a research-oriented culture, produces globally competitive graduates, and leverages governance, technology, and partnerships to ensure that both learners and teachers continually surpass expected trajectories of growth.

Science High School Students

DepEd NCR Science High Schools envision graduates who are *future-ready nation-builders*, *integrity-driven* STEM professionals with a *growth mindset*, *socio-emotionally resilient*, and *globally competitive yet culturally rooted*. They are solutions-oriented innovators and effective communicators committed to research, service, and responsible leadership for the nation and the world.

PROGRAM FRAMEWORK AND CONTEXTUALIZED FIVE PRIORITY AREAS



GENERAL PROVISIONS

MANAGEMENT OF RESOURCES ON THE UNIFIED SCIENCE HS SYSTEM

Human Resources

School Heads

School Heads of Regional Science High Schools (RSHS) and Legislated Science High Schools (LSHS) should possess strong instructional leadership and a demonstrated commitment to STEM education. **Preference shall be given to those with an academic background in Science, Mathematics, Research, or related fields.**

Nothing in this provision shall be construed to supersede existing qualification standards and appointment requirements prescribed by the Civil Service Commission, the Department of Education, and other applicable laws, rules, and regulations.

School Heads of Regional Science High Schools (RSHS) and Legislated Science High Schools (LSHS) shall participate in the three-year **Strengthening Instruction and Governance for Mastery in Advanced STEM Education (SIGMA) Capacity Building Program for Science High School Leaders** to strengthen instructional leadership and support the implementation of Science High School reforms. Expenses related to participation may be charged against MOOE, SEF, HRTD funds, and other available funding sources, subject to existing accounting and auditing rules and regulations.

Moreover, to ensure continuity, stability, and fidelity in the implementation of the Science High School Reform Program, incumbent School Heads of Regional Science High Schools (RSHS) and Legislated Science High Schools (LSHS) shall **remain assigned to their respective schools for the duration of the initial three-year implementation cycle of the reforms**. Reassignment or transfer during this period should be avoided except in cases of exigency of service, retirement, disciplinary action, health considerations, or other meritorious circumstances duly justified and approved by the appropriate authority.

Teachers

Schools Division Offices are enjoined to ensure that those who are subject specialists and are qualified teachers are deployed and assigned to Regional Science High Schools (RSHS) and Legislated Science High Schools (LSHS) in recognition of the specialized nature of their programs. Priority shall be given to teachers who demonstrate strong content knowledge, pedagogical competence, research capability, and a commitment to excellence in STEM education.

Assignment of teachers in RSHS and LSHS shall prioritize teachers with appropriate field specialization, content expertise, training, and professional competencies aligned with the subjects to be taught.

Teachers are required to undergo the same **SIGMA training for Teachers** for the three-year cycle for their respective grade levels. Expenses related to participation

may be charged against MOOE, SEF, HRTD funds, and other available funding sources, subject to existing accounting and auditing rules and regulations.

Those who have undergone specialized training and capacity-building programs under the Science High School Reform Program, specifically Science, Mathematics, Creative Technologies, and Research teachers, shall **remain assigned to the learning area, grade level, and program component for which they were trained throughout the three-year cycle.** Any reassignment of trained teachers to other learning areas, grade levels, schools, or non-teaching functions during the implementation period shall be undertaken only when justified by exigency of service or other valid administrative considerations, and with due regard to the instructional requirements of the Science High School program.

Physical Resources

Science High Schools must have adequate instructional rooms that conform to the minimum standard for instructional spaces and school furniture as stipulated in the Manual of Educational Facilities and DepEd Order 118, s. 2009.

On top of these basic facilities, implementing schools must provide the following facilities to ensure effective delivery of the Science High School program.

a. Laboratory
    i. Separate laboratories for Biology, Chemistry, Physics, and Mathematics with complete tools and equipment
    ii. ICT/IT/Computer laboratory with at least 35 computer units (PC/laptop) with internet connection, projector, printer with scanner, air-conditioning unit, chairs, and tables
    iii. Innovation laboratory with at least 5 computers or laptops, 3D printers, robotics kits and electronics equipment.
b. School Clinic
c. Guidance Office/Center
d. Canteen
e. Library
f. Materials recovery facility
g. Hazardous waste disposal facility following the DENR guidelines and standards on the disposal of hazardous waste

Science High Schools shall ensure the proper receipt, inventory, utilization, and maintenance of science equipment, laboratory apparatus, and instructional resources provided by the Department of Education, including those delivered through the Bureau of Learning Resources (BLR). Schools shall regularly conduct inventory and report any deficiencies, shortages, or damaged equipment to the Regional Office for appropriate coordination with the concerned offices.

In addition to standard equipment provisions, Science High Schools shall ensure the availability of facilities, equipment, and learning resources necessary for the implementation of specialized subjects, particularly in Research, Creative Technologies, and advanced STEM learning areas. Expenses for the acquisition, upgrading, and maintenance of such resources may be charged against MOOE, SEF, and other available local or external funding sources, subject to existing government

accounting, procurement, and auditing rules and regulations. School Heads are enjoined to prioritize the provision of equipment and resources required to support specialized STEM programs.

ADMISSION OF STUDENTS IN THE SCIENCE HIGH SCHOOLS

Students shall be admitted to Regional Science High Schools (RSHS) and Legislated Science High Schools (LSHS) through primarily passing the Unified Science High School Admissions Test (USHAT) and such other screening, ranking, and admission procedures as may be prescribed by the Regional Office and the Department of Education. Admission shall be based on merit and the approved admissions criteria, subject to the school's authorized absorptive capacity.

Science High Schools shall strictly adhere to the approved admissions policies, ranking procedures, and enrollment protocols established by the Regional Office. **No school shall administer separate admission examinations, impose additional admission requirements, or implement local admission policies that are inconsistent with regional or national guidelines unless expressly authorized by the Regional Director**

The Regional Office shall issue separate and supplemental guidelines governing admissions schedule, screening, ranking, enrollment confirmation, waitlisting, transfer admissions, and related procedures, which shall form an integral part of Science High School operations.

TRANSFER OF STUDENTS

Transfer from a Legislated Science High School (LSHS) to the Regional Science High School (RSHS) shall **not** be allowed as per DepEd Order No. 41, s 2005.

Transfer from the Regional Science High School to the Legislated Science High School shall be allowed, *provided* that the student satisfactorily met the academic and retention requirements of their current school and must not have any failing final grades in any learning area during the school year immediately preceding the transfer, and subject to the availability of slots and approval of the receiving school and their local ordinances.

Transfer from one Legislated Science High School (LSHS) to another Legislated Science High School (LSHS) ***may be allowed***, subject to the availability of slots and approval of the receiving school and their local ordinances. Learners seeking transfer must have satisfactorily met the academic and retention requirements of their current school and must not have any failing final grades in any learning area during the school year immediately preceding the transfer.

ACADEMIC PROBATION

To remain in the Regional and Legislated Science High School, learners shall:

i. obtain a grade of at least **85%** in Science, Mathematics, English, and Research, and at least **83%** in all other subject areas every grading period.

ii. ***be on probation for a period of one term should they fail to meet the required grades for any subject.*** If a learner fails to meet the required grades after the probation period, he/she shall be transferred to a regular high school of his/her preference by the next school year. Probationary period is only given once.

ASSESSMENT AND GRADING

Assessment and grading in Science High Schools shall adhere to existing Department of Education policies, standards, and guidelines on classroom assessment, grading, promotion, learner welfare, and curriculum implementation. Schools shall ensure that assessment practices remain fair, valid, inclusive, and aligned with prescribed learning competencies and intended learning outcomes.

Schools are also encouraged to utilize digital assessment tools and educational technologies, provided that these comply with applicable standards on accessibility, data privacy, child protection, and academic integrity.

As learners in Science High Schools are always exposed to co-curricular and extra-curricular activities, those who officially represent the school, division, region, or the Department of Education in approved academic, research, co-curricular, and extra-curricular activities shall be provided reasonable opportunities to complete missed assessments, learning tasks, and other academic requirements resulting from their authorized participation. *Such participation shall not disadvantage learners in the determination of grades, provided that prescribed make-up requirements are completed within timelines established by the school.* Teachers may likewise credit participation in competitions, research conferences, exhibitions, and similar activities in lieu of certain academic requirements when such activities demonstrate the intended learning competencies.

RESEARCH PROGRAM IMPLEMENTATION

Regional Science High Schools (RSHS) and Legislated Science High Schools (LSHS) shall conduct an annual Research Festival at the end of the school year as part of the instructional program and culminating research activities of learners. The Research Festival shall serve as a venue for the presentation, exhibition, critique, and recognition of learner research outputs, innovations, investigatory projects, and other scholarly or STEM-related works developed during the academic year. The conduct of the Research Festival shall form part of the instructional block and academic requirements of the Research subject and related curricular areas. Schools shall ensure that sufficient instructional time, technical mentoring, and institutional support are provided for the preparation and conduct of research outputs and festival activities.

Schools are encouraged to involve internal and external experts, industry partners, higher education institutions, alumni, and community stakeholders, where feasible, to strengthen the quality, authenticity, and relevance of learner research experiences.

RSHS and LSHS are also enjoined to have their own school science and technology fair as a pre-requisite for joining their Division Science and Technology Fairs.

The Regional Science High Schools (RSHS), Legislated Science High Schools (LSHS) **shall establish and maintain a dedicated research repository within their library** or learning resource center. The repository shall serve as a permanent collection and showcase of completed learner and teacher research outputs, investigatory projects, innovations, and related scholarly works produced by the school. Schools are encouraged to ensure that such repositories are organized, accessible, and regularly updated to support research instruction, knowledge sharing, and the promotion of a culture of inquiry.

At the end of each school year, concerned schools shall submit to the Regional Office, together with their annual accomplishment report, a consolidated Book of Abstracts and a digital database of completed research outputs conducted during the school year. The Regional Office shall utilize these submissions in establishing a regional research repository and knowledge management system that may serve as reference materials and supplementary learning resources for learners, teachers, researchers, and program implementers across the region.

Expenses related to the conduct of Research Festivals and other research-related activities, such as patenting, securing of copyrights, purchase of subscriptions to journals or plagiarism checkers, and intellectual property of these researches, may be charged against MOOE, SEF, school-generated funds, or other available local and external funding sources, subject to existing accounting, procurement, and auditing rules and regulations.

SOCIO-EMOTIONAL LEARNING INTEGRATION

Science High Schools shall intentionally integrate Social-Emotional Learning (SEL) into curriculum implementation, instructional delivery, research activities, co-curricular programs, and learner support systems to promote the holistic development and well-being of learners. While maintaining high standards of academic excellence and rigor, schools shall ensure that learning environments foster self-awareness, self-management, responsible decision-making, resilience, collaboration, empathy, leadership, and positive interpersonal relationships.

To support the integration of Social-Emotional Learning (SEL), Science High Schools are encouraged to implement age-appropriate activities and programs such as advisory and homeroom sessions, mentoring programs, peer support initiatives, wellness and mental health activities, leadership camps, values formation programs, team-building activities, reflective journaling, community engagement projects, service-learning activities, research ethics discussions, career guidance activities, student-led conferences, innovation challenges, and collaborative STEM projects. Schools may likewise integrate SEL competencies into club activities, research festivals, science fairs, competitions, and other co-curricular engagements to strengthen learner resilience, collaboration, leadership, empathy, and responsible decision-making.

IMPLEMENTATION OF "HOUSE OF STEM" PROGRAM

Through the continued partnership between DepEd NCR and the UP National Institute for Science and Mathematics Education, the ***House of STEM Program*** shall serve as a shared resource and learning hub for Science High Schools. Schools may borrow selected STEM equipment and instructional resources, including robotics kits and similar learning tools, and invite subject matter experts, subject to established borrowing, scheduling, and accountability procedures. The program aims to expand access to specialized STEM resources, strengthen hands-on learning experiences, and support the implementation of Science, Mathematics, Research, and Creative Technologies programs across the region.

PHASED IMPLEMENTATION OF HARMONIZED SCIENCE HIGH SCHOOL CURRICULUM

2. Additional subjects and subject enhancements to be offered in the Regional and Legislated Science High Schools, starting SY 2026 – 2027 through phased implementation:

	Grade 7	Grade 8	Grade 9	Grade 10
Phase 1 SY 2026 – 2027	• Enhanced Science 7 • Enhanced Mathematics 7 • Research 7 • Creative Technology 7 • Advanced Mathematical Thinking 7 • Environmental Science			
Phase 2 SY 2027 – 2028	• Enhanced Science 7 • Enhanced Mathematics 7 • Research 7 • Creative Technology 7 • Advanced Mathematical Thinking 7 • Environmental Science	• Enhanced Science 8 • Enhanced Mathematics 8 • Research 8A and 8B • Creative Technology 8 • Advanced Mathematical Thinking 8 • Biotechnology		
Phase 3 SY 2028 – 2029	• Enhanced Science 7 • Enhanced Mathematics 7 • Research 7 • Creative Technology 7 • Advanced Mathematical Thinking 7 • Environmental Science	• Enhanced Science 8 • Enhanced Mathematics 8 • Research 8A **and** 8B • Creative Technology 8 • Advanced Mathematical Thinking 8 • Biotechnology	• Enhanced Science 9 • Enhanced Mathematics 9 • Research 9A **or** 9B • Creative Technology 9 • Advanced Mathematical Thinking 9 • Consumer Chemistry	• Enhanced Science 10 • Enhanced Mathematics 10 • Research 10A **or** 10B • Creative Technology 10 • Advanced Mathematica Thinking 10 • Nuclear Science

a. **Enhanced Science and Enhanced Mathematics** shall be implemented from Grades 7 to 10. Each subject shall be allotted at least 300 minutes per week.

b. **Research** shall be offered as a subject leading to the conduct of full research projects. Research subjects shall be allotted at least 200 minutes per week for RSHS and LSHS. Research 7 is a general research subject, exposing them to basic and integrated science process skills and the different categories of research, while Research 8 is exploratory, with 2 sessions dedicated for Science Research and 2 sessions for Mathematical Research. Research 9 and 10 shall be discipline based, based on the choice of the student whether to pursue Science or Mathematics research.

c. **Creative Technologies**, as a contextualized Technology and Livelihood Education (TLE) subject for RSHS and LSHS, shall be progressively implemented starting Grade 7. **In these schools, Creative Technologies shall replace the regular TLE subject,** in line with DepEd Order No. 46, s 2012.

d. For RSHS and LSHS, **two additional enrichment subjects, one for Science and one for Math** that support and strengthen Enhanced Science and Mathematics will also be offered. These add-on subjects shall be allotted at least 100 minutes per week.

e. Those RSHS and LSHS with existing other special curricular programs such as SPFL may only offer up to 50 minutes per week for that special program.

f. For RSHS and LSHS, a **designated club period,** which is non-graded, shall be incorporated into the class program to support learner development in leadership, research, innovation, culture, arts, athletics, and other co-curricular engagements aligned with the objectives of the science high school program. Club time shall be allotted for at least 50 minutes per week, provided that it does not compromise the prescribed instructional time requirements of the curriculum.

RSHS and LSHSs shall ensure the availability of appropriate learning resources, instructional materials, laboratory equipment, technological tools, and other necessary facilities to support the effective delivery of specialized subjects and curricular enhancements. Expenses for the procurement, reproduction, development, and maintenance of such resources shall be charged against the Maintenance and Other Operating Expenses (MOOE), Special Education Fund (SEF), and other available local or external funding sources, subject to existing accounting, auditing, procurement, and budgeting rules and regulations. School Heads are enjoined to ensure that all specialized subjects and curricular offerings are adequately supported

by the necessary equipment, facilities, and instructional resources prior to implementation.

The copies of the curriculum guides are uploaded in this drive link: https://tinyurl.com/NCRSciHSCGs or this QR code:

TIME ALLOTMENT FOR SUBJECTS

The time allotment for each subject is based on DepEd Order No. 12, s 2024, focusing on item 10, sub-items ii and iii:

Subjects	Minimum Number of Minutes
	RSHS/LSHS
Filipino	200
English	250
Araling Panlipunan	200
MAPEH	200
GMRC/Values Education	250
Creative Technologies	200
Enhanced Mathematics	300
Enhanced Science	300
Research	200
Mathematics Add-on (Advanced Mathematical Thinking)	100
Science Add – on	100
Homeroom Guidance	50
Club Time	50
Special Program for Foreign Language* *(for those with MOA only)*	50

A sample class program is shown below:

Sample Class Program for Grade 7

	Monday	Tuesday	Wednesday	Thursday	Friday
7:00 - 7:50	Enhanced Science	Enhanced Science	Enhanced Science	Enhanced Science	Enhanced Science
7:50 - 8:40	Enhanced Science	Research	Research	Research	Research
8:40 - 9:30	MAPEH	MAPEH	MAPEH	MAPEH	Environmental Science
9:30 - 9:45	BREAK				
9:45 - 10:35	Environmental Science	Filipino	Filipino	Filipino	Filipino
10:35 - 11:25	Araling Panlipunan	Araling Panlipunan	Araling Panlipunan	Araling Panlipunan	Enhanced Mathematics
11:25 - 12:15	Enhanced Mathematics	Enhanced Mathematics	Enhanced Mathematics	Enhanced Mathematics	Enhanced Mathematics
12:15 - 1:00	LUNCH				
1:00 - 1:50	Values Education	Values Education	Values Education	Values Education	Values Education
1:50 - 2:40	English	English	English	English	English
2:40 - 2:55	BREAK				
2:55 - 3:45	Advanced Mathematical Thinking	Advanced Mathematical Thinking	Creative Technology	Creative Technology	Creative Technology
3:45 - 4:35	Creative Technology	Homeroom Guidance	Club Time	Foreign Language*	

**If Science HS is offering FL*

CLASS SIZE, SECTIONING, AND TEACHER ASSIGNMENT

For Regional Science High Schools (RSHS) and Legislated Science High Schools (LSHS), each class section shall have a **minimum of twenty (20) learners** to ensure the efficient and sustainable implementation of specialized curricular offerings and resource utilization.

Sectioning of learners shall consider learner welfare, classroom safety, available facilities, laboratory capacity, instructional resources, and teacher availability. Schools shall avoid overcrowding, particularly in classes requiring laboratory work, research activities, technical applications, and specialized equipment.

ROLES AND RESPONSIBILITIES

The following shows the roles and responsibilities of each of the governance levels:

Level of Governance	Roles and Responsibilities
Regional Office (CLMD)	• Provide policy direction, technical assistance, capacity-building activities, monitoring, and quality assurance mechanisms for SPSTEM implementation. • Facilitate curriculum harmonization and implementation support. • Develop implementation support materials and reference resources. • Monitor the implementation of the SPSTEM program. • Consolidate regional reports, data, and performance indicators. • Maintain the regional research repository and database. • Recommend policy enhancements based on implementation findings and emerging needs.
Schools Division Office (CID, primarily EPSs of Mathematiucs and Science, and PSDSs in charge of the school)	• Provide technical supervision and instructional support to implementing schools. • Monitor compliance with curriculum standards and program requirements. • Facilitate professional development and capacity-building activities. • Provide technical assistance to teachers and school leaders. • Validate curriculum and program implementation. • Submit reports and recommendations to the Regional Office. • Monitor the implementation of specialized subjects, research programs, assessment practices, LAC sessions, and other curriculum-related initiatives.
School Heads	• Serve as instructional leaders of the SPSTEM program. • Oversee curriculum planning, scheduling, and implementation. • Ensure the availability of facilities, equipment, learning resources, and laboratory requirements.

	• Supervise instructional delivery, assessment, and research programs. • Facilitate teacher professional development and collaborative learning activities. • Conduct internal monitoring and support continuous improvement initiatives.

MONITORING AND EVALUATION

The Regional Office, through the Curriculum and Learning Management Division (CLMD), and the Schools Division Offices, through the Curriculum Implementation Division (CID) and concerned Education Program Supervisors (EPSs), mainly the Science and Mathematics EPSs, and the Public Schools District Supervisor overseeing the school, shall conduct regular monitoring, evaluation, and technical assistance activities to ensure the effective implementation of Science High School programs and compliance with regional and national policies.

Regional Science High Schools (RSHS) and Legislated Science High Schools (LSHS) shall be subject to periodic division and regional monitoring covering, but not limited to:

- Curriculum implementation and instructional delivery;
- Assessment and grading practices;
- Learner performance and achievement indicators;
- Research program implementation and conduct of Research Festivals;
- Teacher deployment, and professional development;
- Learning resources, laboratory facilities, and specialized equipment;
- Social-Emotional Learning (SEL) integration;
- Club and enrichment program implementation;
- Partnerships, innovation initiatives, and special projects; and
- Compliance with regional and national policies governing Science High Schools.

ENCLOSURE 2: MINIMUM REQUIREMENTS FOR THE INNOVATION/CREATIVE TECHNOLOGIES LABORATORY

To facilitate the Creative Technologies subject, the following minimum requirements are needed:

I. PHYSICAL SPACE AND SAFETY REQUIREMENTS (NON-NEGOTIABLE)

A. Dedicated Space

- A **dedicated room or clearly demarcated area** used primarily for robotics and making activities.
- Minimum capacity: **30–35 learners** working in small groups.
- Adequate lighting and ventilation suitable for electronics work.

B. Safety and Compliance

- Clearly visible **safety rules and emergency procedures**.
- **Fire extinguisher** appropriate for electrical fires.
- **First aid kit** accessible inside the laboratory.
- Secure storage for tools and electronic components.
- Electrical outlets with proper load capacity and grounding.

II. CORE ROBOTICS AND COMPUTING HARDWARE (MINIMUM SET)

A. Learner Computing Devices

- At least **1 computer or laptop per 2–3 learners** (so in the lab, there should have at least **10 computers)**
- Minimum specifications:
  - Modern multi-core processor
  - At least **8 GB RAM**
  - USB ports for microcontroller programming
- Operating systems capable of running programming and simulation software.

B. Robotics Control Platforms

At least **one standard microcontroller platform** adopted school-wide, such as microcontroller boards compatible with block-based and text-based coding.

Minimum quantity:

- **1 microcontroller kit per learner group** (ideally 1:2–3 learners), so at least **10 kits** in the lab.

C. Power and Connectivity

- Reliable power supply.
- Internet access (wired or wireless) for:
  - Software updates
  - Research
  - Documentation and collaboration

III. ELECTRONICS AND ROBOTICS COMPONENTS (FOUNDATIONAL SET)

Each Robotics / Makerspace Laboratory must have at least **10 starter component sets** sufficient for iterative prototyping.

A. Basic Electronic Components

- Resistors, LEDs, capacitors
- Breadboards
- Jumper wires (male–male, male–female)
- Switches and buttons

B. Sensors and Actuators (Minimum Variety)

- Distance or proximity sensor
- Light or temperature sensor
- DC motors and/or servo motors
- Motor drivers or controllers

C. Structural and Assembly Materials

- Basic chassis or frame components
- Screws, fasteners, wheels, mounts
- Reusable prototyping materials

Since some of the items are consumable, they may be charged against MOOE, SEF, or local funds.

IV. TOOLS AND FABRICATION EQUIPMENT (ENTRY-LEVEL)

This section defines the **minimum maker capability**, not advanced fabrication.

A. Hand Tools

- Precision screwdrivers
- Wire strippers and cutters
- Pliers
- Measuring tools (ruler, caliper)

B. Electronics Tools

- Soldering iron (with stand)
- Solder and basic desoldering tools
- Multimeter (minimum of one per lab)

C. Fabrication

At least **five** of entry-level **3D printer**, or manual fabrication tools sufficient for structural prototyping.

The minimum specifications are the following:

(Note that the wording is intentionally neutral, brand-agnostic, and verifiable, focusing on functional capability rather than model names.)

GENERAL DESCRIPTION

The 3D printer shall be a **desktop-type Fused Deposition Modeling (FDM) 3D printer** designed for educational, prototyping, and research-preparatory use, capable of producing plastic parts for Creative Technologies instruction, robotics projects, and basic engineering research.

II. PRINTING TECHNOLOGY AND PERFORMANCE

Specification	Minimum Requirement
Printing Technology	Fused Deposition Modeling (FDM)
Print Resolution (Layer Height)	0.1 – 0.4 mm
Nozzle Diameter	Standard 0.4 mm (replaceable)
Print Accuracy	±0.1 mm
Maximum Print Speed	≥ 100 mm/s (adjustable)

III. BUILD VOLUME AND MECHANICAL DESIGN

Specification	Minimum Requirement
Build Volume	Not less than **200 × 200 × 200 mm**
Frame Type	Rigid metal or reinforced frame
Bed Leveling	Manual or automatic bed leveling system
Build Plate	Heated bed with removable or coated surface
Motion System	Belt-driven or linear rail system suitable for classroom use

IV. FILAMENT AND MATERIAL COMPATIBILITY

Specification	Minimum Requirement
Filament Diameter	1.75 mm
Supported Materials (Minimum)	PLA
Optional Materials (Preferred)	PETG, TPU (if supported)
Operating Nozzle Temperature	Up to 230 °C or higher
Heated Bed Temperature	Up to 60 °C or higher

Note: PLA compatibility is non-negotiable due to safety, ease of use, and suitability for school environments.

V. USER INTERFACE AND CONTROL

Specification	Minimum Requirement
Display	LCD or touchscreen interface
User Controls	On-device navigation for print control
Print Monitoring	Real-time print status display

Specification	Minimum Requirement
Resume Function	Power-loss or print-resume capability (preferred)

VI. CONNECTIVITY AND FILE HANDLING

Specification	Minimum Requirement
File Input	USB drive or SD card
Connectivity	USB connection to computer
File Format Support	STL, G-code
Slicer Compatibility	Compatible with common open-source slicers

VII. SAFETY AND CLASSROOM SUITABILITY

Specification	Minimum Requirement
Enclosure	Open-frame allowed; enclosed or semi-enclosed preferred
Thermal Protection	Over-temperature protection
Electrical Safety	Certified power supply with grounding
Noise Level	Suitable for classroom use
Emergency Stop	Physical or software-based stop function

VIII. SOFTWARE AND ECOSYSTEM REQUIREMENTS

Specification	Minimum Requirement
Slicer Software	Free or education-licensed
OS Compatibility	Windows (minimum); macOS/Linux preferred
CAD Compatibility	Accepts STL output from beginner CAD tools
Firmware	Upgradable

IX. MAINTENANCE AND SUPPORT

Specification	Minimum Requirement
Replaceable Parts	Nozzle, build surface, belts
Maintenance Level	Suitable for school-based maintenance
Documentation	User manual and safety guidelines
Local Availability	Consumables and basic spare parts accessible

X. MINIMUM FUNCTIONAL CAPABILITIES (NON-NEGOTIABLE)

The 3D printer must be capable of:

- Printing **functional robotics parts** (e.g., brackets, housings, mounts).
- Supporting **iterative prototyping** for student projects.
- Operating reliably under **repeated classroom use**.

- Being operated safely by **trained teachers and supervised learners**.

V. SOFTWARE, PLATFORMS, AND DIGITAL TOOLS

A. Programming Environments

- Block-based programming platform (for beginners).
- Text-based programming environment (for progression).
- Software must support:
  - Robotics control
  - Sensor integration

B. Design and Documentation Tools

- Simple CAD or design software (for modeling parts).
- Tools for documentation:
  - Lab journals
  - Project portfolios
  - Research documentation

C. Open-Source and Ethical Use

- Preference for **open-source or education-licensed software**.
- Clear guidelines on ethical use, data handling, and academic integrity.

VI. HUMAN RESOURCE AND OPERATIONAL REQUIREMENTS

A. Teacher Capability (Minimum)

- At least **one trained teacher** capable of:
  - Basic robotics instruction
  - Safe use of tools and equipment
  - Supervising student research projects

B. Laboratory Management

- Designated **Robotics / Makerspace Custodian or Coordinator**.
- Clear scheduling and usage protocols.
- Maintenance and consumables replenishment plan.

Minimum Evidence:
Designation orders and training certificates or attendance records.

ENCLOSURE 4: Minimum Research Laboratory Equipment Standards for Science High Schools

To support the conduct of learner research, investigatory projects, innovation programs, and STEM-related activities, Science High Schools shall progressively establish and maintain research laboratory facilities equipped with the following minimum equipment and resources.

A. Required Equipment and Resources

The following equipment shall constitute the minimum research laboratory requirements for all Science High Schools:

Equipment	Minimum Specification
Analytical Balance	Readability of at least 0.001 g
Top-Loading Balance	Readability of at least 0.01 g
Digital pH Meter	Portable, ±0.01 accuracy
Compound Microscope	Up to 1000x magnification
Stereo Microscope	20x–40x magnification
Digital Caliper	Resolution of 0.01 mm
Hot Plate with Magnetic Stirrer	Laboratory grade
Drying Oven	Temperature range of at least 50–250°C
Water Quality Test Kit	Multi-parameter testing capability
Research Workstation Computer	Minimum Core i5/Ryzen 5 processor, 16 GB RAM
High-Speed Internet Connectivity	Suitable for research and data access
Research Repository Area	Dedicated area for research outputs and documentation

B. Recommended Equipment and Resources

Equipment	Minimum Specification
Centrifuge	3000–4000 rpm
Laboratory Incubator	Adjustable temperature settings
Digital Microscope Camera	USB-enabled
Dissolved Oxygen Meter	Portable
Conductivity/TDS Meter	Portable
Drone with Camera	For environmental and mapping studies
GPS Device	Handheld

Refrigerator for Sample Storage	Dedicated laboratory use
Rotary Evaporator	Bench-top unit with digital temperature control and condenser system for solvent recovery and concentration of extracts

C. Advanced Equipment and Resources

Science High Schools with established research programs and available funding may acquire advanced equipment to support higher-level research and innovation projects:

Equipment	Minimum Specification
PCR Machine	Educational or research-grade
Gel Electrophoresis System	Educational or research-grade
Micropipette Set	0.1–1000 µL range
Autoclave	Bench-top model
Vortex Mixer	Laboratory grade
Oscilloscope	Minimum 50 MHz
Variable DC Power Supply	Laboratory grade
GIS Workstation	Capable of running QGIS and geospatial analysis software

Prioritization

Science High Schools shall prioritize the acquisition of equipment under the **Required Equipment and Resources** category. Schools are encouraged to progressively expand their research laboratory capabilities through the procurement of Recommended and Advanced equipment using MOOE, Special Education Fund (SEF), grants, donations, and other available funding sources, subject to existing government accounting, procurement, and auditing rules and regulations.

ENCLOSURE 5: NCR SPSTEM REFORM ROADMAP (SY 2025 – 2026 to SY 2027 - 2028)

The Three-Year SPSTEM Reform Roadmap outlines the strategic direction of DepEd NCR in strengthening and harmonizing Science High Schools, STE Programs, and SSES across the region. Anchored on the principles of excellence, innovation, research, and continuous improvement, the roadmap adopts a phased approach beginning with Science High School reform and harmonization, followed by the expansion of reforms to STE and SSES, and culminating in the institutionalization of a unified and sustainable SPSTEM ecosystem. The roadmap shall serve as the basis for program implementation, capacity-building, monitoring, and policy development throughout the three-year reform cycle.

Reform Package

Reform Area	FY 2026	FY 2027	FY 2028
Admissions Reform	Implementation of Unified Science High School Admissions Test (USHAT) for all Science High Schools Development of Unified STE Admissions Test (USTEAT) and Unified SSES Admissions Test (USSESAT)	Year 2 of USHAT for Science High Schools Implementation of Unified STE Admissions Test (USTEAT) and Unified SSES Admissions Test (USSESAT)	Full harmonization and evaluation of admissions systems across SHS, STE, and SSES
Curriculum Reform	Development and release of contextualized curriculum guides, curriculum implementation guidelines, and operational standards for Science High Schools	Development and refinement of contextualized curriculum resources and implementation support mechanisms for STE and SSES	Review, evaluation, and refinement of SPSTEM curriculum frameworks and implementation standards
Teacher Capacity Building	SIGMA Year 1 for Grade 7 Science, Mathematics, Research, and Creative Technologies teachers; School Leaders Phase 1	SIGMA Year 2 for Grade 8 teachers; School Leaders Phase 2; Capacity-building program for Grade 7 STE and Grade 3 SSES teachers and school leaders	SIGMA Year 3 for Grade 9 and 10 teachers; School Leaders Phase 3; Advanced professional development and sustainability mechanisms

Leadership and Governance	Issuance of interim curriculum and operational guidelines for Science High Schools; establishment of implementation and monitoring systems	Development of governance, monitoring, and implementation support systems for STE and SSES	Institutionalization of SPSTEM governance systems and regional quality assurance mechanisms
Research and Innovation	Establishment of annual Research Festivals, research repositories, and regional research monitoring systems for Science High Schools	Expansion of research and innovation programs to STE and SSES implementing schools	Full regional research ecosystem and repository integration across SPSTEM programs
Monitoring and Quality Assurance	Baseline implementation monitoring and school scorecard development for Science High Schools	Expansion of monitoring and technical assistance systems to STE and SSES	Comprehensive program evaluation and policy review across all SPSTEM programs
Facilities and Learning Resources	Identification of equipment standards and resource requirements for Science High Schools Procurement of resources for Creative Technology Laboratory *(Enclosure 2)* and Required Equipment and Resources *(Enclosure 3)*	Resource strengthening and facility enhancement for STE and SSES implementing schools Procurement of Recommended Equipment and Resources *(Enclosure 3)*	Consolidation and evaluation of facility and resource readiness across SPSTEM programs Continuous procurement of resources as the need arises

ENCLOSURE 5: LIST OF IMPLEMENTING NCR SCIENCE HIGH SCHOOLS

Regional Science HS

1. Quezon City Science High School

Legislated Science HS

1. Caloocan City Science High School
2. Caloocan National Science and Technology High School
3. Las Pinas City National Science High School
4. Malabon City National Science and Mathematics High School
5. City of Mandaluyong Science High School
6. Manila Science HS
7. Marikina Science High School
8. Muntinlupa Science High School
9. Navotas National Science HS
10. Paranaque Science High School
11. Pasay City National Science High School
12. Pasig City Science High School
13. San Juan City Science High School
14. Makati Science High School
15. Taguig Science HS
16. Sen Renato Companero Cayetano Memorial Science & Technology HS
17. Valenzuela City School of Mathematics and Science