



Republic of the Philippines  
Department of Education  
REGION VI – WESTERN VISAYAS  
SCHOOLS DIVISION OF AKLAN

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**Division Advisory No. 119 s. 2024**  
November 14, 2024

In compliance with D.O. No. 08, s. 2013

This advisory is issued not for indorsement per DO 28, s. 2001,  
but only for the information of DepED SDO Aklan officials, personnel/staff.  
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Attached is Regional Advisory No. 236, s.2024 titled, "**PHYSICS INNOVATION CHALLENGE COMPETITION**" scheduled on November 27, 2024.

For more information, please see attached Advisory or contact Atty. William A. Laride, Academic Head, Physics and IS Unit of the Philippine Science High School Western Visayas Campus.



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Republic of the Philippines  
**Department of Education**  
REGION VI-WESTERN VISAYAS

Regional Advisory No. 236, s. 2024  
November 8, 2024

In compliance with DepEd Order (DO) No. 8, s. 2013  
this advisory is issued not for endorsement per DO 28, s. 2001,  
but only for the information of Region VI DepEd  
officials and personnel/staff.  
(Visit [region6.deped.gov.ph](http://region6.deped.gov.ph))

**PHYSICS INNOVATION CHALLENGE COMPETITION**

Attached is a letter from Atty. William A. Laride, Academic Unit Head, Physics and IS Unit and Project Leader titled **Physics Innovation Challenge Competition**, with the theme, *Empowering the Youth as Innovators, Building Sustainable Future* on November 27, 2024.

The Schools Division Superintendents are given the discretion to act on this matter.

Participants may register on-line through this link <https://forms.gle/ZNvpNGWwPe7b6K2C8> or by scanning the QR Code.

Scan me to register:



For more details, please visit <https://bit.ly/4fmBaV1> or scan the QR code below:

Scan me for details:



RRL-CLMD-RA-2024-Physics Innovation Challenge Competition  
082/November 6, 2024



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Republic of the Philippines  
**DEPARTMENT OF SCIENCE AND TECHNOLOGY**  
**PHILIPPINE SCIENCE HIGH SCHOOL**  
**WESTERN VISAYAS CAMPUS**



October 30, 2024

**RAMIR B. UYTICO, Ph.D., CESO III**  
 Regional Director  
 DepEd, Region Office VI  
 Duran St., Iloilo City

**RE: Request for Endorsement of the Physics Innovation Challenge Competition on November 27, 2024, during the PSHSWVC's MaHuESci 2024 Celebration**

Dear Dr. Uytico,

Warm greetings!

We are writing this letter to respectfully request from your office the endorsement of our upcoming **Physics Innovation Challenge Competition** with the theme: *Empowering the Youth as Innovators, Building Sustainable Future* on November 27, 2024, during the PSHSWVC's MaHuESci 2024 Celebration which will be held at Philippine Science High School Western Visayas Campus, Bitoon, Jaro, Iloilo City.

This Physics Innovation competition is a one-day event which is primarily aimed to promote Intellectual Property concepts, encourage Design Thinking and stimulate Science Innovation among participating schools where students will have the opportunity to explore and develop original solutions to physics-based problems and be inspired to contribute to the field of science with fresh and innovative perspectives.

Participants may register on-line through this link or by scanning the QR Code below:

<https://forms.gle/ZNypNGWwPe7b6K2C8>

Scan me to register:



Scan me for details:



Attached to this letter is the competition mechanics which provides further details of the competition which is also available on-line through this link or by scanning the QR Code above: <https://bit.ly/4fmBaV1>. There will be no registration fee and the slot is also very limited so we hope your office will issue a favorable recommendation on the matter. Thank you very much.

Truly yours,

*William A. Laride*  
**ATTY. WILLIAM A. LARIDE**

Academic Unit Head, Physics and IS Unit and Project Leader

*Shena Faith M. Ganela*  
**SHENA FAITH M. GANELA, Ph.D.**  
 Director III

*"Premier Science High School Education Begins at DOST-PSHS!"*



## Physics Innovation Challenge

The Physics Innovation Challenge during the STEAM and Humanities Celebration is a competition designed as a dynamic science innovation event for Grade 9 and 10 students from the City and Province of Iloilo. This is part of the Physics and IS Unit's broader commitment to fostering intellectual curiosity, design thinking, and scientific innovation among young learners.

### I. PURPOSE AND GOALS

- A. Promote Intellectual Property Concepts:** The competition seeks to introduce students to the fundamental concepts of intellectual property, emphasizing the importance of protecting and valuing innovative ideas. By engaging students in practical challenges, this activity will cultivate an understanding of how intellectual property rights play a crucial role in the advancement of science and technology.
- B. Encourage Design Thinking:** Through a series of innovative challenges, participants will apply design thinking principles to real-world problems. This approach encourages creative problem-solving, iterative testing, and refinement of ideas which are essential skills for future scientific and technological endeavors.
- C. Stimulate Science Innovation:** By participating in this competition, students will have the opportunity to explore and develop original solutions to physics-based problems. The hands-on experience will not only deepen understanding of physical principles but also inspire the students to contribute to the field of science with fresh and innovative perspectives.

### II. COMPETITION STRUCTURE

Teams of three students, comprising both Grade 9 and 10 participants, will collaborate to tackle a range of physics-related challenges. These challenges are designed to test their creativity, problem-solving skills, and application of scientific concepts that will foster teamwork and collaboration, essential for successful scientific research and innovation.

- A. Team Composition and Registration:** Each school may send two teams, one to participate for the physics challenges and another team for the science innovation project.
- B. Coach:** Each school shall designate one coach to guide and support the team. The coach will be responsible for communication between the school and the competition organizers.

### III. Physics Challenge Competition:

- A. Mechanics.** Teams will compete in a series of hands-on physics challenges and activities designed to test their understanding of physical principles, problem-solving abilities, and creativity.

The challenges include bridge construction using popsicle sticks, paper tower, paper airplane, and egg transport.

Specific rules and instructions for each challenge are provided here.

#### **IV. Science Innovation Project Presentation:**

**A. Mechanics.** One team from each competing school will present or pitch an original science innovation project on the theme: ***Empowering the Youth as Innovators, Building Sustainable Future*** to address a problem on the following topics:

- Develop a technology to remove and reduce carbon dioxide and other air pollutants in the atmosphere.
- Develop an agriculture technology to address food security issues.
- Develop a portable device capable of monitoring and diagnosing a range of health conditions.
- Develop a technology to address waste management issues, recycling, waste reduction, and sustainable materials management.
- Develop innovative solutions to improve urban living, including transportation, energy efficiency, and public safety.

The project should address a specific problem or opportunity in science or technology, showcasing creativity, scientific understanding, practical application and incorporating **Arduino or other types of digital sensors**.

During the competition, the teams should already be ready with their innovation idea, innovation design and slide presentation.

Prior to actual presentation, the teams will be given 2 hours to brainstorm with the assigned PSHS teacher and PSHS student mentors to further improve their innovation project and slide presentation.

Each innovation team will be given 10 minutes to present their innovation idea including the Q&A session with the judges.

#### **B. Criteria for Judging**

**Innovation and Originality (30%):** Novelty and uniqueness of the project.

**Scientific Understanding (20%):** Depth of scientific knowledge and application of principles.

**Practicality and Impact (30%):** Feasibility and potential impact of the innovation.

**Presentation Quality (20%):** Effectiveness and clarity of the presentation, including the ability to address questions from the judges.

## V. Prizes

### A. Overall Winner for Physics Challenges:

1st Place: Certificate, and a cash prize.  
2nd Place: Certificate, and a cash prize.  
3rd Place: Certificate, and a cash prize.

### B. Best Science Innovation Project:

1st Place: Certificate, and a cash prize.  
2nd Place: Certificate, and a cash prize.  
3rd Place: Certificate, and a cash prize.

### C. Special Awards:

Best Presentation: Awarded to the team with the most effective presentation.  
Most Creative Solution: Awarded to the team demonstrating exceptional creativity in solving the challenges.

## VI. IMPORTANT DATES AND DEADLINES

1) Registration Deadline: NOVEMBER 18, 2024. Register online through this link:  
<https://forms.gle/ZNypNGWwPe7b6K2C8>

Scan me to register:



Scan me for details:



2) Details of the competition are also available on-line through this link or by scanning the QR Code above: <https://bit.ly/4fmBaV1>.

3) Competition Date: NOVEMBER 27, 2024

4) Venue: The competition will be held at PSHS SLRC/MakerSpace Building

5) Contact Information: For any queries, please contact

Atty William A. Laride (09164063950, [wlaride@wvc.pshs.edu.ph](mailto:wlaride@wvc.pshs.edu.ph))

Ms. May Ann Janas (3295644)

Dr. Rowena Labrador (3295644)

PROGRAM OF ACTIVITIES (Physics Challenges)			
TIME	Events	Venue	
7:30 – 8:00	Registration	SLRC	
8:00 – 8:30	Opening Program	SLRC	
8:30 – 9:15	Bridge Building Competition	SLRC	
9:15 – 10:15	Paper Tower	SLRC	
10:15 -11:00	Egg Transport	Covered Gym	
11:00 – 12:00	Paper Airplane	Covered Gym	

PROGRAM OF ACTIVITIES (Innovation Challenges)			
Events	Venue		
8:30 – 10:30 Pitching	SLRC		
10:30 – 11:30 Brainstorming, polishing and refinement of innovation projects	SLRC		
12:30 – Innovation presentation	SLRC		

## PHYSICS CHALLENGES<sup>1</sup>

### A. PAPER TOWER

**Objective:** To construct a free-standing paper tower using two sheets of long bond paper and a one-meter scotch tape

**Team:** Maximum of three (3 combination of G9 and G10 students) members in a team. No one other than those actually constructing towers will be permitted in the room (or contest area) during the contest.

#### **Materials:**

To be provided by the organizing committee:

- Measuring scale
- Scotch tape (1 meter or 1 roll)
- 2 sheets of bond paper, 8.5" x 13" 70 GMS

To be prepared by the competing teams:

- Ruler
- 2 Pair of scissors, cutter, and/or blade

#### **Rules:**

1. Each team will be given 2 sheets of long size bond paper, 70 GMS and one small roll of scotch tape as materials to be used for the construction of the tower.
2. Only one entry per team will be allowed for judging.
3. The sheet of paper may be cut into strips. There will be no limit as to the width of the paper strips. The strips will be reassembled into a tower as desired by the teams. Paper strips may be rolled, folded, or slit.
4. Scotch tape may be used to connect and put the parts of the tower together.
5. The scotch tape shall not be used to attach the paper tower to the floor or any other object.

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<sup>1</sup> Some of the game mechanics are patterned after the published mechanics of the Philippine Physics Olympics (2019 edition) of the Philippine Physics Society

6. No other forms of adhesives except those provided by the organizers may be used. The paper may not be soaked, painted or chemically treated to add rigidity.
7. The tower shall remain free-standing and self-supporting from the time the measurements start until measurements of all entries are finished. The paper towers shall remain standing during this entire period in order not to be disqualified. If a tower, after it has been measured collapses or falls before all other towers are measured, it shall be disqualified.
8. Height is determined by measuring the perpendicular distance from the highest point of the tower to the floor. Each team must complete the construction of each tower within an hour.
9. The three tallest towers will be declared First, Second and Third Place Winners, respectively.
10. The most creative standing tower will also be declared based on the following criteria:
  - Creativity and Innovation (40%):** Originality and inventiveness in approach and solution.
  - Teamwork and Collaboration (20%):** Demonstration of effective communication and cooperation within the team.
  - Height (40%)**

## **B. BRIDGE BUILDING**

**Objective:** To construct a bridge that can support the heaviest load.

**Team:** Maximum of three (3) members

### **Materials:**

To be prepared by the organizers:

- Weighing scale
- Vernier caliper or ruler with mm scale
- Heavy duty weight hanger
- Weights, a total of 20 kgs with one kg composed of weights of 100 g or smaller

To be prepared by the participants prior to the date of the competition.

- Popsicle bridge

### **Rules:**

1. The bridge shall be constructed by the participating team before the contest.
2. Popsicle sticks and sewing thread are the only materials to be used in the construction.
3. Only the thinnest cloth sewing thread will be used in tying or fastening the popsicle sticks of the bridge.
4. The total mass of the bridge and sewing thread shall not exceed 200 grams.
5. Teams can build any type of truss bridge with a horizontal driveway.
6. For the inside dimension of the bridge, it shall allow a 8.0 cm cube to pass through it.
7. The bridge shall allow a 40 cm wide by 2 cm high board to slide underneath perpendicular to the bridge's length without touching the bridge.
8. The bridge must be free-standing.



9. The road surface (level surface) shall have a minimum length of 40 cm.
10. The bridge design shall allow masses ("weights") to be hung at the center of the bridge. A rope will be wrapped around the center of the bridge within which will serve to hang weights.
11. Each team will be allowed two bridges which will be submitted to the organizers during date of the competition.
12. Bridges that do not meeting the requirement and restrictions will be automatically disqualified.

**Testing:**

13. The bridge shall be placed upon the ends of two tables with leveled surfaces approximately 30 cm apart.
14. Standard weights shall be added to the weight hanger attached to the bridge. The bridge shall be allowed to stand with the weights for 3 seconds and when it does not break, weights will be added again until the bridge breaks or shows any sign of structural failure.
15. The maximum load in grams supported by the bridge before cracking divided by the mass in grams of the bridge will determine the winners and the bridge which will give the biggest factor will be declared the winner.

**C. PAPER AIRPLANE**

**Objective:** To construct an airplane of largest range and longest time of flight.

**Team:** Maximum of three (3) members per team.

**Materials:**

To be prepared by the organizers:

- Long measuring tape
- Meter stick
- Three stop watches
- Long bond paper 70 GSM
- Cutter or pair of scissors

**Rules:**

1. There will be two separate rounds, one for distance and one for time of flight.
2. The same paper plane will be used for both rounds.
3. Each team will only be allowed on participating paper airplane.
4. For the construction of the paper airplane, each team will be given a long bond paper to be used to construct the paper airplane. The team has the option to cut the paper or just use half or a portion of the long bond in the construction of the paper airplane.
5. Construction time will be for 30 minutes.
6. Testing the airplane will be in the PSHSWVC gymnasium to minimize the effect of wind speed.
7. Launches will be executed by the competitor.
8. Launching shall be done from the assigned marker.
9. Each team will be allowed two launches in each round and the best score for the set will be the one recorded for purposes of the competition.
10. No practice flights will be allowed inside the basketball court while the competition is on-going.

**Scoring**

### **Distance Round**

11. The paper airplane shall be released and given only initial horizontal velocity 150 centimeters above the ground. Any violation to this rule shall be a ground for disqualification. Each team will be given 2 attempts.
12. Horizontal displacement will be measured from the launching point to the position of first impact with the ground of the paper airplane.
13. Impact with any object prior to hitting the ground will allow a repetition of a launch upon request by the contestant, otherwise such distance will be recorded as official entry to the competition.
14. The greatest distance achieved will be awarded 20 points with all other scores scaled proportionately to distance achieved to the nearest tenth of a point.

### **Time-of-Flight Round**

15. In this part of the contest, the airplane may be launched at any angle and manner and may not necessarily be at 150 centimeters above the ground.
16. Time from the flight of the airplane until first impact with the floor will be measured by three timers.
17. Impact with any object prior to hitting the ground will allow a repetition of a launch.
18. The average time of the timers to the nearest tenth of a second will be recorded.
19. Greatest duration will be assigned 20 points with all other scores scaled proportionately to the nearest tenth of a point.
20. Total Score is composed of the two (2) scores thus obtained. The top 3 highest scoring team will be declared 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> placers respectively.

### **D. EGG TRANSPORT**

**Objective:** To build a moving cart powered by a rubber band(s) or rubber strip(s), which can transport an egg to the greatest horizontal distance.

**Team:** Maximum of three (3) members per team.

#### **Materials:**

To be prepared by organizing committee:

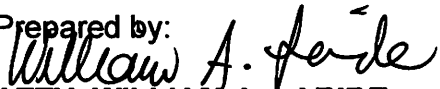
1. Balance/ weighing scale
2. Meter stick

#### **Rules:**

1. The participating team shall construct a "cart" or vehicle prior to the contest.
2. The cart or vehicle may be constructed of any inanimate material (may be recyclable or commercially available materials). No further work will be allowed after checking in the device during registration.
3. The rubber band(s) or strip(s) as a source of energy must be a part of the vehicle. Catapults or other launching devices external to the vehicle (or initially connected or attached to an object/point external to the vehicle) are not allowed.
4. Up to 5 rubber bands or strips may be used. A strip formed into a loop will be counted as two strips. The width of the band/strip should not exceed 5 mm.
5. The maximum mass of the vehicle or device should not exceed 100 grams.
6. The egg may be rolled or carried by the vehicle.
7. The egg should remain unbroken or undamaged during the roll or transport.

8. A starting line will be marked on the floor.
9. The vehicle must move on a lane 50 cm wide. If the vehicle strikes the boundary side or line in the course of the roll/transport, that point will be marked as the end of the roll.
10. If the egg separates from the vehicle, the point at which the egg separates will be marked as the end of the roll/transport.
11. Winners will be determined on the basis of horizontal distance moved (perpendicular to the starting line) during the roll/transport.
12. Each team will be allowed two trials, with the greater distance retained for purposes of the competition.

Prepared by:

  
ATTY. WILLIAM A. LARIDE

Project Proponent