

Republic of the Philippines  
**Department of Education**  
Region VII, Central Visayas  
**DIVISION OF CEBU PROVINCE**  
Sudlon, Lahug, Cebu City



July 16, 2014

Division Memorandum  
No. 330, s. 2014

**PHILIPPINE SCIENCE CENTRUM (PSC)**

To: Assistant Superintendents  
Education Supervisors / Coordinators  
District Supervisors / OICs  
Elementary and Secondary School Heads  
Heads, Private Elementary and Secondary Schools

1. Attached is a letter from Ms. May M. Pagsinohin, Executive Director, Philippine Foundation for Science and Technology ( PFST ).
2. The conduct of these activities for PHILIPPINE SCIENCE CENTRUM (PSC)-the first interactive science museum in the country are purely voluntary and non –compulsory in public and private schools in the Province of Cebu.
3. Wide dissemination of this Memorandum is desired.

  
ARDEN D. MONISIT, Ed.D.  
Schools Division Superintendent

Telephone Numbers:

Schools Division Superintendent:	(032) 255-6405
Asst. Schools Division Superintendent	(032) 414-7457
Accounting Section:	(032) 254-2632
Disbursing Section:	(032) 255-4401

Website: [www.depedcebuprovince.com](http://www.depedcebuprovince.com)  
E-mail Add : [depedcebuprovince@yahoo.com](mailto:depedcebuprovince@yahoo.com)



# Philippine Foundation for Science and Technology

June 26, 2014

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## DR. ARDEN D. MONISIT

Schools Division Superintendent  
Department of Education-Division of Cebu  
IPHO Bldg. Sudlon, Lahug, Cebu City

Dear Dr. Monisit:

Warm greetings from the Philippine Foundation for Science and Technology (PFST)!

Established in 1990 as the flagship program of the Philippine Foundation for Science and Technology (PFST), the Philippine Science Centrum (PSC), the first interactive science museum in the country, has been complementing the Department of Education's goal of upgrading the level of science education in the country as part of the "Education for All Program."

*"Science Centrum is a great tool in enhancing K-12 education in the country. Truly, Science is fun at Science Centrum"*

-Bro. Armin A. Luistro  
DepEd Secretary

Anchored on the DepEd's Basic Education Curriculum, the Philippine Science Centrum features interactive exhibits that enhance learning of basic science concepts and processes which are effective tools in rediscovering science in its essence. To date, the PSC has been visited by close to five million visitors. However, as a testament to our resolve to reach school children who, for reasons of geography, are not able to benefit from an educational visit to our Science Centrum in Marikina, PFST launched five sets of Traveling Exhibitions, (*Science Adventures, Sci-Fun Caravan, Science on the Move, Science Works! and Science Sparks!*), which have already visited 170 cities, municipalities, and provinces with an overwhelming participation of over 3 million people.

In a study, conducted by the University of the Philippines-National Institute for Science and Mathematics Education Development (UP-NISMED), it found out that *students who are exposed to interactive exhibits either at PSC or its traveling exhibitions become more interested in science when they go back to classrooms and learning takes place while interacting with the exhibits even for the shortest duration of one minute.*

Please note that Secretary Armin Luistro during his last visit validated that Philippine Science Centrum is an ideal venue complimentary to DepEd's spiraling method of K to 12 curriculum aimed at achieving a significant learning curve in the students, performance in science.

For practical reasons and to minimize the cost of field trip in going to Manila (average cost is Php. 1,000 per student), we are proposing that we bring one set of our traveling exhibits called **The Science Works!** to Cebu this **August 25 to October 10, 2014**.

We have served the province of Cebu including Cebu City with our traveling exhibitions in partnership with the Local Government Unit thru the initiative of former Vice Mayor Joy Augustus Young :

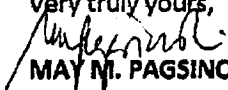
YEAR	VENUE	TRAVELING EXHIBITS	TOTAL NUMBER OF STUDENTS
2005	Talisay South Central Market, Cebu City	Sci Fun Caravan	20,753
2008	Cebu City Sports Center, Cebu City	Sci Fun Caravan	37,364
2009	Cebu City Sports Center, Cebu City	Science on the Move	34,000
2010	Cebu City Sports Center, Cebu City	Science Works!	46,792
2011	Cebu City Sports Center, Cebu City	Adventures in Discovery	56,702
2012	Cebu City Sports Center, Cebu City	Science Sparks!	33,542
2013	Cebu City Sports Center, Cebu City	Sci Fun Caravan	45,005

With the Department of Science and Technology (DOST)-Regional Office 7, we also had several exhibitions in Bohol, Negros Oriental, Lapu-Lapu and Mandaue.

As our partner, the logistical requirement that we need from your end is to identify a venue of 600 sqm. (preferably school gym) with parking space for the said activity. There will be a minimal learning investment fee of Php. 50.00 per ticket (for 40 exhibits), the cost of each is computed at Php. 1.25 only. Other than the venue, scheduling of the visit of students, and assignment of explainers, there will be no cost on the part of DepEd. All other expenses like shipping (Php. 200,000 per trip), trucking to/from PSC, Marikina, repair and maintenance cost, board and lodging of PFST technical team and other expenses will be charged to the gate receipts. Also, for every Php. 50.00 learning investment fee, DepEd-Cebu and participating schools will receive Php. 20.00 as part of the school support fund to implement DepEd Division of Cebu science-related projects.

We have attached here the proposal for your perusal. Thank you very much and looking forward to bringing **Science Works!-Traveling Science Centrum** to the Province of Cebu.

Very truly yours,

  
**MAY M. PAGSINOHIN**  
 Executive Director



# Philippine Foundation for Science and Technology

Philippine Science Centrum, E-Com Bldg., Riverbanks Center, Barangka, Marikina City  
Tel. Nos. (632) 942-5136 / 942-4137 Telefax (632) 942-5091 www.science-centrum.ph



## science WORKS!

Traveling Science Centrum (SWI-TSC)



**Implementing Agency:** Philippine Foundation for Science and Technology

**Partner Agency:** Department of Education-Division of Cebu

**Duration:** August 25 to October 10, 2014

### RATIONALE:

Filipino culture places a high premium on education. Access to good schools and training facilities therefore strongly desired. Government and private efforts are regularly directed towards inputs to education, such as classrooms, textbooks, and teachers. However, less traditional inputs such as academic support through museums and educational trips are often neglected.

A unique feature of exhibits at the Philippine Science Centrum is its interactivity. Science concepts and processes are taught not by looking at exhibits and reading accompanying explanations, but by handling them and performing activities that facilitate and reinforce learning. This, after all, is the best way to learn many science concepts.

*"PSC exhibits promote self-learning and visitors (students) learn something from their interaction with the exhibits even for a short period of 1 minute."*

- Assessment of the Impact of PSC Science Exhibits on the Learning Outcome of Elementary and Secondary School Students"

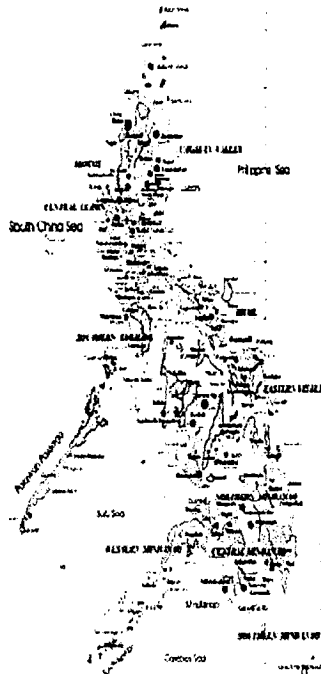
*"Science Centrum is a great tool in enhancing K-12 education in the country. Truly, Science is fun at Science Centrum"*

**-Bro. Armin A. Luistro**  
DepEd Secretary

Anchored on the DepEd's Basic Education Curriculum, the Philippine Science Centrum and its traveling component, the **Science Adventure (SA-TSC)**, **Sci-Fun Caravan (SFC-TSC)**, **Science On the Move (SOM)**, **Science Works! (SW)** and the **Science Sparks! (SS)** feature interactive exhibits that enhance learning of basic science concepts and processes which are effective tools in rediscovering science in its essence. To date, the PSC and its traveling exhibitions have been visited by over six million visitors.

A further service of the Philippine Science Centrum is its traveling exhibits. Through its traveling exhibits, the Science Centrum has reached communities that would not have benefited from its permanent exhibits in its Science Center/Museum in Metro Manila because of distance and cost constraints. To date, the PSC Traveling Science Centrum, has already visited 170 cities and provinces

When we unload and install **Science Works! -TSC** in Cebu, the students will come face to face with an educational yet exciting and stimulating learning facility. Such facility allows for S & T discovery, interaction, and manipulation of interactive exhibits in the atmosphere of fun, excitement and entertainment. Our aim is to excite young minds to learn more about science and appreciate how it works in order to improve the quality of life.



REGION	No. of Visitors	No. of Cities
Region 1	200,000	10
Region 2	200,000	10
Region 3	200,000	10
Region 4	200,000	10
Region 5	200,000	10
Region 6	200,000	10
Region 7	200,000	10
Region 8	200,000	10
Region 9	200,000	10
Region 10	200,000	10
Region 11	200,000	10
Region 12	200,000	10
ARMM	200,000	2
<b>TOTAL</b>	<b>2,000,000</b>	<b>170</b>

**THE EXHIBIT PACKAGE:**

The Philippine Foundation for Science and Technology (PFST) offers the **Science Works!** which includes:

**A. Exhibits and Other Features:**

1. Forty (40) interactive exhibits with a value of P2 million

The PFST will also take care of gallery lay-out and design for ready-for-printing brochures and other informational materials.

To ensure proper management of the **Science Works!**, PFST will provide 2 technical personnel for the over-all daily operations of the exhibition:

**B. Manpower:**

1. Two (2) PFST personnel
  - Administrator
  - Technical Supervisor

**C. Over-all Management of the SWI-Traveling Exhibition includes:**

1. Take charge of ingress/egress of exhibits;
2. Conduct training of local explainers/guides (to be identified by DepEd-Cebu )
3. Maintenance and repair of exhibits;
4. Guest relations and trafficking of visitors;
5. Collection/safekeeping of daily admission fees and accounting;
6. Supervision of all personnel directly involved in operations, including local explainers/guides, security and janitorial personnel.

**D. Operations Cost of SWI-TSC(from ingress, operation, egress):**

1. Travel allowances and transportation of PFST personnel;
2. Shipping and trucking of exhibits to/from Science Centrum, Marikina City to Cebu;
3. Insurance of PFST personnel and exhibits;
4. Exhibits and office supplies and materials;
5. Board and lodging of 2 PFST Technical staff;
6. Maintenance and repair cost;
7. Exhibition backdrop;
8. Printing of tickets

**RESPONSIBILITIES OF DEPED DIVISION OF CEBU:**

- A. Identify, make available and prepare venue with the following requirements:
  - 1. Exhibit space of at least **600sq.m.** (secured, well ventilated, accessible to the public, with ample parking space, good water supply and electricity — area requirements and specifications per exhibit, gallery design and lay-out to be identified upon ocular visit);
  - 2. Space for Office/Ticketing Booth:
    - i. At least two (2) office tables and chairs
  - 3. For the Briefing Area:
    - i. Sound system with microphone
- B. Assign five (5) explainers and guides( to be trained by PFST) and Finance Officer
- C. Assist PFST in setting-up exhibits as well as in other administrative matters that will be needed from time to time.
- D. Promotions:
  - 1. Issue DepEd Division Division memo based on DepEd Advisory No. 145 series of 2014, enjoining students to visit **Science Works!**;
  - 2. School to school campaign, promotion and announcement of the exhibition;
  - 3. Prepare schedules of schools daily (Monday to Friday at 150 students per hour, 8:00 a.m. – 5:00 p.m.);

**BENEFITS AND GAINS:**

- 1. Provides a rare opportunity for school children, teachers and school administrators, to improve performance in science via **Science Works!** learning experience.
- 2. An effective venue for learning K-12 science outside the classroom.

**MONETARY TERMS:****Sharing of Gross Admission Fees between the PFST and DepEd-Cebu:**

- 1. RENT-FREE
- 2. Entrance fee – **Php. 50.00** (general admission)
- 3. **PFST – Php. 30.00** share from gross income
- 4. **DepEd-Cebu Php. 20.00** share from gross income

5. For **PFST**, income will be utilized for maintenance, repair and development of new exhibits.
6. For **DepEd-Cebu** - income will be utilized for the implementation of science related projects (construction of science laboratories, classrooms or science libraries, repair of facilities, etc.)
7. Guaranteed number of visitors is **20,000**.
8. Teachers - **FREE**

#### **MAIN ATTRACTIONS:**

##### **A. Hands-on, Interactive Exhibit on Science**

- Exhibits are for touching, pushing, pulling, switching and cranking depicting S & T principles and concepts and presented in a fun and amusing manner. Exhibits include the following:

- |                        |                             |
|------------------------|-----------------------------|
| 1. Air Cannon          | 23. Hyperbolic Slot         |
| 2. Anti-Gravity Mirror | 24. Laser Harp              |
| 3. Archimedes Screw    | 25. Look's Who's Talking    |
| 4. Artificial Gravity  | 26. Magnetic Chain Reaction |
| 5. Bernoulli Blower    | 27. Moire Pattern           |
| 6. Bernoulli Levitator | 28. Oscylinderscope         |
| 7. Cartesian Diver     | 29. Particle Accelerator    |
| 8. Caternary Arch      | 30. Pedal Power             |
| 9. Changing Color      | 31. Reaction Timer          |
| 10. Cloud Rings        | 32. Rolling Uphill          |
| 11. Colored Shadows    | 33. Rope Puzzle             |
| 12. Cycloid Racer      | 34. Simple Generator        |
| 13. Cyclone            | 35. Solar Car               |
| 14. Elliptical Pool    | 36. Stroboscope             |
| 15. Flashing Pendulum  | 37. Van De Graaff Generator |
| 16. Following Faces    | 38. Wall Of Illusion        |
| 17. Free the chain     |                             |
| 18. Frozen Shadows     | 39. Water Standing On Air   |
| 19. Gas Model          | 40. Wind Power              |
| 20. Gravity Well       | 41. Zoetrope                |
| 21. Head On A Platter  |                             |
| 22. Human Conductor    |                             |



## Line Item Budget and Projected Income

Projected Income – 20,000pax @ P50.00 = P 1,000,000.00

PFST (Php 30.00)		DEPED-CEBU (Php 20.00)	
<b>Gross Income</b>	<b>Php. 600,000.00</b>	<b>Gross Income</b>	<b>Php.400,000.00</b>
<b>Expenses:</b>		<b>Expenses:</b>	
Shipment and trucking services (approx.)	180,000.00	Promotions & Marketing (including food for opening Ceremonies)	15,000.00
Salaries & Travel Allow.	42,000.00	Honoraria of DepEd Working Committee	30,000.00
Exhibit Maintenance & Repair	40,000.00	Cost of Venue/Utilities	<u>30,000.00</u>
Board and Lodging of 2 PFST Staff	10,000.00		Php. 75,000.00
Printing of Tickets	15,000.00	<b>Net Income</b>	<b><u>P325,000.00</u></b>
Transportation (including ocular visit)	10,000.00		
Others ( cost of mtngs, communication, Scientific tokens, etc.)	<u>15,000.00</u> Php. 312,000.00		
<b>Net Income</b>	<b><u>Php. 288,000.00</u></b>		

DepEd Advisory No. 145 s. 2014

March 28, 2014

In compliance with DepEd Order No. 8, s. 2013  
this Advisory is issued for the information of DepEd officials,  
personnel/staff, as well as the concerned public.  
(Visit [www.deped.gov.ph](http://www.deped.gov.ph))

**PHILIPPINE FOUNDATION FOR SCIENCE AND TECHNOLOGY (PFST)  
PROGRAMS AND PROJECTS**

The Philippine Foundation for Science and Technology (PFST) has designed the following *Programs and Projects* to promote Science and Technology consciousness among the youth and various sectors of society:

1. *Philippine Science Centrum (PSC)*. This premier learning center which unfolds new exciting process of science-learning system through the use of integrative and interactive exhibits is located at E-Com Building, Riverbanks Center, Barangka, Marikina City, and is open from Mondays to Saturdays, 8:00 a.m. to 5:00 p.m.
2. *Philippine Science Centrum Traveling Exhibitions* such as (a) *Adventures in Discovery (AID)*, (b) *Sol-Fun Caravan*, (c) *Science on the Move*, (d) *Science Works!* and (e) *Science Sparks!* These are traveling science exhibitions featuring replicas of PSC's popular interactive exhibits which primarily aims to reach the various individuals, communities, academic institutions and organizations in the countryside.
3. *Trainings, Seminars and Workshops for Teachers*. These activities are for science teachers, either in the elementary or secondary level, introducing the interactive and integrative approaches/strategies in teaching science and science related subjects.
  - a. *Hands-on-Minds on Microscale Chemistry Workshop*. This is a one-two days (live-in or live-out) seminar-workshop that offers opportunity to learn effective chemistry teaching strategies using the "Laboratory in A Box" (LaB). This LaB contains a manual of activities/experiments apparatuses which are reusable, and chemicals which are not hazardous to teachers, students/pupils and environment.
  - b. *Teachers Science Camp*. This is a three-day (live-in or live-out) seminar-workshop on *Teaching Science Through Interactive and Integrative Approaches*, designed for science teachers. It comprises of modules entitled: (1) Teaching Device Based on Science Centrum Exhibits; (2) Teaching Science Thru Any Create Your Own Science Books; (3) Test Construction and (4) Interactive Learning System: Concept and Tools.
4. *Science Centrum Fabrication*. This is an exhibit fabrication unit of PFST for interactive exhibits with technical capability of developing, prototyping, fabricating and/or manufacturing interactive exhibits and other paraphernalia for promotion and development of science and technology.

More information may be inquired from:

The Philippine Foundation for Science and Technology (PFST)  
Philippine Science Centrum, E-Com Building  
Riverbanks Center, Barangka, Marikina City  
Telephone Nos.: (02) 942-4137; (02) 942-5136  
Telefax No.: (02) 942-5091  
Mobile Phone Nos.: 0905-259-7111; 0917-3526-5356  
Email Addresses: [pfst@science-centrum.ph](mailto:pfst@science-centrum.ph); [pfst\\_psc@yahoo.com](mailto:pfst_psc@yahoo.com); [info@pfst.org.ph](mailto:info@pfst.org.ph)  
Website Addresses: [www.pfst.org.ph](http://www.pfst.org.ph); [www.science-centrum.ph](http://www.science-centrum.ph)