



REPUBLIKA NG PILIPINAS  
REPUBLIC OF THE PHILIPPINES  
KAGAWARAN NG EDUKASYON, KULTURA AT ISPORTS  
DEPARTMENT OF EDUCATION, CULTURE AND SPORTS  
DECS Complex, Marikina Avenue  
Pasig City, Philippines



Sama-Sama  
sa DECS

Tanggapan ng Kalihim  
Office of the Secretary

July 14, 2000

**DECS MEMORANDUM**

No. 301, s. 2000

**PHILIPPINE MATHEMATICAL OLYMPIAD (PMO) FOR SY 2000-2001**

To: Bureau Directors  
Regional Directors  
Schools Division/City Superintendents  
Regional Science High Schools Principals  
Private Elementary and Secondary Schools Principals

1. The Department of Science and Technology (DOST), through the Science Education Institute (SEI) and the Mathematical Society of the Philippines (MSP), in cooperation with the Department of Education, Culture and Sports (DECS), shall conduct the Philippine Mathematical Olympiad (PMO) this SY 2000-2001.

<u>Stage</u>	<u>Date</u>
Divisional	September 8, 2000
Regional	December 5-7, 2000
National	March 5-7, 2001

2. Transportation, per diems, food and other expenses of participants in the PMO at the division and regional stages, shall be charged against local or school funds, subject to its availability and the usual accounting and auditing rules and regulations. Expenses of official participants at the national level competition shall be borne by the DOST-SEI.

3. Regional and division science and mathematics supervisors, as well as other students, are enjoined to extend cooperation and support to the Committees at the various stages of the PMO. Enclosed are other details concerning the PMO and a copy of the participation form.

4. For inquiries, contact the National Secretariat at the Department of Mathematics, University of the Philippines, Diliman, Quezon City with tel. nos. 920-5301, local 7714/928-04-39, fax nos. 9288321/920-1009, e-mail address: [joey@math01.cs.upd.edu.ph](mailto:joey@math01.cs.upd.edu.ph) or the Scholarship and Training Division, Science Education Institute, Bicutan, Taguig, Metro Manila with tel. nos. 839-0083 or DOST trunkline 837-2071 loc. 2382 and telefax no. 837-1333/837-1924 or e-mail address: [sei.dost@info.com.ph](mailto:sei.dost@info.com.ph) at [webmaster@sei.dost.gov.ph](mailto:webmaster@sei.dost.gov.ph). For more information of the abovementioned youth science project, please take a look at the website of SEI at [www.sei.dost.gov.ph](http://www.sei.dost.gov.ph).

5. Immediate dissemination of this Memorandum is desired.

*Andrew Gonzalez*  
ANDREW GONZALEZ, FSC  
Secretary

**Encls.:**

As stated

**References:**

DECS Memorandums: Nos. 362, s. 1999 and 266, s. 1998

Allotment: 1-2—(D.O. 50-97)

To be indicated in the Perpetual Index  
under the following subjects:

CONTESTS  
STUDENTS



2000-2001 PHILIPPINE MATHEMATICAL OLYMPIAD  
 Stage Competition

PARTICIPATION FORM (Form 1)

**INSTRUCTION:**

This form must be accomplished and submitted on or before **30 JULY 2000** to the **Office of the Project Director - PMO 2000-2001**, UP-Institute for Science and Mathematics Education Development (UPISMED) (for NCR applicants) or the **nearest DOST Regional Office** (for provincial applicants). This form may be reproduced/photocopied for dissemination. **IMPORTANT:** Please supply complete information and type or print clearly.

DIVISION : \_\_\_\_\_  
 REGION: \_\_\_\_\_

**I. PERSONAL DATA OF APPLICANT**

1. Name (please print, Last, First, Middle) \_\_\_\_\_
2. Citizenship \_\_\_\_\_ 3. Sex \_\_\_\_\_ 4. Age \_\_\_\_\_
5. Birthdate \_\_\_\_\_ 6. Birthplace \_\_\_\_\_
7. Permanent Home Address \_\_\_\_\_  
 Telephone No. \_\_\_\_\_ Fax No. \_\_\_\_\_
8. Name of High School \_\_\_\_\_
9. Complete Address of School \_\_\_\_\_  
 Telephone No. \_\_\_\_\_ Fax No. \_\_\_\_\_
10. School Year Level \_\_\_\_\_ Previous Math Grade \_\_\_\_\_
11. Classification of High School (please check)  
 Public  Private Sectararian  
 Science High School  Private Non-sectarian  
 State University/College
12. Name of Father \_\_\_\_\_ Occupation \_\_\_\_\_
13. Name of Mother \_\_\_\_\_ Occupation \_\_\_\_\_
14. Scholastic/Extra Curricular Honors Received:  
 \_\_\_\_\_  
 \_\_\_\_\_

I certify that all answers given above are true and correct to the best of my knowledge.

\_\_\_\_\_  
 Parent/Guardian Signature of Applicant

**II. MATHEMATICS TRAINER**

1. Name (please print) \_\_\_\_\_
2. Course/s Finished \_\_\_\_\_
3. School/s Attended \_\_\_\_\_
4. Number of years of Mathematics teaching experience \_\_\_\_\_
5. Honors/Scholarships received \_\_\_\_\_
6. If non-teaching, present vocation \_\_\_\_\_
7. Membership in professional organization/s \_\_\_\_\_

ATTESTED BY:

\_\_\_\_\_  
 Printed Name & Signature of School Principal Signature of Mathematics Trainer

**PMO Form 1.1 CERTIFICATION OF PARTICIPATION**

This is to certify that \_\_\_\_\_  
(Name of Participant)  
of \_\_\_\_\_ is in \_\_\_\_\_ year level  
(Name of School)  
and has a final grade in Mathematics of \_\_\_\_\_ for the SY 1999-2000.

ATTESTED BY:

\_\_\_\_\_  
Printed Name & Signature of School Principal      Signature of Mathematics Trainor

**PMO Form 1.2 CERTIFICATE OF PARENTAL CONSENT**

We \_\_\_\_\_  
(Name of Participant's Parents/Guardian)  
who are legal parents/guardian of \_\_\_\_\_  
(Name of Participant)  
with residence at \_\_\_\_\_ do hereby  
certify that we give our full consent for him/her to participate in the **2000-2001  
PHILIPPINE MATHEMATICAL OLYMPIAD** \_\_\_\_\_ Stage Competition under  
the following conditions:

1. Our child be chaperoned/escorted by either the DOST Regional Official, his trainor or a Science supervisor of DECS.
2. The chaperons will see to the safety, behavior and physical upkeep of our child as far as humanly possible.
3. Considering the above conditions and the benefits that our child will derive from his/her participation in this activity, and realizing that every precaution will be undertaken by the chaperon and your office, we, the undersigned parents/guardian of the above named participant do hereby give our consent for him/her to participate in the **2000-2001 PHILIPPINE MATHEMATICAL OLYMPIAD**.

\_\_\_\_\_  
Printed Name & Signature of School Principal      Signature of Mathematics Trainor

**PMO Form 1.3 MEDICAL CERTIFICATE**

Date \_\_\_\_\_

This is to certify that \_\_\_\_\_  
(Name of Participant)  
of \_\_\_\_\_  
(Name and Address of School)

has undergone physical examination and was found to be physically and mentally fit to participate in the \_\_\_\_\_ Stage Competition of the **2000-2001 PHILIPPINE MATHEMATICAL OLYMPIAD**.

REMARKS: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Name and Signature of Medical Officer

Principal (Certificate of Participation, Form I.1). The applicant should also obtain a Certificate of Parental Consent (Form I.2) in the event that he/she will need to travel. All accomplished application forms shall be sent to the PMO-RCC of the respective regions and received on or before 30 July 2000.

◆ Where to submit application forms


For NCR applicants:

**DR. JOSE MARIA F. BALMACEDA**  
Project Director, PMO  
Philippine Mathematical Olympiad Secretariat  
Department of Mathematics  
University of the Philippines, Diliman, Quezon City  
Tel Nos.: 920-1009/928-0439/920-5301 loc. 7714  
Fax No.: 928-8321/920-1009  
Email address: joesy@math01.cs.upd.edu.ph

**DR. ESTER B. OGENA**  
Director  
Science Education Institute  
3/F PIRI Bldg., Bicutan, Taguig, Metro Manila  
Tel Nos.: 839-00-83 or 837-20-71 local 2382  
Fax Nos.: 837-13-33 or 837-19-24  
Email address: sei.dost@info.com.ph  
webmaster@sei.dost.gov.ph  
URL: [www.sei.dost.gov.ph](http://www.sei.dost.gov.ph)

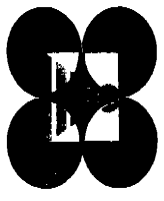
For provincial applicants:  
Participation forms at the nearest **DOST** Regional Office or Provincial S&T Center

DEADLINE OF SUBMISSION OF PMO PARTICIPATION FORM

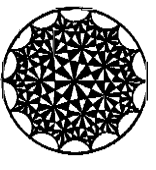
31 July 2000  
  
ESTER B. OGENA  
Director  
Science Education Institute

SPONSORS

The PMO is jointly sponsored by:



Science Education Institute-Department of Science and Technology (SEI-DOST);



Mathematical Society of the Philippines (MSP)



Department of Education, Culture and Sports



2000-2001

**General Guidelines & Scheme of Conduct**  
(For Participants)

## WHAT IS PMO?

The Philippine Mathematical Olympiad (PMO) is a friendly competition among mathematically inclined secondary school students.

## OBJECTIVES

PMO was created to:

- ◆ Stimulate the improvement of mathematics education in the country by awakening greater interest in and appreciation of mathematics among students and teachers; and gaining insights into the levels of mathematics learning;
- ◆ Identify and motivate the mathematically gifted;
- ◆ Provide a vehicle for the professional growth of teachers; and
- ◆ Encourage the involvement of public and private sectors in the concerted promotion and development of mathematics education.

## GENERAL GUIDELINES AND SCHEME OF CONDUCT

To carry out the Olympiad, two (2) sets of working groups have been constituted:

- ◆ The PMO National Technical Committee (PMO-NTC) with office at the Department of Mathematics, UP-Diliman, Quezon City and whose members include representatives from SEI, DECS and MSP.

- ◆ The PMO Regional Coordinating Committee (PMO-RCC), one (1) per region, with offices at the DOST Regional Offices, and whose members include one (1) representative each from DOST, DECS and MSP. The MSP representative will be appointed by the PMO-NTC. Representatives from other sectors, like business and industry, government and civic organizations, may be invited by the representatives of DOST and DECS. The total membership shall not exceed five (5) with the DOST representative as chair of the PMO-RCC.

The PMO competitions shall be carried out in three (3) stages:

- ◆ **Divisional Stage**  
**08 September 2000**
  - ◆ Year Levels I, II, III & IV
- ◆ **Regional Stage**  
**05-07 December 2000**
  - ◆ Year Levels III & IV
    - Individual Competition
    - Team Competition
- ◆ **National Stage**  
**05-07 March 2001**
  - ◆ Year Levels III & IV
    - Individual Competition
    - Team Competition

## PARTICIPANTS' QUALIFICATIONS

### Divisional Stage

An individual from any private or public secondary school including state colleges and universities with a final grade of at least 85% (or its equivalent) in mathematics in the previous school year may apply.

All interested high school students who are qualified must join the nearest Divisional Competition. It is open to all year levels I, II, III and IV. At this stage, for year levels III and IV, schools are encouraged to

send at least three (3) contestants in order to qualify for the regional and national school team competitions.

Students who would wish to work above their regular levels may be allowed to participate in a mathematics competition level higher than their registered year level, upon the certification of the principal or mathematics teacher (e.g., a second year student may take a third year or fourth year mathematics examination).

### Regional Stage (New Rules)

The Regional Competition shall be for year levels III and IV only.

The procedure for identifying the contestants for the Regional Stage shall be as follows:

#### ◆ Individual Competition

An overall ranking by year level of the scores of all Certificate of Achievement awardees (students whose scores are twenty (20) or above) of all the divisions of a region shall be made by the PMO-RCC. The top fifteen (15) awardees from among all divisions of a region shall qualify for the Regional Competition.

Additionally, if a division is not represented among the top fifteen (15) awardees, then the Certificate of Achievement awardee/s of that division shall also be included among the regional contestants.

Ties shall be broken by the PMO-NTC based on test scores.

#### ◆ Team Competition

A school team shall consist of the three (3) highest ranking contestants of a school which participates in the Divisional Competition. If a school does not have at least three (3) contestants, it cannot form a team.

The school team score is the total score of the top three (3) participants of the school. An overall ranking by year level of all school teams' scores of all divisions of a region shall be made. The top ten (10) teams shall qualify for the Regional Competition, provided the team score is at least 50% of the total score of the tests taken.

Additionally, if a division is not represented among the top ten (10) teams, then the top school team of that division shall also be included among the team contestants for the regional competition, provided the team meets the 50% score requirement.

#### **National Stage (New Rules)**

The National Competition shall be for year levels III and IV only.

In both individual and team categories, there will be two (2) phases: Pre-Final Phase and Final Phase.

#### ♦ **Individual Competition**

For each year level, contestants in all regional competitions from all regions shall be ranked. The national qualifiers shall be the top twenty five (25) highest ranking individuals from all regions. They shall compete in the National Competition-Pre-Final Phase. Whoever will emerge as the top ten (10) individual finalists will then qualify for the Grand Finals. They shall vie for the first, second, third, fourth and fifth places.

#### ♦ **Team Competition**

For each year level, team contestants in the regional competition from each area (Mindanao, Visayas, Luzon and NCR) shall be ranked. The national qualifiers shall be the five (5) highest ranking teams from each area and all other teams in the top ten (10) overall ranking. They shall compete in the National Competition-Pre-Final Phase. Whoever will emerge as the top five (5) team finalists will then compete in the Grand Final Phase. They shall vie for the first, second, third, fourth, and fifth places.

All competitions are conducted within certain periods preset by the PMO-NTC.

#### **BOARD OF JUDGES**

There shall be a Board of Judges, one (1) for each region for the Regional Competition and a Board of Judges for the National Competition.

#### ♦ **Judge's Qualifications:**

- > A college/university professor of mathematics, statistics or related fields, or an expert in mathematics from industry;
- > Not related up to the second degree of consanguinity or affinity to any PMO participant; and
- > Not teaching in any high school.

#### ♦ **Regional Stage**

Each Regional Board of Judges shall be composed of three (3) members, one (1) to two (2) of which including the chair shall be appointed by the PMO-NTC. The other member/s may be recommended by the respective ROCs and approved by the NTC.

#### ♦ **National Stage**

For the National Competition, the judges shall be selected by the PMO-NTC.

#### **SCOPE AND FORMAT OF THE PMO TEST**

#### **Divisional Stage**

#### ♦ **Test Coverage**

The DECS-SEDP curriculum shall be the basis of the coverage.

- > Year Level I Elementary school mathematics
- > Year Level II First year mathematics

- > Year Level III First and second year mathematics
- > Year level IV First, second, and third year mathematics

#### ♦ **Test Type**

The contestants shall be made to answer forty (40) questions, of multiple choice type in a written examination for 2.5 hours.

#### ♦ **Test Administration**

One (1) Test Administrator and one (1) proctor shall be designated by the PMO-ROC for each testing room. One (1) proctor will be added for each additional set of 50 contestants in the same room.

#### ♦ **Test Venue**

To be decided by the PMO-NTC for NCR and PMO-ROC for the regions.

#### **Regional Stage**

#### ♦ **Test Coverage**

The DECS-SEDP curriculum shall be the basis of the coverage.

- > Year Level III First and second year math and geometry up to triangle congruence
- > Year Level IV-First, second and third year math and higher algebra up to quadratic functions

#### ♦ **Test Type**

#### ♦ **Individual Competition**

The contestants shall be made to answer five (5) open-ended problems needing full solutions for 2.5 hours.

#### ♦ **Team Competition**

The questions shall be given orally in a public presentation. Students shall be provided with copies of the test questions and papers for scribbling/ computing their final answers.

All teams shall be made to answer 30 math problems within a specified time for each item. Points shall be scored for correct answers.

◆ **Test Venue**

To be recommended by the PMO-RCC and to be decided by the PMO-NTC.

**National Stage**

◆ **Test Coverage**

The DECS SEDP curriculum shall be the basis of the coverage.

> Year Level III - First, second and third year mathematics

> Year Level IV - All high school mathematics

◆ **Test Type**

> **Individual Competition**

The same as in the regional stage.

> **Team Competition**

The same as in the regional stage.

◆ **Test Venue**

To be decided by the PMO-NTC

**HOW ARE THE WINNERS SELECTED ?**

◆ **Divisional Stage**

At the Divisional Stage, each correct answer is rated one (1) point. Scores shall be the total points

earned. All contestants who obtain scores of 50% of the perfect score or better shall be awarded Certificates of Achievement.

◆ **Regional and National Stage**

For the Individual Competition at the Regional and National Stages, scoring system shall be predetermined by the PMO-NTC.

For the Team Competition at the Regional and National Stages, answers shall be judged as correct or incorrect; no points shall be earned for partially correct answers.

**WHAT PRIZES AWAIT THE WINNERS ?**

◆ **Divisional Stage**

Certificate of Achievement shall be awarded to individuals whose scores are 20 (cut-off score) or above. Division awardees and regional qualifiers shall be announced by the PMO-RCC within three (3) weeks after the division test.

◆ **Regional Stage**

> **Individual Competition**

For each region, the top three (3) individuals for each year level, together with their coaches and schools, shall receive awards.

> **Team Competition**

For each region, the top three (3) schools for each year level, together with their coaches and schools, shall receive awards.

Regional individual and team winners shall be announced during the awarding ceremonies following the team competition.

◆ **National Stage**

◆ **Individual Competition**

> **Pre-Finals Phase**

All pre-finalists shall receive Certificates of Merit.

> **Grand Finals Phase**

◆ **Individual Competition**

The top three (3) individuals for each year level shall be given cash awards and trophies. Their coaches shall be given cash awards and plaques while their schools shall be given plaques. The fourth and fifth placers shall likewise receive cash awards.

◆ **Team Competition**

The top three (3) teams for each year level shall be given awards and medals. Their coaches shall be given cash awards and plaques while their schools shall be given plaques. The fourth and fifth placers shall likewise receive cash awards.

National individual and team winners shall be announced during the awarding ceremony following the team competition.

Further details of the conduct of the different levels of competition are provided in other pages. Instructions to Test Administrators, Division Stage Competition and Instructions to Testing Personnel, Regional/ National Competitions.

**HOW, WHERE TO APPLY AND SUBMIT APPLICATION FORMS**

◆ **How to apply**

An applicant must fill out the official application form (PMO Form I) with the assistance of his/her mathematics coach and his/her application must be endorsed by the School