Republic of the Philippines
Department of Education
Region VII, Central Visayas
DIVISION OF NEGROS ORIENTAL
Dumaguete City

January 7, 2016

**DIVISION MEMORANDUM**
**No. 14 s. 2016**

**DIVISION LEVEL MATHEMATICS COMPETITIONS**

**TO** : CHIEFS, CID AND SGOD
EDUCATION PROGRAM SUPERVISORS
EDUCATION PROGRAM SPECIALISTS
DISTRICT SUPERVISORS/DISTRICT-IN-CHARGE
ELEMENTARY AND SECONDARY SCHOOL HEADS
DISTRICT MATHEMATICS CDORDINATORS
All Others Concern

---

1. Please be informed that public and private elementary and secondary Mathematics Competitions will be done on January 22, 2015, 8:00am -5:00pm at Negros Oriental High School (NOHS).

2. The activity aims to:
   a. awaken greater interest in Mathematics among school learners;
   b. encourage them to strive for excellence in Mathematics;
   c. develop the values of hardwork, perseverance, honesty, teamwork and sportsmanship;
   d. develop learners to become problem solvers and critical thinkers.

3. Contest categories are the following:

   Elementary Category: DAMATH COMPETITION

   Secondary Category:

   a. DAMATH Competition
   b. Tesselations Making Contest
   c. Tower of Hanoi
   d. Rubiks Cube Competition
   e. Math Jingle Contest
   f. Modulo Art Contest
   g. Mathsayaw Contest

08 JAN 2016

4. Contest administrators are required to orient the members and the board of judges before the conduct of the contest.

5. Coaches are directed to secure parent's consent before a pupil/student could participate in the contest.

6. Education Program Supervisors, District Supervisors/District-in-Charge, District Math Coordinators and School Heads concerned are expected to be present during the competitions.

7. Attached are list of working committees, guidelines and schedule of different contest venues.

8. Registration fee is two hundred pesos (php 200) per participant ( coach, contestant, and Math coordinator).

9. Two snacks and one lunch will be served.

10. This Memorandum serves as **Travel Order.**

11. Travelling expenses, registration fee and other incidental expenses relative to the conduct of the activity shall be charged against School MOOE, MTAP, PTA, LGU or any other available funds subject to the usual accounting and auditing rules and regulations.

12. For guidance and compliance.

13. Widest dissemination of this Memorandum is desired.

**SALUSTIANO T. JIMENEZ, CESO VI**
Schools Division Superintendent

c

Republic of the Philippines
Department of Education
Central Visayas
Division of Negros Oriental

**ELEMENTARY & SECONDARY MATHEMATICS COMPETITIONS**
**January 22, 2016, NOHS**
**CONTEST VENUES AND IN-CHARGE**

| CONTEST | CONTESTANTS | IN-CHARGE | VENUE |
|---|---|---|---|
| MODULO ART | 1- Grade 7 : Square Grid Reflected<br>1- Grade 8 : Circle Grid Reflected<br>1 – Grade 9 : Polygonal Grid Reflected | Mrs. Leonila Marino | GSP Hall |
| TESSELLATION | 1 – Grade 10 (Translated) | Mrs. Vrendie P. Sygaco | GSP Hall |
| MATH JINGLE | 8 to 12 – any Grade level | Ms. Frances Pinili | NOHS Gym |
| MATHSAYAW | 6-15 – any Grade level | Mrs. Melba Tumarong | NOHS Gym |
| DAMATH<br><br>(Secondary) | 1 – Grade 7 : Integer damath<br>1- Grade 8 : Rational Damath<br>1 – Grade 9 : Radical Damath<br>1 – Grade 10 : Polynomial Damath | Mrs. Maricel Tropezado | Third Floor, Division Office |
| DAMATH (Elementary) | | Mr. Jesus Alap-ap | Third Floor, Division Office |
| TOWER OF HANOI | (any grade level) | Mr. Antonio Jamon | Third Floor, Division Office |
| RUBIKS CUBE | (any grade level) | Mr. Armando Coco | BSP |

INCHARGE – facilitate the conduct of the assigned contest

- Read and explain guidelines before contest begins
- Assign timer, recorder, watcher and other manpower needed for the contest
- Coordinate with Mr. Arnold Jungco, Principal IV, NOHS for the preparations of the venue
- Do other related functions

**WORKING COMMITTEES**

| | | | |
|---|---|---|---|
| PROGRAM & INVITATION<br><br>Ms. Karla Panesa<br>Ms. Iryll Macahig<br>Mr. Leo Gaso, | | TABULATION | Ms. Melba Tumarong<br>Ms. Chastine Carale |
| | | USHERETTES | Ms. Juliet A. Tuala<br>OJTs:<br>Ms. Myril Garol<br>Ms. Jessa Mae Saraña<br>Ms. Ana Mae Anque<br>Ms. Angelica Villasan |
| DECORATION | Mr. Arnold Jungco<br>Mr. Romeo Montano<br>Ms. Joy Tano<br>Mr. Frances Austero | AFTER CARE | Mr. Jesus Alap-ap<br>Male District Math Coordinators |
| PHYSICAL ARRANGEMENT & CLEANLINESS OF NOHS GYM | Mr. Mr. Marcelo Sastrillo<br>NOHS Selected Teachers | SECURITY | Security Guards, NOHS |
| REGISTRATION/SECRETARIAT | Ms. Marcelita :Mercado<br>Ms. Jocelyn Librando<br>Ms. Juvilumie Vailoces | SOUNDS | Mr. Vicente Villegas<br>Mr. Rolando Abrasado |
| BUDGET/FINANCE/AWARDS | Ms. Maribeth Rodriguez<br>Ms. Nida Suasin<br>Mr. Teofanes Asenas<br>Ms Vrendie Sygaco<br>Ms. Ladybeth Tangilan | FOOD/ACCOMMODATION | Ms. Diocera Palafox<br>Ms. Ann Tumaroy<br>Female District Math Coordinators |
| LEIS/TOKENS | Mr. Dan Alar<br>Arlene Pepito<br>Fe Balos | DOCUMENTATION | Ms. Teresita Bubole<br>Mr. Dariel Cacaldo |

# MATHEMATICS COMPETITION

## GUIDELINES

### 1. DAMATH COMPETITION

*DAMATH, a patent-pending mathematical board game invented by five-time national awardee* ***Jesus L. Huenda,*** *is coined from the papular checkerboard game of* ***dama*** *(or lady in Spanish) and Mathematics. It started in Sorsagon, Philippines, and its popularity spread quickly and resulted in the first notional DAMTH campetitian held at Legaspi City in 1980.*

**SCI-DAMATHS MANUAL (Enclosure B to DECS Memorandum No. 361 s. 1999)**

1. Set the starting positions of the chips.
2. After the starting positions of the chips have been set, the first player is determined by drawing lots.
3. A chip is allowed to move diagonally forward only to an adjoining vacant square.
4. A chip has to take the opponent's chip diagonally forward or backward, thus "pass" is not allowed. Mathematical operations (+, -, x, ÷) depending the vacant square's operation symbol where the "taker" chip lands by jumping over the 'taken chip' (the latter chip has to be removed from the board after performing the indicated mathematical operation and recording the same on the score sheet)
5. In taking more than one chip, the 'taker' chip is always the addend, minuend, multiplicand, or dividend as the case may be.
6. In taking a chip or more than one chip, the dama rules on DAMA and MAYOR DALAWA OR TATLO, MAYOR TATLO OVER DALAWA, MAYOR DAMA, and MAYOR DALAWA OR TATLO OVER DAMA prevail.
7. A chip is declared DAMA upon reaching terminally on the following designated squares:
   For red chips : (0,7) (2, 7) (4, 7) (6, 7)
   For blue chips : (4, 0) (3, 0) (5, 0) (7, 0)
8. A DAMA chip is allowed to take a chip or more than one chip, or move to any unoccupied square along its diagonal path. Moreover, a dama's score is doubled in taking a chip or chips and quadrupled if it takes the opponent's dama chip. Similarly, an ordinary chip's score is doubled if it takes a dama chip.
9. A 'move' [e.g., 2 (6, 3)] is good only at the most for one (1) minute including its corresponding entries in the score sheet, while the game's duration is twenty (20) minutes.
10. The game ends when any of the following occur:
    - If no show of one player is declared after ten(10) minutes.
    - Repetitive moves of any or both player.
    - A player's chip is comered.
    - A player has no more chip to move.
    - The 20 minute game duration has ended
11. The remaining chips have to be added to the respective players' total scores.
12. The player with the greater total score is declared the winner for which he/she is entitled one(1) point in the tally sheet/board. One-half (0.5) is given in to each player in case of a draw.
13. Only one score sheet is allowed to be accomplished alternatively by the two players whereby incorrect entries shall be their responsibility. In case of incorrect entries in the score sheet, a player has to immediately call the attention of the competition facilitator by raising his/her hand, that is, after stopping the timekeeping device. As determined by the said facilitator, the appropriate corrections shall be made by the erring player in as much as the facilitator's decision is final and unappealable.
14. With the end view of making this innovative activity globally competitive, effective SY 1999-2000 the Chess Swiss System will be adopted in the manner of conducting in the highest tradition, the national level of Sci-Damaths competition. This tradition is in line also with this Department's advocacy of the culture of excellence in Mathematics and Science.
15. In view of the Department's meagre resources, networking with community participation is encouraged such as the "Adopt A School Program" in sponsoring the travel expenses of pupil/student participants (e.g. local empowerment through finance resource mobilization subject to the usual local trust funds accounting and regulations per MOA between donor and done).
16. As a process re-engineering scheme of this innovative project, the Sci-DaMaths contests categories are hereby as follows:

| | **Mathematics** | **Science** |
|---|---|---|
| *Elementary Categaries* | | |
| Grades I-II | Counting DaMaths | |
| Grades III-IV | Whole DaMaths | Water Patrol Sci-Dama |
| Grades V-VI | Fraction DaMaths | Power Patrol Sci-Dama |
| | | |

| | | |
|---|---|---|
| First Year | Integer DaMaths | Electro Sci-Dama |
| Second Year | Rational DaMaths | Sci-Notation Dama |
| Third Year | Radical DaMaths | THI Sci-Dama |
| Fourth Year | Polynomial DaMaths | Thermo Sci-Dama |
| *Teacher Category* | | |
| | Binary DaMaths | Thermo Sci-Dama |
| *Parent Category* | | |
| | Integer DaMaths | Power Patrol Sci-Dama |

**Each congressional district must prepare a TOURNAMENT FORMAT before the competition is held.**

(Sample –First Congressional District (Secondary)
: Canlaon, La Libertad, Jimalalud, Tayasan, Ayungon, Bindoy I, Bindoy II, Manjuyod)

The participating eight (8) districts will be divided into two(2) brackets. Each bracket will play a single-round-robin during the elimination round. Rank 1 in each bracket will play for the championship game and Rank 2 in each bracket will play for the 3rd place. In case of simple tie, it will be resolved to "WINNER OVER THE OTHER". For triple tie, it will be resolved to "Quotient System". First and second winners will qualify to the Division level competition.

Single Round Robin:

| Bracket A | Bracket B |
|---|---|
| A vs B | E vs F |
| C vs D | G vs H |
| A vs C | E vs G |
| B vs. D | F vs H |
| A vs D | E vs H |
| B vs C | F vs G |

Score Sheet/Score Board:

| | No. of wins | No. of Loses | Rank | | No. of wins | No. of loses | Rank |
|---|---|---|---|---|---|---|---|
| A | _____ | _____ | ____ | E | _____ | _____ | ____ |
| B | _____ | _____ | ____ | F | _____ | _____ | ____ |
| C | _____ | _____ | ____ | G | _____ | _____ | ____ |

***Note : The host district will prepare the Damoth Boord. Each contestant will bring his/her own set of chips.***

## 2. TESSELLATIONS-MAKING CONTEST9 (Non-Polygonal Translation Tessellations)

*A tessellation is any pattern mode of repeating shapes that covers a surface completely* ***without*** *overlapping or leaving any gaps. A checkerboord is a tessellation made of squares. The squares meet edge to edge with no gaps ond no overlapping oreas. The pattern of bricks on a wall is a tessellation made of rectongles.*

*Making tessellations combines the creativity of on ort project with the challenge of solving a puzzle.* ***Making a non-polygonal tessellations is creating a pattern from a square or any parallelogram by cut and slide pattern to be tesseilated an a surface area. It combines the creativity of an art project with the challenge of salving a puzzle.***

**MECHANICS:**

1. The contest is open to all Grade 10 students (one contestant per district)
2. Each contestant is provided with 2"x2" square polygon which he/she can create a cut and slide pattern to be tessellated on a 1/8 sheet of an illustration board
3. Each contestant will bring the following materials: glue or paste, a pair of scissors, plastic tape, pencil with eraser, pen marker and construction papers of his/her preference; in addition to the illustration board.
4. Time allotment is 3 hours.
5. Each tessellation output will be worth % (Refer to the rubric below)

| | | |
|---|---|---|
| COMPLEXITY OF THE PATTERN (Does it create an interesting, involved design?) | - | 25% |
| ORIGINALITY (Is it totally original?) | - | 25% |
| PRECISION (Do tightly interlocking shapes fill the plane?) | - | 25% |
| ATTRACTIVENESS (Is it pleasing to the eye? Does it involve great color and additional details?) | - | 25% |
| TOTAL | - | 100% |

### 3. TOWER OF HANOI COMPETITION

*The **Tower of Hanoi** or **Tawers of Hanoi** (also known as the **Tower af Benares**) is a **Mathematical game** or **puzzle**. It consists of **three rods**, and a **number af disks of different sizes** which can slide onto any rod. The puzzle starts with the disks neatly stacked in order of size on one rod, the smallest at the tap, thus making a canical shape.*

**MECHANICS:**

1. The contest is open to all interested Grade 7-Grade 10 students (one contestant per district)
2. Each contestant will bring his/her own set of Tower of Hanoi.

**RULES OF THE GAME:**

a. Move 1 disk at a time.
b. Big disk shouldn't be placed on top of the small disk.
c. For every number of disks there is a corresponding number of move.
d. The game will be composed of 3 rounds.
   1st Round – Use both hands in transferring the disk.
   2nd Round – Use right hand in transferring the disk.
   3nd Round – Use left hand in transferring the disk.
e. The contestant with the shortest time to finish, wins the game in every round.
f. The contestant with the shortest average time for the 3 rounds wins the game.

### 4. RUBIK'S CUOE COMPETITION

GENERAL RULES

1. The competition is open to Grade 7-Grade 10 students. (one contestant per district)
2. A 3x3 Rubik's cube will be provided to the competitors **(to be provided by the host District).** Thus, cubes should not be damaged, marked or otherwise altered. However, if for any reason the cube does not function correctly, falls apart or moves out of the solved state accidentally once the timer has stopped, the cube is considered unsolved and will justify grounds for a "do over".
3. A scrambler mixes the cubes so they are completely scrambled. The number of moves to scramble a cube from the solved state to the scrambled state must be at least 25 moves.
4. Competitors will be competing against each other for the fastest time with a maximum time of 10 minutes.
5. Competitors may talk among themselves during the competition but should not distract other competitor.
6. No items whatsoever are allowed on the competition table(s) including cell phones, tablets or other electronic devices.
7. Use of notes or any form of reference material is not permitted on the competition.
8. Competitors may sit or stand during the competition round(s)
9. The competition will be composed of 3 rounds, the competitor with the smallest average time will be declared as winner.
10. Disqualification: The competition judge may disqualify the competitor or issue a warning for any of the following reasons:
    -Cheating
    -Competitor fails to comply with school policy, competition rules or the rules of the venue.
    -Competitor is disruptive and/or interferes with other competitors.
    -Any warning will result in a 5 second competition penalty per incident.
    -In the event of any dispute, competitors must accept the final ruling of the competition judge.

COMPETITION PROCEDURE:

1. A scrambler scrambles the cube according to a scrambling procedure.
2. A judge must call "Penalty" at the time of the infraction and such penalty should be noted by the score taker.
3. Competitors must place their hands flat on the table and must not have any physical contact with the cube before the solving begins. Penalty for infraction is 5 seconds.
4. Competition judge must do a quick general inspection to ensure thorough scrambling. If in doubt, scrambler must re-scramble. The judge must give a warning before the start of the round by calling "Ready" followed "Go" when the warning time has elapsed.
5. As soon as the competition judge calls "Go" the timer are activated and the competitors begin to solve.

6. After the 10 minute time limit, the competition judge should call "Time". Otherwise, the timer is stopped (by whomever started the time) when the competitor has solved and released the cube.
7. Once the time is stopped, competitors must not touch or move the cubes or timer until the score taker has inspected all the cubes and the time is recorded together with any penalty on the score sheets.
8. The solved state is when each of the six sides of the cube has one solid color per side. If one move is required of more than 45 degrees there is a 5 second penalty. If more than one move is required the cube is considered not solved.

## SCORE SHEET

Judge:
Score Taker:

| Contestant Name | | Round 1 | Round 2 | Round 3 | Other Penalties | Average Time | Rank |
|---|---|---|---|---|---|---|---|
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Panalty: | | | | | | |
| | Time: | | | | | | |
| | Panalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Penalty: | | | | | | |
| | Time: | | | | | | |
| | Penalty: | | | | | | |
| | Penalty: | | | | | | |

**5. MATH JINGLE CONTEST**

1. Only bona fide students of the Division of Negros Oriental from Grade 7-10 are qualified to join the contest (one group per district).
2. Each group shall consist of a minimum of 8 students to a maximum of 12 students .
3. Presentation of singing will be done in **acapella** only and which shall be based on the theme "**Enhancing Mathematical Skills in A Better Way**"
4. Performance will be given a time limit of 2-3 minutes excluding entrance and exit. A point shall be deducted for every exceeding minute.
5. The lyrics should be in English, NOT Taglish.
6. The winners will be chosen by the panel of judges on the following criteria:

| | | |
|---|---|---|
| Creativity/Originality (of Lyrics) | - | 30% |
| Musicality | - | 25% |
| Relevance to the Theme | - | 15% |
| Volume and Blending of the Voice | - | 20% |
| Audience Impact | - | 10% |
| TOTAL | - | 100% |

**6. MODULO ART CONTEST**

Mathematics is the study of patterns. One of the ways in which we may use number patterns is the creation of unique and artistically pleasing designs. MODULO ART is making designs based on modular arithmetic tables

HERE'S HOW...

1. This contest will be participated by Grade7 to Grade 9 students only (one contestant per district per year level)
   - Grade 7 - Square Grid (Reflected Pattern)
   - Grade 8 - Circle Grid ( Reflected Pattern)
   - Grade 9 - Polygonal Grid ( Reflected Pattern)

2. Each contestant must be provided with blank modulo art sheet; however, each must bring his/her own coloring materials, pencil, ruler and other drawing materials of his/her choice.

3. The CRITERIA for judging are the following:

| | | | |
|---|---|---|---|
| Color combination | - | 20 pts | |
| Creativity/Visual impact | - | 20 pts | |
| Originality | - | 20 pts | |
| Neatness | - | 20 pts | |
| Accuracy of Patterns & Designs | - | 20 pts | TOTAL: 100 PTS. |

4. One winner per year level will be proclaimed .
5. Time allotment is 3 hours

**7. MATHSAYAW**

## DESCRIPTION

***MATHSAYAW is an innovative technique of expressing mathematical symbols through dance steps. It is an expression of one's God-given creativity and talent, incarparating Mathematics and the art af dancing at the same time. Through a combination af precise hand and body movements, mathematical symbols and expressions are clearly conveyed and catered to its audience. Mathsayaw is an artistic way of conveying the fundamentals of Math like the mathematical symbols which are interpreted through the precise bodily movements with the use of different parts of the body. Truly, Mathsayaw is a unique way of catering to the multi-intelligences of the learners.***

## CRITERIA

| | | |
|---|---|---|
| **MATHEMATICAL APPEAL** (this includes the clarity of symbols interpreted and appeal of steps) | - | 40% |
| **CHOREOGRAPHY** (uniqueness of steps and appropriateness to symbol) | - | 25% |
| **SYNCHRONIZATION** | - | **25%** |
| **COSTUME AND OVER-ALL IMPACT** | - | **10%** |
| **TOTAL** | - | **100%** |

## GUIDELINES

1. Each group will be composed of a minimum of 6 and a maximum of *15 dancers* (one group per district)
2. These students will create a series of dance steps using the symbols in Mathematics from Algebra to Geometry.
3. These mathematical symbols are given life through bodily movements and freely interpreted with music as dance steps.
4. The interpretation of the mathematical symbols is strictly using the body parts (hands, feet, legs, arms, head)
5. The group will be given a minimum of 2 minutes and a maximum of 5 minutes for the whole performance. A point shall be deducted for every exceeding minute.