



Republic of the Philippines  
**Department of Education**  
**REGION XI**  
**SCHOOLS DIVISION OF DIGOS CITY**

Office of the Schools Division Superintendent

**DIVISION MEMORANDUM**

CID-2023-081

To : CID Chief  
Public Schools District Supervisors  
Education Program Supervisor in Mathematics  
Elementary and Secondary Public and Private School Heads  
Elementary and Secondary Public and Private School Teachers  
All Others Concerned

Subject : **REIMPLEMENTATION OF THE PLAYING OF DAMATH IN SCHOOLS FROM GRADES 3 TO 11**

Date : March 15, 2023

In reference to RM-CLMD-119, s. 2023 dated March 14, 2023 entitled "Reimplementation of the Playing of Damath in Schools from Grades 3 to 11," this Office enjoins Mathematics teachers from Grades 3 to 11 to reimplement the playing of Damath in the classroom as part of the activities to be done especially during Project LABANG time for numeracy.

This aims to stimulate the capability of learners to think deeper through a creative game board, provide them means to explore the number system and deepen critical thinking and problem solving skills in real world scenario.

It is further advised that this will be done only for 20 minutes once a month or whenever applicable to enrich the lessons. All Mathematics Department Heads are informed to devise a plan to capacitate the Math teachers to create a Damath Activity Team.

This Office also advises that Math subject area teachers to track the progress of the learners and closely supervise the learners in their Damath activities. The game mechanics and other details are in the enclosures.

Immediate dissemination of this Memorandum is desired.

**CRISTY C. EPE**

Schools Division Superintendent

JepEd Schools Division of Digos City  
RECORDS SECTION

**RELEASED**  
23-99267

DATE: MAR 20 2023 TIME: 12:00 PM

BY: [Signature]

Enclosed: As stated.

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Republic of the Philippines  
**Department of Education**  
DAVAO REGION

Office of the Regional Director

**REGIONAL MEMORANDUM**  
CLMD- 2023-119

To : Schools Division Superintendents

Subject: REIMPLEMENTATION OF THE PLAYING OF  
DAMATH TO SCHOOLS FROM GRADES 3 TO 11

Date : March 14, 2023

The Department of Education Regional Office XI through the Curriculum and Learning Management Division (CLMD) in support to the National Mathematics Program (NMP) advises the schools to reimplement the playing of damath from grades 3 to 11 in their Mathematics period

This aims to stimulate the capability of learners to think deeper through a creative game board, provide them means to explore the number system and deepen critical thinking and problem solving skills in the real world scenario.

It is further advised that this will be done only for 20 minutes, once a month or whenever applicable to use in enriching the lessons. All Mathematics Department Heads are informed to devise a plan to capacitate the Math Teachers and create a Damath Activity team.

This Office also advises the Math subject area teachers to track the progress of the learners and closely supervise the learners in their Damath activities. The game mechanics and other details are in the enclosures.

Immediate dissemination of this Memorandum is desired.

DEPARTMENT OF EDUCATION ROXI  
RECORDS SECTION

RELEASED

BY: 16849  
Date: \_\_\_\_\_ Time: MARCH 15,  
2023

ROC9/hab

**ALLAN G. FARNAZO**  
Director IV

By the Authority of the Regional Director

**MARIA INES C. ASUNCION**  
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## **Enclosure 1. Background and Mechanics of Damath**

### **Brief Background:**

This joyful and practical approach to contextualized teaching and learning Math is the brainchild of 1981 presidential merit medal awardee teacher Jesus L. Huenda. As a public high school teacher in Sorsogon, Sir Huenda always thinks of ways to optimize his talents to help others. This describes best this ordinary teacher who was cited by no less than the President of the Republic for his out-of-the-box "contribution in terms of innovative approaches in teaching and learning mathematics". The game becomes a combination of strategic higher order thinking skills and basic mathematical operations.

DECS Memorandum No. 524 s. 2000 and DECS Memorandum 16 s. 2001 stipulated the inclusion of Damath in the National Math competitions.

"Damath," coined from the Pinoy checkerboard game "dama" and Mathematics, is now being promoted by the Department of Education (DepEd) as a Filipino way of learning math" this is according to Philstar (2010).

The Department of Education noted that "being numerate goes beyond mastery of basic Mathematics; it is being critically aware of connections between Mathematics and the real world. Thus, with the reimplementation of Damath games in the classroom the CLMD supports the MATATAG agenda to strengthen the numeracy skills of the learners.

### **MECHANICS:**

\*Basically the rules in playing the Filipino check board game dama will be used with some modifications in integrating Mathematics as follows:

1. The following grade levels are allowed to play the Damath, in the classroom the teacher acts as the arbiter, or assigns an arbiter from colleagues or learners.

Grade 3 or 4 - Whole Numbers

Grade 5 or 6 - Fractions

Grade 7- Integers

Grade 8- Rational Numbers

Grade 9- Radicals

Grade 10- Polynomials

2. Set the starting positions of the chips.

3. After the starting positions of the chips have been set, the first player is determined by tossing a coin.

4. A chip is allowed to move diagonally forward only to an adjoining vacant square.

5. A chip has to take the opponent's chip diagonally forward or backward, thus 'pass' is not allowed. Mathematical operations (+, -, x, ÷) will be used depending on 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 same in the score sheet).

6. After making a move, a player shall record his/her move in the score sheet.

7. Only one score sheet will be used by the players in a game.

8. Each player is allowed one minute to move, record the move and write the score in the score sheet.

9. A warning is given to a player by the arbiter if no move is made in one minute, and consequently, is forced to move a chip.

10. Continuous violation of rule # 7 will mean disqualification/losing (after 3 warnings) of the player even if he/she is leading in the score sheet.

11. In taking more than one chip, the 'taker' chip is always the addend, minuend, multiplicand, or dividend as the case may be.

12. In taking a chip or more than one chip, the dama rules on 'dama', 'mayor dalawa or tatlo', 'mayor tatlo over dalawa', mayor dama and mayor dalawa or tatlo over dama prevail.

13. 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: (1,0) (3,0) (5,0) (7,0)

14. "Dama" chip should be encircled in the score sheet to identify the "dama".

15. 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.

16. 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.

17. The game ends when any of the following situation occur:

- If no show of one player is declared after ten minutes (if applicable)
- Repetitive moves of any or both players
- A player resigns
- A player's chip is cornered
- A player has no more chip to move
- The 20-minute game duration ended

18. The remaining chips have to be added to the respective player's total scores.

19. The player with the greater total score in Damath is declared the winner.

20. Only one score sheet is allowed to be accomplished alternately by the two players whereby incorrect entries in the score sheet, a player



has to immediately call the attention of the competition facilitator/teacher by raising one's hand, that is, after stopping the time. As determined by the said facilitator/teacher, the appropriate corrections will be done by the erring player in as much as the facilitator's/teacher's decision is final and unappealable.

**CHIPS AND POSITION IN THE DAMATH BOARD:**

**Starting Positions of the Damath chips**

**Grade 7 (Integer Damaths)**

-9	6	-1	4
0	-3	10	-7
-11	8	-5	2

**Grade 8 (Rational Damaths)**

-9/10	6/10	-1/10	4/10
0	-3/10	10/10	-7/10
-11/10	8/10	-5/10	2/10

### Grade 9 (Radical Damaths)

$9\sqrt{2}$	$\sqrt{8}$	$4\sqrt{18}$	$16\sqrt{32}$
$-49\sqrt{8}$	$-25\sqrt{18}$	$36\sqrt{32}$	$64\sqrt{2}$
$-121\sqrt{18}$	$-81\sqrt{32}$	$100\sqrt{2}$	$144\sqrt{8}$

### Grade 10 (Polynomial Damaths)

$-3x^2y$	$-xy^2$	$6x$	$10y$
$-21xy^2$	$-15x$	$28y$	$36x^2y$
$-55x$	$-45y$	$66x^2y$	$78xy^2$

Damath Board for Grade 10 Only

	7	6	5	4	3	2	1	0	
7	X		÷		-		+		0
6		÷		X		+		-	1
5	-		+		X		÷		2
4		+		-		÷		X	3
3	X		÷		-		+		4
2		÷		X		+		-	5
1	-		+		X		÷		6
0		+		-		÷		X	7
	0	1	2	3	4	5	6	7	

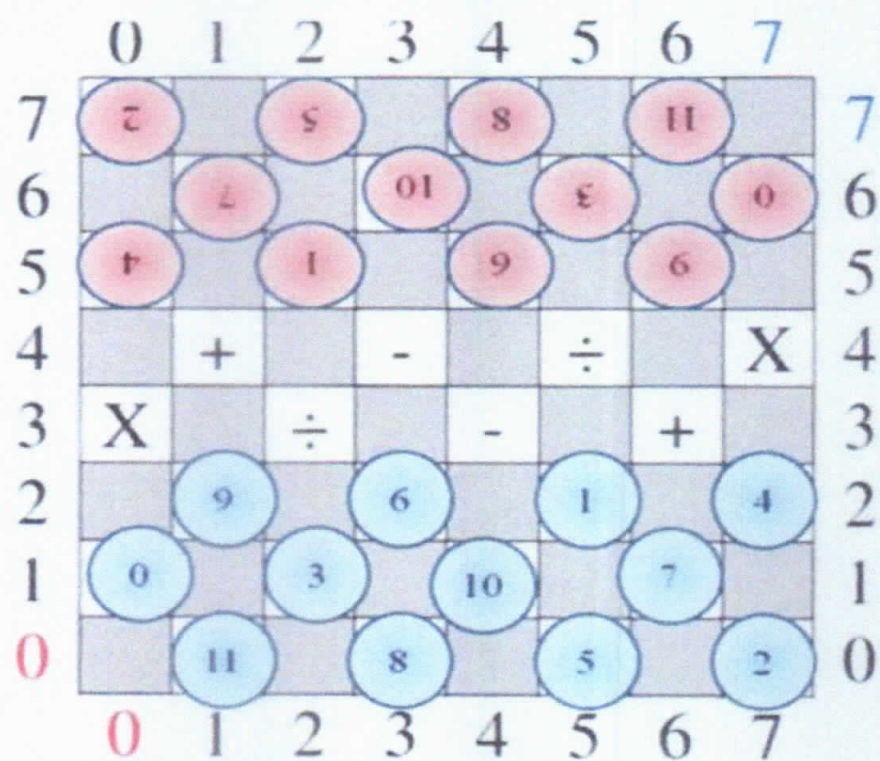
Damath board for Grades 3 to 7, Grade 8 and Grade 9

	0	1	2	3	4	5	6	7	
7	X		÷		-		+		7
6		÷		X		+		-	6
5	-		+		X		÷		5
4		+		-		÷		X	4
3	X		÷		-		+		3
2		÷		X		+		-	2
1	-		+		X		÷		1
0		+		-		÷		X	0
	0	1	2	3	4	5	6	7	



### ARRANGEMENT OF CHIPS

Grade III and IV - WHOLE DAMATH





Grade V and VI - FRACTION DAMATH

	0	1	2	3	4	5	6	7	
7	$\frac{3}{10}$		$\frac{6}{10}$		$\frac{9}{10}$		$\frac{12}{10}$		7
6		$\frac{8}{10}$		$\frac{11}{10}$		$\frac{4}{10}$		$\frac{1}{10}$	6
5	$\frac{5}{10}$		$\frac{2}{10}$		$\frac{7}{10}$		$\frac{10}{10}$		5
4		+		-		÷		X	4
3	X		÷		-		+		3
2		$\frac{10}{10}$		$\frac{7}{10}$		$\frac{2}{10}$		$\frac{5}{10}$	2
1	$\frac{1}{10}$		$\frac{4}{10}$		$\frac{11}{10}$		$\frac{8}{10}$		1
0		$\frac{12}{10}$		$\frac{9}{10}$		$\frac{6}{10}$		$\frac{3}{10}$	0
	0	1	2	3	4	5	6	7	

SECONDARY LEVEL

Grade 7 - INTEGER DAMATH

	0	1	2	3	4	5	6	7	
7	7	5	8	11					7
6		2	10	3	0				6
5	4	1	9	6					5
4		+		-	÷		X		4
3	X		÷		-		+		3
2		-9	6	-1	4				2
1	0		-3	10	-7				1
0		-11	8	-5	2				0
	0	1	2	3	4	5	6	7	

GRADE 8 - RATIONAL DAMATH

	0	1	2	3	4	5	6	7	
7	$\frac{2}{10}$	$\frac{5}{10}$	$\frac{8}{10}$	$\frac{11}{10}$					7
6		$\frac{7}{10}$	$\frac{10}{10}$	$\frac{3}{10}$	0				6
5	$\frac{4}{10}$		$\frac{1}{10}$	$\frac{6}{10}$	$\frac{9}{10}$				5
4		+		-	÷		X		4
3	X		÷		-		+		3
2		$\frac{9}{10}$	$\frac{6}{10}$	$\frac{1}{10}$	$\frac{4}{10}$				2
1	0		$\frac{-3}{10}$	$\frac{10}{10}$	$\frac{-7}{10}$				1
0		$\frac{-11}{10}$	$\frac{8}{10}$	$\frac{-5}{10}$	$\frac{2}{10}$				0
	0	1	2	3	4	5	6	7	

GRADE 9 - RADICAL DAMATH

	0	1	2	3	4	5	6	7	
7	$144\sqrt{8}$		$100\sqrt{2}$		$-81\sqrt{32}$		$-121\sqrt{18}$		7
6		$64\sqrt{2}$		$36\sqrt{32}$		$-25\sqrt{18}$		$-49\sqrt{8}$	6
5	$16\sqrt{32}$		$4\sqrt{18}$		$-\sqrt{8}$		$-9\sqrt{2}$		5
4		+		-		÷		X	4
3	X		÷		-		+		3
2		$9\sqrt{2}$		$-\sqrt{8}$		$4\sqrt{18}$		$16\sqrt{32}$	2
1	$-49\sqrt{8}$		$-25\sqrt{18}$		$36\sqrt{32}$		$64\sqrt{2}$		1
0		$-121\sqrt{18}$		$-81\sqrt{32}$		$100\sqrt{2}$		$144\sqrt{8}$	0
	0	1	2	3	4	5	6	7	

GRADE 10 - POLYNOMIAL DAMATH

	7	6	5	4	3	2	1	0	
7	$78xy^2$		$66x^2y$		$-45y$		$-55x$		0
6		$36x^2y$		$28y$		$-15x$		$-21xy^2$	1
5	$10y$		$6x$		$-xy^2$		$-3x^2y$		2
4		+		-		÷		X	3
3	X		÷		-		+		4
2		$-3x^2y$		$-xy^2$		$6x$		$10y$	5
1	$-21xy^2$		$-15x$		$28y$		$36x^2y$		6
0		$-55x$		$-45y$		$66x^2y$		$78xy^2$	7
	0	1	2	3	4	5	6	7	



## GRADE 11- BINARY DAMATH

### How to Play Binary Damath

Set the starting position of the chips as follows:

Red Chip Player whole nos. "blue chip" player, "red chip" player

0 (1,2) (6,5) 1 0 1 0 1 (3,2) (4,5)

0 1 0 1 0 (5,2) (2,5) 1 0 1 0 1 (7,2) (0,5)

1 (0,1) (7,6) 0 (2,1) (5,6)

0 1 0 1 1 (4,1) (3,6) 1 0 1 0 0 (6,1) (1,6)

0 1 0 1 0 (1,0) (6,7) 1 (3,0) (4,7)

" blue Chip " Player 0 (5,0) (2,7) 1 (7,0) (0,7)

Toss a coin to determine which player will have the first "move"

Moving a chip means sliding it diagonally in the forward direction only except when taking an opponent's chip or if a "dama" chip takes an opponent's chip,

The two players alternately take turns in moving a chip (pass is not allowed).

A player who touches a chip (touch move) is required to move unless it is not possible to do so.

After each 'move' a player has to record his/her 'move' in a scoresheet (only one scoresheet will be used by the two players).

Each player is allotted one minute per 'move' including the recording of the 'move' and the corresponding score in the scoresheet. In as much as taking a chip or chips is mandatory, then the one-minute per 'move' does not apply in this situation.

In taking an opponent's chip, the 'taker' chip jumps over the 'taken' chip and uses any of the four operation symbols of +, -, x and ÷ where the taker chips lands.

A chip is declared 'dama' if it stops in any of the following squares of the opposing player: (1,0) (3,0) (5,0) (7,0). Similarly, the opposing player's chip is declared 'dama' if it stops in any of the following squares (0,7) (2,7) (4,7) (6,7).

A dama chip can slide diagonally forward or backward in any unoccupied square as long as no opponent's chip blocks its path. It could take a chip or chips whereby its corresponding sum, difference, product or quotient is doubled. Similarly, if an ordinary chip takes an opponent's 'dama' chip takes an opponent's dama chip, then its score is quadrupled.

A 'taker' chip can take one chip or more than one chips with the required option to take the greater number of chips.

Between a dama chip taking an opponent's chip and a chip taking an opponent's chip the former prevails.

A taker or taken dama chip should be identified by encircling it in the scoresheet.

The game ends if:

the 20-minute game period lapsed;

the moves are repetitive;

a player has no more chip to move;

an opponent's chip is cornered

The remaining chip or chips of the player are to be added to their respective scores. If the remaining chip is a 'dama', then its score is also doubled.

The player with the greater accumulated total score wins the game.

**SCORE SHEET:**

**Move first before writing entry in the score sheet:**

**Official Score Sheet:**

Move/Operation	Score	Running Score

**Technical Working Group:**

Romer H. Sayago  
Chairman  
Master Teacher I  
Davao City National High School

Members:

Ryan Villacorte-DCNHS  
Reymond D. Curato – DCNHS  
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Compiled by:

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Education Program Supervisor, Mathematics

Noted by:

**MARY JEANNE B. ALDEGUER**  
Chief, CLMD



**Enclosure 2. TA REPORT SUMMARY**

**DAMATH TECHNICAL ASSISTANCE REPORT**

Date	School Visited	District/ Cluster	Damath Concerns/Issues	Findings and Observations	Technical Assistance/ Support Provided	Agreement for Improvement	Remarks

**Narrative About the Damath Activity:**

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Prepared by:

Division Math EPS

Noted by:

Chief, CID