



Republic of the Philippines  
**Department of Education**  
 Cordillera Administrative Region  
**Schools Division of Tabuk City**



Office of the Schools Division Superintendent

6/November/2023

**Division Memorandum**  
 No. 44s. 2023

**DIVISION SCIENCE AND TECHNOLOGY FAIR**

To: Public Schools District Supervisors  
 All Public and Private Secondary School Heads  
 All others Concerned

1. The Division Office through the Curriculum and Implementation Division shall conduct a Division Science and Technology Fair (DSTF) this November 18, 2023 with the theme, "Siyensya, Teknolohiya, at Inobasyon: Kabalik at Matatag, Maginhawa at Panatag na Kinabukasan." The venue will be announced later.
2. This year's DSTF aims to empower the youth to cultivate innovation, and creativity amid the changing world, and showcase learners' competence in addressing community problems for sustainable development.
3. The DSTF will banner the following events and competitions:

A	Board Games- Elementary/ Secondary	
	Sci-Dama	Damath
	Grade 3-Water Patrol	Grades 3- Whole
	Grade 4-Water Patrol	Grades 4-Whole
	Grade 5-Power Patrol	Grade 5 -Fraction
	Grade 6-Power Patrol	Grade 6- Fraction
	Grade 7-Electro Scidama	Grade 7-Integer
	Grade 8-Sci Notation	Grade 8-Rational
	Grade 9-THI	Grade 9-Radical
	Grade 10-Thermo	Grade 10-Polynomial
B	Tuklas (Science)	
	Life Science (Individual & Team)	
	Physical Science (Individual & Team)	
	Robotics Invention Machine(RIM)	
	Mathematical and Computational Science	
C	AghambayaniJuan (Science)	
	Robotics	
D	Mathematical Investigation (Math)	



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Individual and Team

4. The schools shall submit 1 entry for each event before November 15, 2023, for Tuklas, AghambayaniJuan, and Mathematical Investigations.
5. The mechanics and criteria of the different contested activities and the Likha project proposal template shall follow the 2022 NSTF rules.
6. For Board Games, one entry per District for the elementary level, while open for the secondary level.
7. Enclosed with this memorandum are Enclosure 1, or the Boardgame rules, and Enclosure 2-List of TWG.
8. Participants shall be granted COCs/CTOs or Service Credits subject to existing DepEd and CSC rules and regulations.
9. Immediate and wide dissemination of this Memorandum is desired.

  
**BENEDICTA B. GAMATERO, PhD, CESO V**  
Schools Division Superintendent



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Enclosure 1

**RULES of DAMATH/SCI-DAMA**

1. Set the starting position of the chips.
  2. The two players alternately will take turns moving a piece (Pass is not allowed).
  3. Touch moves shall be observed in the games. A player who touches a chip is required to move that chip unless it is an illegal move.
  4. After making a move, a player shall record his/her move in the score sheet.
  5. Only one score sheet will be used by the player in a game.
  6. Each player is allowed one minute to move, record the move, and score.
  7. A warning is given to the player by the arbiter if no move is made in one minute, and consequently, is forced to move a chip.
  8. Continuous violation of rule #7 will mean disqualification (after 3 warnings) of the player even if he is leading in the score sheet.
  9. All moves should be in the forward direction except when taking a chip or the chip is "dama".
  10. A chip is declared "dama" if it reaches and stops in any of the following opponent's square:  
(1,0)                      (3,0)                      (5,0)                      (7,0)
- Similarly, if an ordinary opponent's chip reaches the following squares, it is declared as "dama".
- (0,7)                      (2,7)                      (4,7)                      (6,7)
11. Once a piece/chip is declared as a "dama", it could slide diagonally forward or backward in any vacant square. If a "dama" takes a chip, the score is doubled; similarly, if a chip takes a "dama" the score is also doubled. If the "dama" takes a "dama", the score is quadrupled.
  12. In taking chip/chips, the following shall prevail  
"Mayor dama"  
"Mayor dalawa"  
"Mayor tatlo", etc.
  13. "Dama" chip should be encircled in the score sheet to identify the "dama".
  14. Games duration should not exceed twenty minutes (20 min.).
  15. The game also ends if:
    - The moves are repetitive
    - A player has no more chips to move
    - A player has no chips
    - A player resigns
- "Save by the bell"** is not applicable in the end game. Continuation of move shall be enforced when taking a chip/s.





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16. The remaining chip/s of a player is/are added to his total score algebraically.
17. If the remaining chip is a "dama", the value is doubled.
18. The player with a greater total score wins the game except in the sci-dama when the player with a lesser score wins.
19. Only players are allowed to raise questions during the game through the arbiter and questions should be settled immediately. No questions will be entertained after the game.
20. The arbiter's decision is final.

**Starting Chips Position**

**Whole Number DaMaths**

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

**Fraction DaMaths**

	10/10	7/10	2/10	5/10
1/10	4/10	11/10	8/10	
	12/10	9/10	6/10	3/10

**Integers Damath**

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

**Rational Damath**

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

**Radical Damath**

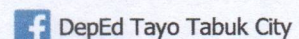
	$-9\sqrt{2}$	$-\sqrt{8}$	$4\sqrt{18}$	$16\sqrt{32}$
$-49\sqrt{8}$	$-25\sqrt{18}$	$36\sqrt{32}$	$64\sqrt{2}$	
	$-121\sqrt{18}$	$-81\sqrt{32}$	$100\sqrt{2}$	$144\sqrt{8}$

**Polynomials**

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



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**Water Patrol Sci-dama (In Cu.m)**

	90	65	10	45
5	30	105	70	
	110	85	50	25

**Power Patrol Sci-dama (In Kwh)**

	95	70	15	50
10	35	110	75	
	115	90	55	30

**Electro Sci-dama**

	P10	7kwh	P2	5kwh
1kwh	P4	11kwh	P8	
	P12	9kwh	P6	3kwh

**Dama Sci-Notation**

	$1.01 \times 10^{10}$		$7.7 \times 10^{-7}$		$2.2 \times 10^2$		$5.5 \times 10^{-5}$
$1.1 \times 10^{-1}$		$4.4 \times 10^4$		$1.111 \times 10^{-11}$		$8.8 \times 10^8$	
	$1.212 \times 10$		$9.9 \times 10^{-9}$		$6.6 \times 10^6$		$3.3 \times 10^{-3}$

**THI Sci-dama (Temperature Humidity Index)**

	25%	70 °F	30%	75 °F
80 °F	35%	85 °F	40%	
	45%	120 °F	50%	110 °F

**TEMPERATURE HUMIDITY INDEX TABLE**

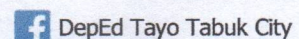
%	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
°F	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108

**Thermo Sci-dama**

	29 g	17 °C	3 g	11 °C
2 °C		7 g	31 °C	19g
	37 g	23 °C	13 g	5 °C



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**Ground Rules**

1. The first player is determined by a table of pairings.
  2. A player forfeits his/her game after he/she commits any of the following violations and fails to observe the third warning by any of the tournament officials
    - 2.1 Wrong position of the chips.
    - 2.2 Annoying/causing disturbing acts such as tapping the chair, or table or whistling.
    - 2.3 Eating or drinking while the game is in progress.
    - 2.4 Exceeding the 1-minute move
  3. Players, coaches, and spectators are not allowed to make post-game analyses or play against other players/coaches/spectators and discuss finished or unfinished games within a 10-meter radius of the playing area. Coaches are only allowed within the playing area. Coaches are only allowed within the playing area if requested by the arbiter/tournament manager.
  4. In taking a chip, the pass is not allowed. If a player has an option, then he may use 1 minute but has to take the chip/chips anyway. If a player has no option, then he has to take the chip/s right away without consuming the 1-minute time.
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5. No save by the bell in the last minute of the game. Continuation of moves will be observed when a chip or chips is to be taken.
  6. A player records his/her own move, computation of score is running score for all levels except Grade 10 Damath.
  7. In moving a chip, touch move should strictly be observed except when the move contradicts the general guidelines on the Damath/Sci-Dama Games.
  8. Defaulting time is 5 (five) minutes.
  9. No complaints will be entertained after the player has signed the score sheets.
  10. Tie-breaking rules:
    - 10.1 win over the other (for a simple tie)
    - 10.2 SB System  
Sonneborn-Berger System  
- The sum of the scores of the opponents a player has defeated and half the scores of the players he has drawn with.
    - 10.3. 10-minute knockout game.



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**Enclosure 2. List of Technical Working Group**

A. Board Games

Grade Level	Arbiter	Recorder	Timer
<b>Science</b>			
Grade 3	Leonard Egan	Armiline Balacang	Audee Penalber
Grade 4			
Grade 5	Reynaldo Tumapang	Amado B. Danao	Celso Paguel
Grade 6			
Grade 7	Evangeline Ruth L. Boog	Rowena Wassig	Raqueline Baguiwan
Grade 8	Gay Rose Canao	Noreen Andres	Glory Pangkew
Grade 9	Jovy P. Gunnawa	Angeline Apaling	Ever Joy Ysmael
Grade 10	Lorenzo Cosidon	Airene Fernandez	Randolf I. Cudal
Overall Chairman		Petronila G. Buslig	
<b>Mathematics</b>			
Grade 3	Mark Malamnao	Rey Abannag	Roland Ragma
Grade 4			
Grade 5	Hener Abad	Robert Balneg	Roland Michael Aspirin
Grade 6			
Grade 7	Sherwin Dusagan	Paul Dimalanta	Leo Dugui-is
Grade 8	Ricardo Mukay	Reymar Galinggan	Mark Harrerson Bangngayon
Grade 9	Aljay Gammod	Alfredo Payl Reyes	Redondo Romero
Grade 10	Elizaldy Blaza	Solomon Naganag	Rafael Alcodia
Overall Chairman			