



Minnesota Junior High Math League

Coach's Manual 2009-2010 Season

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SCHEDULE

Meet Schedules (all on Mondays)

1.	October 5, 2009		October 12, 2009
2.	October 26, 2009		November 2, 2009
3.	November 16, 2009	or	November 23, 2009
4.	December 7, 2009		December 14, 2009
5.	January 4, 2010		January 11, 2010

Divisions preferring to use the Senior High Math League schedule, please let me know. Your results will not be on the statewide results until March.

EVENTS

Individual Event A	10 minutes
Individual Event B	10 minutes
Break	
Team	20 minutes

For Ninth Graders:

Individual Event C (at time of Event A)	10 minutes
Individual Event B (same as above)	10 minutes
Ninth Grade Team (at time of Team above)	20 minutes

TEAMS

1. Each school may bring as many students as wish to come to each meet **UNLESS THE DIVISION SETS A LIMIT TO THE NUMBER OF PARTICIPANTS.** There is a software limit of 15 teams and 185 students per division. (Ninth grade acts as a separate division.) You are encouraged to invite students in lower grades to participate as a recruiting tactic. They may be on the team if you so choose.
2. All of these students will participate in the individual competition. Six of the students will be identified as team members before the meet. These same six students will enter the team competition for their school.
3. The six member team will be identified upon arrival at the host school. The six member **team will include not more than four eighth graders.** If there are five or six eighth graders, the **lowest** four eighth grader scores will be used.*
4. The meet master should be consulted if an emergency makes it necessary to use an alternate instead of one of the six team members.
5. Students may drop from their math team or new students may be added to their math team at any time during the season.
6. If you wish to have a ninth grade team, it will consist of six ninth graders, or any mixture of 7th, 8th, and 9th graders. Event C will be for ninth grade team and will be administered during Event A which is not open to ninth graders. Everyone will take Event B. There will be a separate Team Event for ninth grade teams.
7. If your school has more than one team, please feel free to switch students around, sort of a varsity and junior varsity situation where the students earn a position on the top team.

*** Note this penalty**

SCORING

1. Individual Event A will have five questions worth 2-2-2-4-4 points respectively for a possible total score of 14 points.
2. Individual Event B (and Event C for ninth graders) will be scored the same as Event A.
3. The six or more individuals from each school will earn up to 28 points each during these two events.
4. Each school will earn a possible 168 points from their six team members.
5. The team competition will have these same six students working together on ten questions. Each correct answer will earn four points for a possible score of forty points for their school.
6. Individual and team scores will be posted at each meet as soon as possible. Marlys Henke will keep all the cumulative scores during the season and she will send the results to the participating schools.
7. Mistakes in the answer key must be found before each meet is over and pointed out to the graders.
8. Only the answer written in the answer blank will be counted.
9. All answers must have correct units indicated. On individual events (not team events) partial credit will be allowed for missing units only, according to the following table:*

*	If the correct answer is 5cm^2 :	
*	On 4 point questions:	On 2 point Questions:
*	4 points for: 5cm^2	2 points for: 5cm^2
*	3 points for: 5cm	1 point for: 5cm
*	3 points for: 5	1 point for: 5
*	0 points for: 8cm^2	0 points for: 8cm^2
*	0 points for: cm^2	0 points for: cm^2
10. **Note that all scores will count towards the final results.**

* **Note this addition to the manual.**

CALCULATIONS

1. Students should be able to write answers in three significant digits, especially in connection with scientific notation.
2. Students should know how to round to the nearest specified decimal place. When the number ends in 5, round up. Sales tax is rounded.
3. Students should know that "accurate to two decimal places" means "round to the nearest hundredth."
4. For some questions, I will ask for a mathematically correct answer to a specified degree of accuracy for one point, and a common sense practical answer of one point. Note that stores round up when the customer buys a fraction of the pricing unit so they do not lose money. For example, if oranges are three for a dollar and a person buys one orange, the store charges \$0.34, or people would buy three separate oranges for a total of \$0.99 rather than three for a dollar.

No Calculators Allowed

I am making the competition NO CALCULATORS ALLOWED this year. Since my answer keys have explained the theory behind the answers all along, this should pose no problem. I will adjust the numbers to be easier to do in many cases, but mathletes still need to know basic operations!!!

Reasons: ARML (the national high school math competition (Minnesota always sends two teams of 15 all-star mathletes)) has always had no calculators on the individual questions and is now going to no calculators on the team questions as well. The MN State High School Math League has several "no calculator" events each year. The calculators are getting more sophisticated so it is much harder to write questions that do not give an unfair advantage to mathletes with the newest calculator. AND the mistakes our ARML mathletes are making are calculating errors when they do know how to do the problems.

AWARDS

1. All awards will be handed out at the conclusion of the fifth meet.
2. Divisions of three teams get one trophy, four teams get two trophies. The first, second, and third place teams will win trophies for their schools if there are at least 5 teams in the division. A fourth place trophy will be provided if there are ten or more teams in the division.
3. Gold, Silver, and Bronze medals will be provided for the first, second, and third place scorers for each division. Seven math medals will be provided for scores 4 through 10 in the division. Division certificates will come with each medal. In case of a tie, the next lower medal should not be awarded. For example, if there is a tie for second, the third place medal should be returned and a second place medal and certificate will be sent to the appropriate school. If there is a tie for sixth, there will be no math medal for seventh place. If there is a tie for tenth, contact Marlys Henke for an additional math medal and certificate.*
4. Three "Winner" ribbons will be provided for top scorers of each team, so a school with two teams will get six ribbons to award. Team certificates will be provided with each ribbon.
5. All participants will receive a certificate of participation.
6. Try to get local businesses to donate coupons or other prizes for the athletes.

* **Note this addition to the manual.**

TOPICS FOR EVENTS

- Meet 1 Fractions and decimal
Prime and composite numbers, LCM, LCD, GCF
Divisibility Rules (2,3,4,5,6,8,9,10)
Metric system, English system
Operations with integers and fractional numbers
Converting written statements to algebraic statements
- Meet 2 Absolute value
Exponents, Scientific Notation
Factorials
Midpoint and other distances on a number line
Sequences
Solving linear equations
- Meet 3 Logic problems
Distance equals rate times time problems
Perimeter of polygons, circles, sectors
Ratios and proportions
Percent applications
Creating linear equations
Writing linear equations in many forms
- Meet 4 Solving inequalities, graphing inequalities on a number line
Similar figures with applications of similarity
Pythagorean Theorem
Square roots, simplifying radicals
Surface area of prisms, pyramids, and cylinders
Graphs of linear equations
Slopes and intercepts of linear equations
- Meet 5 Operations with polynomials (+ - x /)
Probability and Statistics (Mean, median, mode)
Systems of linear equations
Stem and leaf plots
Box and Whisker Plots
Volume of prisms, pyramids, cones, cylinders, spheres

ALL TOPICS LISTED ARE FAIR GAME FOR SUBSEQUENT MEETS.

ORGANIZING A MEET

Before the Meet:

1. Order food (cookies and pop or whatever).
2. Reserve a large room for the students and a classroom for the scorers.
3. Assign duties to the adults: Proctor the tests, Runner between the grading room and the testing room, Scorer, Checker, Score Recorder.
4. Make a large poster with the name of each school, Event A, Event B, Team Event, and Total Score. Put the poster up in the competition room before the meet. Let the school that wins the meet take the poster.
5. Make sure that blank scratch paper and a pencil sharpener are available in the testing room.
6. Assign some of your students to meet arriving buses or cars and direct or escort the guest teams to the rooms. Consider putting up signs (MATH MEET THIS WAY----->).
7. You may consider having one room just for coats and boots so that they are out of the way during the meet.
8. Make or locate color coded cards with the school names. This allows you to assign seating in a scattered manner very easily.
9. Decide where each team will be for the team event. Widely scattered tables in one room are okay, or use several rooms. Remember to allow for extra teams made up of extra students from the schools.
10. Consider asking your Administration to greet the students at the start of the meet.
11. You may wish to prepare tickets or coupons that each student turns in when they pick up their refreshments.
12. Remember to bring cameras to Meet 5 for the Awards Presentation. Meet 5 will last 20 to 30 minutes longer for standings to be calculated and awards presented.

During the Meet:

1. Hand out an information sheet and refreshment tickets as schools arrive. One sample sheet is included.
2. As soon as a coach from another school arrives, open the test packet and have at least two adults take the tests to check for mistakes on the answer sheets!
3. Collect the Team Roster from each coach, checking to see that first and last names and grade level are clearly indicated and that they are legible. (Not more than 4 eighth graders on the team).
4. Have the students sit by a card with their school name to scatter them around the room.
5. Hand out scratch paper and Event A turned upside down. When everyone is ready, turn the papers over and give the students exactly ten minutes to do the test. Give them a two minute warning before the end and remind them to put their name and school name on the paper.
6. Collect Event A, renew the scratch paper supply, and do the same with Event B.
7. Allow a short break before the Team Event to allow students to read the posted answers, get refreshments if they did not eat before the meet started, and get seated according to school teams. Organize teams of alternates if you wish.
8. Each team gets 7 question sheets, one for each student and one official answer sheet to be handed in. The Team Event is timed for twenty minutes with a warning 5 minutes before the end.
9. During Event A, the Scorers should make one pile of clean questions and answers for all three events for each school to take home.
10. As each paper is scored by putting a mark next to wrong answers (not over them) and the score earned written at the top of the paper, it should be checked by someone else. If each scorer uses a different colored pen, it is easier to re-mark papers if a scorer is making an error and it is not detected immediately. As the papers are scored and checked, distribute them into piles sorted by school.
11. After an event is scored, enter the scores on the Team Roster and have someone check the entries

12. Record the Event scores for each school on the Meet Roster and then post the scores on the large poster for the students to see. Usually Event A is posted during the break before the Team Event and Event B is posted during the Team Event.
13. Post a copy or two of the answers to Event A and Event B at the start of the break between the individual events and the Team Event.
14. The scorers are most likely to make mistakes grading the Team Event because they are rushing, so BE CAREFUL.
15. As soon as all papers are scored and recorded, hand them back to the coach and allow five minutes for students to check their papers for scoring accuracy, and for the coach to check the Team Event against the Team Event Answer Sheet. ALL MISTAKES MUST BE CAUGHT BEFORE THE END OF THE MEET.
16. Please make sure that total scores are entered for each student on the Team Roster and each team on the Meet Roster.
17. SEND THE TEAM ROSTERS AND MEET ROSTER TO MARLYS HENKE AS SOON AS POSSIBLE.

SAMPLE MEET HANDOUT

Junior High Math League Meet 5

Washington Jr. High School

1/9/06

Welcome to Washington Junior High!

Please note that the place cards and scoring posters are color coded as follows. This should help students in locating seating positions.

Barnum, M. L.: white
Chippewa: purple
Hazel Park: red
Humboldt: orange
Murray: lilac
Washington: buff

Battle Creek: deep purple
Cleveland: light blue
Highland: pink
Monroe: yellow
Ramsey: green

Coats may be placed in the cafeteria. The cafeteria will be used for snacks and all competitions. Scoring will be done in room 112.

Coach Assignments:

Monitoring, distribution, and collecting exams: [cafeteria]

Stanley Vee
Jill Gebeke

Shirley Sorteberg
Abdomohammad Karimi

Keith Kalway
Cindy Miller

Scoring:

Cathy Wick
Charlotte Osborne

Ian Beveridge
Dan Mesick

Sharon Jerzyk
Ken Anderson

Running, Score Posting:

Connye LaCombe

Angela Simons

Appendix A:

Copies of previous years meets are available on the web site:
usfamily.net/web/mathleague.

Appendix B:

Notes on filling in the Team Meet Roster and Record sheet:

1. Fill in each students name. Please print legibly and spelled correctly. Use the name that you want on the report. Try to avoid felt tip pens. They tend to have a large enough point that strokes tend to blur together. Blue or black ink works best.
2. Indicate the sex of each student. We are often asked how many students of each sex participate.
3. Fill in the grade level of each student. Remember that no more than four students on a team may be eighth graders.
4. Fill in each students score for Event A.
5. Fill in each students score for Event B.
6. Fill in the Total Score for each student. Don't trust to my adding in my head.
7. Add up the scores for all students vertically. It makes a good double check.
8. Transfer the Event A and Event B totals to here.
9. Fill in the Team Event score.
10. Add up up the Event A, Event B, and Team event scores. Transfer them to the Team Score Roster.
11. Fill in scores for additional participants the same way. You can use another sheet if you have more than 14 participants. (Or make up your own sheet.)
12. The coach's signature acknowledging that everything is correct.

TEAM MEET ROSTER AND RECORD

Team School or Team Name Date Meet Date

7th and 8th Grade Individual Records

	(2) Sex	(3) Grade	(4) Event A	(5) Event B	(6) Total		
(1)	1. Student Name 1	M	8	12	14	26	Event A <u>52</u>
	2. Student Name 2	F	8	10	8	18	Event B <u>48</u>
	3. Student Name 3	M	8	12	4	16	(9) Team Event <u>26</u>
	4. Student Name 4	F	8	8	12	20	Team Score 126
	5. Student Name 5	M	7	6	8	14	(10)
	6. Student Name 6	F	7	4	2	6	
	Team Total		52	48	100	(7)	

Other Participants

7.	(11)					
8.						
9.						
10.						
11.						
12.						
13.						
14.						

Coach John Q Coach (12)