

Delaware Secondary School Mathematics League

Sponsored by
DCTM - Delaware Council of Teachers of Mathematics, Inc.

Rules and Procedures 2016-17

The Delaware Secondary School Mathematics League will have four meets per school year, one a month starting in November. Each school is assigned to a local region. Generally, each school in the region is expected to host one meet (exceptions made by mutual agreement of schools involved). There are four levels of competition (grade 7, grade 8, grade 9, and grades 10-12). Ninth grade students taking Calculus must compete at grades 10-12.

Math League State Coordinators/Contact People

Questions regarding Math League should be referred to the appropriate Math League State Coordinator.

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Math League Calendar/Meet Times

The Math League coaches' meeting is **Wednesday, October 5th**, at the Modern Maturity Center in Dover. The four regular meets along with two snow make-up dates (to be used only if a 3rd meet is needed) are

- Meet 1 – Monday, November 14, 2016
- Meet 2 – Monday, December 5, 2016
- Meet 3 – Thursday, January 5, 2017
- ***Snow Make-Up date – Monday, January 30, 2017***
- Meet 4 – Tuesday, February 7, 2017
- ***Snow Make-Up date – Wednesday, February 8, 2017***

The Invitational Meets and Banquets will be held at the Modern Maturity Center in Dover from 4:00 to 8:00 PM. The dates and grade levels are

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| • 8 th Grade | Monday, April 24, 2017 |
| • High School (Grades 9-12) | Tuesday, April 25, 2017 |
| • 7 th Grade | Wednesday, April 26, 2017 |

Regional meets are scheduled to begin at 4:00 PM at the designated host school on the designated date. (Variations in the time of day but **not** the date may be made by mutual agreement of the schools involved.) Coaches should not delay the start of a meet past 4:10 even though a team may be missing. After the start of the meet, any late team **cannot** make up any missed questions.

Registration / Payment

Coaches' meeting registrations and team registrations must be received no later than **September 26, 2016** and payment must be received before Thanksgiving, **November 24, 2016**. If a registration fee (coaches' dinner meeting or team) remains unpaid past the deadline, the team(s) will not be allowed to participate until the fee is paid. Coaches will receive confirmation of registration and then confirmation when payment is received.

Teams / Meet Questions / Calculator Use

Each school may enter up to three 7th grade teams, three 8th grade teams, three 9th grade teams and three 10th-12th grade teams with a maximum of fifteen members per team. A maximum of five students is entered for each question. Students may be substituted **between** questions. A given student may participate **on only one team per meet**. Each student should come with a pencil and an appropriate calculator.

During individual questions, team members should sit behind each other. Teams from the same school should not be seated adjacent to each other.

7th grade There will be seven questions per meet. Each is distributed and timed individually. Calculators are allowed on designated questions.

8th grade There will be seven questions per meet. Each is distributed and timed individually. Calculators are allowed on designated questions

9th grade There will be six individual questions and one team question per meet. Each is distributed and timed individually. Calculators are allowed on designated questions. See 9th Grade Team Question section (page 4) for specifics on the team question.

10th-12th There will be six individual questions and two team questions per meet. The questions are distributed and timed in pairs. All questions will be at the pre-calculus level. Calculators are allowed on designated questions. See Senior High Team Questions section (page 4) for specifics on the team questions.

Eligibility

Students should compete at the grade level (grade 7, grade 8, grade 9, grades 10-12) in which they are presently enrolled in school or, if necessary, at the next grade level. At most, one 6th grader can compete on a 7th grade question, one 7th grader can compete on an 8th grade question and one 8th grader can compete on a 9th grade question. Students may not compete below grade level and they may not change to a lower grade level during the school year. Ninth grade students taking Calculus must compete at grades 10-12. Violations will result in all scores for a question being disallowed for the team score and for the individual students.

General Structure

Participating schools will compete within their region. Regional winners will compete at the Math League Invitational Meets held in the spring. See League Awards and Invitational Meets sections for details.

General Meet Procedures

At the mutual agreement of the coaches within a particular region, refreshments may be served upon arrival of the visiting teams, at the end of the meet, or not at all. The host coach should welcome the students and make sure each student has a pencil and scrap paper. When ready, the first question (or first pair of questions) is distributed face down to all participating students. The participating coaches should select one coach to moderate the meet. The moderator should review scoring guidelines with the students (See next section.) The moderator will instruct students to write their name, school, and team name on

the back (blank side); the answer is to be written on this blank side and the answer should be circled. The moderator will tell students when to turn the question over. He/she will then read the question clearly to the students. After reading the question, the moderator will instruct the students to begin and will start the timer. The moderator will announce when one minute remains and when ten seconds remain. He/she will tell students when to stop. Students need to remain seated until all the answers are collected. Questions will be collected and answers scored by participating coaches or assistants. No coach or assistant should grade his/her own teams. The correct answer will be announced and scores written on a board or overhead for students to see. Then the next question (or pair of questions) will be distributed and the procedure will repeat.

Scoring

A maximum of five students from a team can be entered for each question. If more than five students from the same team compete on a question, **then ALL of the answers on that question for that team must be disallowed for the team score and for the individual students. This is a serious penalty for a serious situation.** To prevent this situation from happening where a team is traveling with more than five members, the coach should indicate on the score sheet prior to the start of each meet which students are answering which questions. The students should also know which questions they are to answer prior to the start of each meet.

Questions are scored by participating coaches, each scoring answers from another school, **not** their own. All accepted answers must conform to that given on the answer sheet. Coaches are to fill in the score sheets using black ink and write legibly. **All answers are to be in simplest form. Specifically, integer answers must be expressed as an integer, fractions must be simplified, radicals should not include perfect factors in the radicand and radicals should not remain in the denominator.** Answers are either totally right or totally wrong. If a student writes a partially correct answer, it is to be marked wrong. If the student gives a value that is equivalent to the correct answer but not in the form requested in the problem, it is to be marked wrong. If the problem does not specify form, then all simplified, exactly equivalent answers should be accepted. An example is $\frac{1}{2}$ or 0.5. However, approximate answers such as 0.3 for $\frac{1}{3}$ should never be accepted. The coaches at the meet should resolve any disputes.

For questions involving Pi where a rounded answer is expected, students should use the π key on their calculators. If a calculator does not have a π key, then 3.14159 should be used as the value for π . Students are expected to memorize 3.14159.

Labeling of answers is not required unless necessary to determine the correctness of the answer. For example, if the question asks "How many cows does Farmer Brown have?", and the correct answer is 3, both "3" and "3 cows" would be acceptable. If the question asks "How many cows and how many horses does Farmer Brown have?", and the correct answer is 3 cows and 2 horses, an answer of "3, 2" would not be acceptable as it did not specify how many of each. Questions involving currency usually must be labeled since the question typically asks "How much money?" without regard to denomination. If a student provides a correct numeric answer but labels it incorrectly, even if labeling was not required, the answer will be considered incorrect. For example, if a question asks "How many cubic feet?" and the correct answer is 3, an answer of "3 sq. ft." would be considered incorrect, although an answer of just "3" would be acceptable. The coaches at the meet should resolve any disputes.

If the student gives two different answers to a question, it is to be marked wrong, even though one of the answers may be correct. After the questions are scored, coaches are to record **points and answers** on the supplied scoring sheets for their own school. Each correct answer receives one point; each incorrect answer receives a zero. If the actual student answers are not recorded on the score sheet, the points will be disallowed by the Regional Score Keeper. **Coaches are asked to be considerate of the Regional Score Keeper by alphabetizing the names and printing as legibly as possible.**

At the end of the meet, coaches will complete all sections of the score sheet for their teams, including question totals, student totals, and team totals. **The student answers section of the score sheet must be filled in to verify the scores and in case of appeals. No credit will be given for questions if the**

“answer section” does not contain the correct answer, even if it was indicated as correct in the “score” section. The completed score sheet shall be signed by the scorer, verified and signed by the team’s coach, and given to the Regional Score Keeper at the end of each meet. Regional Score Keepers will then input the scores on an Excel spreadsheet. Copies of regional standings should be distributed by e-mail after each meet.

Appeals for Regional Meets

If an answer is marked incorrect and the student thinks that his/her answer is correct, the student is to write an appeal. The appeal must include: student name, school, question number, student answer, coach’s signature, host coach’s signature, and an explanation of why he/she thinks it is correct. The team coach must review the appeal for validity, sign it and give it to the Regional Coordinator who will review it with the other coaches and make a decision prior to the next meet. The coaches will decide if the appeal is acceptable or not. If there continues to be a disagreement, then the appeal will go to the appropriate Math League Coordinator and a decision will be made. If necessary, the score sheets will be adjusted for the region to reflect any rulings. All decisions announced by the Math League Coordinator are FINAL. Only regional changes will be made because schools are only competing within their region.

Calculators

Any SAT approved calculator is allowed. That includes four-function, scientific, and graphing/programming calculators. That excludes any pocket organizer, hand-held or laptop computer, electronic writing pad or pen-input device, calculator with a QWERTY (typewriter-like) keypad, calculator with paper tape, calculator that makes noises or “talks”, calculator that requires an electrical outlet. If a calculator with large characters (1 inch or more in height) or raised display that might be visible to other participating students is used, then the student will be seated at a separate location.

Smart watches / computerized watches should not be worn during competitions. Coaches should collect such items prior to the start of each meet.

9th Grade Team Question

Each meet at the 9th grade level will include one team question to be completed jointly in ten minutes. Each team will consist of five students. Each team should be assigned a location where members can talk among themselves, but not hear conversation from another team (such as grouped around separate tables in a library or cafeteria, or seated in a circle in a corner of a gymnasium or along a hallway). One student from each team will be designated the captain. Coaches will distribute a copy of the team question to each team member. When ready, the monitor will start the timer and tell students to begin. Students may divide up the work among themselves as they see fit. The team captain is responsible for turning in the official team answer with the school and team name. The monitor will announce when one minute remains and the ten seconds remain. The monitor will tell students when to stop. Students are to remain seated until all the answers are collected. Coaches will collect each official team answer from each team captain. A team will receive two points if the answer is correct and zero points if the question is answered incorrectly.

Senior High Team Questions

Each meet at the 10th-12th grade level will include a pair of team questions to be completed jointly in ten minutes. Each team will consist of five students. Each team should be assigned a location where members can talk among themselves, but not hear conversation from another team (such as grouped around separate tables in a library or cafeteria, or seated in a circle in a corner of a gymnasium or along a hallway). One student from each team will be designated the captain. Coaches will distribute a copy of the team questions to each team member. When ready, the monitor will start the timer and tell students to begin. Students may divide up the work among themselves as they see fit. The team captain is responsible for turning in the official team answers with the school and team name. The monitor will announce when one minute remains and when ten seconds remain. The monitor will tell students when to stop. Students are to remain seated until all the answers are collected. Coaches will collect each official

team answer from each team captain. A team will receive five points if both answers are correct, two points if any one of the two questions is correct, and zero points if neither question is answered correctly.

Cheating

Any student found guilty of cheating, as determined by the participating coaches at the meet, is to be disqualified for that entire meet and all of his/her answers are to be disallowed.

Cell Phones

Students should have cell phones turned off and put away during the competition. Students may not make or receive phone calls during the competition; students may not send or receive text messages during the competition. If a student uses a cell phone after the start of a meet, the student should be penalized one point. If the use of the cell phone occurs during a team question, then the team score is zero.

Policy for English Language Learners (ELL)

Due to the variety of languages spoken by Delaware's recently arrived students, the Delaware Secondary School Mathematics League is unable to provide accurate translations of questions and maintain contest security for all Math League participants. The consistent and reasonable accommodation that we offer is to allow students to use a translator device or dictionary during the contest. Since speed and accuracy are an inherent part of the competition, no additional time is permitted for ELL students during Math League meets. The Delaware Secondary School Mathematics League policy for ELL is as follows:

A student who has limited English proficiency may use a non-technical translator device or dictionary during Math League meets. If an electronic translator device is used, it must not be capable of performing any arithmetic computations. The dictionary or translator device should be inspected by coaches from other schools at the time of the meet to verify that there are no notes written in the book and that the book/device fits the guidelines. All students will have the same amount of time for each question.

A coach with a student needing the above accommodation should contact the appropriate State Coordinator for Math League at least two weeks prior to the first meet. The State Coordinator will notify the coaches in that region. Regional Coordinators should keep track of the student/language/school needing the accommodation.

Responsibilities of the Team Coach *The team coach will:*

1. Register his/her school's teams for the regular meets as well as register any teams or individuals selected to attend the Invitational Meet and Awards Banquet.
2. Accompany teams to regional meets; accompany teams/At Large students to Invitational Meets.
3. Follow up on registration payments. To assist coaches, the appropriate Math League Coordinator will send confirmation of registration and then another confirmation when payment is received.
4. Read the rules document carefully. Explain the scoring guidelines to team members.
5. Arrange transportation to and from all meets for team members.
6. Notify the coach at the host school if your team will not be participating in a meet.
7. Coaches should check their e-mail on the day of the meet for any last minute communications regarding the meet.

8. Bring a neatly printed alphabetized list of participating students to each meet. If there are more than five student names on that list, indicate which students are answering which questions. Make certain students know this information prior to the meet. **There is a serious penalty for submitting more than five answers to a question. If more than five students from the same team compete on a question, then ALL of the answers on that question for that team must be disallowed for the team score and for the individual students.**
9. Stay with the team to assist with supervision of participating students.
10. Score other teams' score sheets.
11. Submit signed score sheets for each of his/her teams to the Regional Score Keeper at the end of each meet.
12. Assist the Regional Score Keeper with updating the scoring spreadsheet as needed.

Responsibilities of the Regional Coordinator *The Regional Coordinator will:*

1. Send a reminder during the week prior to the meet to all coaches about the meet location and the starting time.
2. Watch for the delivery of contest questions the week before the scheduled meet. Contact Denise I. Griffiths at dgriffit@udel.edu or 302-475-7961 if the questions have not arrived by Wednesday before the meet. ***(Please note that questions are mailed to the Regional Coordinator and NOT to the Host School.)***
3. Store the sealed question package in a secure place. **Questions must remain sealed until the meet begins.** Take the questions to each meet.
4. Notify all coaches if a meet has to be canceled. (See Snow Procedures on page 8.)
5. Make certain that all coaches in the region have school phone numbers (and extensions if appropriate), home or cell phone numbers, and e-mail addresses. The Math League Coordinator will distribute a master list of contact information prior to the first meet. ***Notify the Math League Coordinator if there are any corrections for the master list.***
6. Keep track of any student needing ELL accommodation.
7. Collect all appeals not mutually settled by the regional coaches and forward to the appropriate Math League Coordinator.
8. Forward any meet irregularities to the appropriate Math League Coordinator.
9. Distribute any correspondence to the coaches at the meet.

Responsibilities of Regional Score Keeper (may be same person as Regional Coordinator but recommend that one person do only one grade level.) *The Regional Score Keeper will:*

1. At the end of each meet, enter scores for students and teams onto an Excel spreadsheet. **If more than five students from a team compete on a question, then ALL of the answers on that question for that team must be disallowed for the team score and for the individual students.**

2. E-mail the spreadsheet scores to other regional coaches and the appropriate Math League Coordinator **after each meet**. The scores for the first meet should be received within two weeks of the meet. Scores for the remaining meets should be received no later than ten days after the meet.
3. Notify the appropriate Math League Coordinator immediately if there is any change in the number of schools/teams participating in the region.
4. Keep all the score sheets for the region until after the Math League year is over.
5. Make any adjustments to the spreadsheet scores if contacted by the appeals judge.
6. Review the scores of the last meet with all coaches so that accurate individual and team standings can be determined. Submit a completed Regional Standings Form and spreadsheet to the appropriate Math League Coordinator. After the standings are reviewed by the Math League Coordinator, the official regional standings will be distributed by the Math League Coordinator to all coaches in the region so that the Invitational registrations can begin.

Responsibilities of the Host School (Please note that questions are mailed to the Regional Coordinator and NOT to the Host School.) *The host school will:*

1. Arrange for sufficient rooms to accommodate all of the teams in the region (5 students per team plus substitutes). During the individual questions, provide spacing so that team members are separated and there is sufficient space between participants. Team members should sit behind each other. Teams from the same school should not be seated adjacent to each other.
2. Provide student guides or signs at entry of the school to direct visiting teams to proper location.
3. Provide scrap paper, extra pencils, and a sharpener (if possible) in the meet room(s).
4. Prepare a grid on the chalkboard or overhead for displaying the scores.
5. Assign seat locations to each team.
6. Provide refreshments (beverage and snack) for all participants. (Some regions may choose to rotate the responsibility; some regions may decide not to serve refreshments.)
7. Assign coaches to score teams other than their own.

League Awards

Each school will receive Certificates of Mathematics Achievement to be awarded at the school to each Math League participant.

Schools compete within their region. Regional awards will be distributed at the Invitational Meet and Banquet. At each level of competition (7th, 8th, 9th and 10th-12th grades), regional awards will be given as follows:

1. 1st and 2nd place teams (teams with the top two scores; ties can occur) in regions with at least six teams; 1st place team in smaller regions (fewer than six teams)
2. 1st, 2nd and 3rd place individuals in each region (students with the top three scores; ties can occur).

Team standings and Invitational attendees will be determined based on the points earned after all four meets.

Invitational Meet

In addition to the League Awards, the placing teams of each region will compete at the Math League Invitational Meet and Banquet. In the event that the 1st and 2nd place teams are from the same school, the highest scoring team from a different school will also be invited to the Invitational Meet and Banquet.

Each region will also invite **up to five** At Large students. If there are ties for the fifth At Large slot, all students with that score should be invited. (*Note: If a region has 5 teams, then that region is entitled to send the 1st place team and eligible At Large students to the Invitational. If a region has three or four teams, then the Math League Coordinators will devise an Invitational plan for that region.*) At Large students will compete as individuals. The guidelines for selecting **up to five** At Large participants are:

1. Students taking 1st, 2nd or 3rd place individual awards who are **not** on a placing team.
2. Top scoring individuals **with at least a total score of 10 for the four regular meets from NON-PLACING SCHOOLS.**
3. In cases of ties, all students with that score should be invited.

In selecting the At Large students, the Regional Score Keeper should select up to five (More than five can be selected if there is a tie for the last slot.) students using the indicated guidelines. First, the Regional Score Keeper should confirm that the students receiving 1st, 2nd and 3rd place individual awards are on placing teams. If not, then those individuals should be invited as At Large participants. If there are remaining openings for the five At Large slots, then the top scoring students **with at least a total score of 10 for the four regular meets from NON-PLACING SCHOOLS** should be invited as At Large participants. If there is a tie for the last spot, then all students with that score should be invited.

Note that the student earns the At Large spot and not the school. Consequently, there are **no substitutions for At Large positions.** If a student earns an At Large spot but cannot attend, neither the school nor the region can take the next person in line.

The Invitational Meet will take place after school at the regular meet time. Score Keepers and coaches will tabulate the Invitational winners at the conclusion of the meet. The banquet will follow at 6:00 PM. Awards will be presented at the banquet for the regional winners listed above, as well as the Invitational Meet awards. For each level of competition (7th, 8th, 9th, 10th-12th grades), Invitational Meet awards will be given as follows: (1) top 3 individuals, (2) top 4 teams, and (3) perfect scores. More complete information on the Invitational Meet will be distributed in February.

Snow Procedures

If any school closes because of snow, it will be the responsibility of the Math League coach from that school to contact the appropriate Math League Coordinator (Denise for Grades 7-8 at home 302-475-7961 / cell 302-354-0270 or Tom for Grades 9-12 at school 302-631-4700 x 14422 / home 302-998-1332 / cell 302-419-8337). Upon receiving such information, Math League will be canceled for the entire state. In the event of such a cancellation, the Math League Coordinators will call the *regional coordinators* about the cancellation. It will be the responsibility of the *regional coordinator* to contact the host school and the coaches at each of the other schools in the region. Coaches should check their e-mail on the day of each meet for any last minute communications.

Please make a photocopy of the list of Math League coaches and phone numbers and keep one copy at home and one at school so that the Math League contact information is handy in the event of a snow cancellation day.

Two snow make-up dates are built into the Math League calendar. These dates are to be used if a 3rd meet is needed. The snow make-up dates are Monday, January 30, 2017, and Wednesday, February 8, 2017. If the 4th meet has to be cancelled for snow but three meets have been held, the 4th meet will not be made up. In that situation, team standings and Invitational attendees will be determined based on the points earned after the first three meets.