Welcome to the MCTM St. Louis Elementary Regional Contest at Sperreng Middle School!

Schedule of Events

8:00 – 8:30 Registration
8:45 – 8:55 Orientation of Students and Proctors in Cafeteria
9:00 – 9:10 Number Sense Event (Calculators may not be used.)
9:15 – 9:55 Target Event (Calculators may be used.)
10:00 – 10:15 Restroom Break
10:15 – 10:55 Sprint Event (Calculators may not be used.)
11:00 – 11:20 Team Event (Calculators may be used.)
Lunch Break
1:30-2:00 Awards Assembly in Cafeteria

All participants are required to PRE-REGISTER for the St. Louis Elementary Regional at http://mathleague.org/register0.php?event=14105 by March 31, 2027. Please consider paying the $10 per student online by using the Paypal link at the very bottom of your confirmation email from mathleague. Payment of $10 per student can be made online by credit card or in person with cash or check made out to MCTM. No substitutions of participants will be allowed.

For **all of the rounds**, students should report to the Cafeteria.

Parents may wait in the Hangar while students are testing.

Students and parents are required to read the Mathleague Code of Conduct before participating in this event.

Compared to everyday activities, a math contest carries a greater risk of exposure to people who are unvaccinated, unmasked, or unwell. Participants in our contests (both students and chaperones) are asked to consider these risks when deciding whether to participate in our contests and to take appropriate precautions to keep themselves and others safe. In particular, all participants at our events (students, chaperones, and staff) are encouraged to wear masks at our events, get vaccinated when possible, and stay home if they feel unwell. Masks are not required.

Event Descriptions

Number Sense: The test consists of 80 questions and is limited to only 10 minutes. There is no intermediate time signal given; at the end of 10 minutes the students must immediately stop writing (they are not allowed to finish incomplete answers started before the stop signal). The questions are best answered in order; a skipped question is scored as a wrong answer. Since Number Sense is designed to test students' mental math abilities, no calculators or scratch paper may be used during competition. In order for a question to be scored as correct the ***exact*** answer must be given (no allowance for rounding). The *exception* is where the question is preceded by an asterisk, in which case the student's answer must be within 5 percent of the exact answer for the question to be scored as correct. Five points are awarded for each correct answer while four points are deducted for each wrong or skipped answer. However, questions not answered beyond the last attempted answer (defined as any problem where a mark or erasure exists in the answer blank for that problem) are not scored.

Target Event: Four pairs of problems are administered, and students have 6 minutes to complete each pair. Answers must be fully simplified and, where appropriate, given in the format asked for in the question. Although measurement units are not required unless specified, any units written by the student as part of the answer must be correct for the problem to receive credit. Students may use any calculator allowed for use on the SAT. Ten points are awarded for each correct answer, with no penalty for skipped or incorrect answers.

Sprint Event: This is a 40-minute multiple choice test consisting of thirty questions. Students may not use calculators on this test. Four points are awarded for each correct answer, and 1 point is subtracted for each incorrect answer, with no penalty for skipped questions.

Team Event: One to four team members of various or same grade levels from the same school work together for 20 minutes to answer ten questions. Answers must be fully simplified and, where appropriate, given in the format asked for in the question. Although measurement units are not required unless specified, any units written by the student as part of the answer must be correct for the problem to receive credit. Students may use any calculator allowed for use on the SAT. Ten points are awarded for each correct answer, with no penalty for skipped or incorrect answers.

Strategies to Share with Sponsors and Students

- Team Formation: Students should be organized into teams of 1-4 students for the team event prior to the day of the contest. Teams can be made up of 1-4 students of mixed or same grade levels FROM THE SAME SCHOOL; we encourage mixed grade level teams since a fourth grader may be stronger in a particular topic than a sixth grader just because he or she recently studied that topic in school. Every student attending will take the team test.
- The team event will be a part of the Sweepstakes score. A school's Sweepstakes score is obtained by adding the top 4 individual point totals from the school, dividing by 4, and adding the school's top score on the team test. A maximum team total would be 400 points (300 points if the school had four members with perfect individual scores, 100 for the team test). Ties are broken by comparing team test scores (weighted by item analysis). If a school is not comprised of 4 members, there will be a 0 added into the sum for each missing school member before dividing by 4.
- During the restroom break (approximately 10:00-10:15), students are expected to remain in the area near their testing room. Restrooms and a water fountain will be nearby. Students may bring and eat a small snack ONLY during the break between testing.
- No student will be allowed to enter a testing session after a test has begun. Students are expected to remain in their assigned area and to refrain from talking throughout the individual testing sessions. Any student making disruptive noises may be asked to leave the room. During the team event, students should talk quietly with their teammates so that they do not inadvertently share answers with other teams.
- Students should bring at least 2 sharpened pencils and a calculator. Any calculator allowed on the SAT may be used (http://sat.collegeboard.org/register/calculator-policy). Calculators are allowed ONLY on the Target and Team Events. A student must furnish his or her own calculator. Calculators are NOT allowed on the Number Sense and Sprint Events. Students may NOT use cell phones or be wearing smartwatches during the contest. These need to be put away at all times students are taking a test. STUDENTS MAY NOT USE CELL PHONES AS CALCULATORS OR TRANSLATORS.
- Students may not use any dictionaries or other reference materials. If any student's proficiency in the language(s) the tests are offered in is so severely limited as to preclude participation in mathleague.org contests, that student's coach may make arrangements with mathleague.org to provide a written translation of the tests, so long as the translation can be accomplished in a timely and secure fashion, and at no cost to mathleague.org. Any such translation must be approved by mathleague.org before use at a contest.
- Only answers written in the proper spaces will be graded. Any blank space on the test may be used for any work to help you solve the problem. Scratch paper will be provided for the Sprint and Team events.
- Instruct students to not be concerned with writing units unless the question prompts them to do so.
- Fractional numbers must be expressed in simplest (lowest) terms or as an equivalent decimal fraction, unless a ratio is requested. For example, 0.33 is not equivalent to 1/3 and would be counted incorrect if the answer were 1/3. All improper fractions should be left as improper fractions.
- Mental computation and estimation items are intended to be performed mentally. Paper and pencil computation may be slower, allowing less time for working problems.

- Each participant will receive a Ribbon of Participation.
- The students earning the five highest scores in Number Sense, Target, and Sprint at each grade level will be recognized. The top five Sweepstakes scores will also be recognized. In each grade level, the top ten combined scores (target score plus sprint score plus one fourth of the number sense score) will be recognized and will participate in the MCTM State Finals Elementary Mathematics Contest. Any student whose score has contributed to the first place Sweepstakes score in Division 5 and Division 6 (the first place overall Sweepstakes team score, NOT the first place team event score) will participate in the MCTM State Finals Elementary Mathematics Contest. At state, all individuals who qualified individually or through the team event will take all events (Number Sense, Target, Sprint, and Team).
- For the Regional and State Math Competitions, there are two different ways that ties are broken for awards. If two students tied with the same score in an event (e.g. Target with a score of 30), their Borda scores were compared to see which student answered the more difficult questions. The student with the lower Borda score would place higher than the other. To break absolute ties in Sprint or Target at either the Middle or Elementary level, we looked at the students' opposing event scores. Say that Students A, B and C are all tied with a score of 30 on Target, all with the same Borda scores indicating they answered the same 3 questions correct. We then look at their Sprint scores. Say Student A has a Sprint score of 60, Student B has a sprint score of 55, and Student C has a sprint score of 50. Then to break the tie on Target, Student A would be first, Student B would be second, and Student C would be third. In Number Sense, if a tie occurs, the students generally have the same number correct and the same number incorrect to get the score they receive. To break this tie, we looked at the two students' sheets, and the student who answered the highest number question correct would receive the higher place. So, for example, Student A's last correct answer is question #30 and Student B's last correct answer is #38; Student B would win the tie.
- In addition to releasing the test materials, results of ALL sites will be available online at http://mathleague.org/results/elementary/ after the results have been finalized by the site coordinator. Students' names will not be listed; the school's name will be listed and the student's first and last initials. Students will now be able to see how they rank with regard to everyone else at a particular site and across the state. Please encourage all students to understand the penalty for guessing on all events. On Number Sense, they should answer quickly but accurately. On Sprint, students should once again work accurately and generally not guess unless they can narrow it down to 2 choices. It is possible and probable that students will receive negative scores on the Number Sense and Sprint rounds due to not understanding the penalty for incorrect answers. For example, a student who gets 2 questions correct on Sprint and then guesses on the remaining 28 (getting all 28 wrong) would have a score of $4\times2 - 28\times1 = -20$. On Target and Team, students should never leave a question blank—they should always guess since there is no penalty for guessing.

Any student whose total individual performance at the regional playoff is among the top 10 at the student's grade level in the student's region will be invited to compete in all events at that year's state championship. Also, any team member of the first place overall school in the school's division, based upon the sweepstakes score; or a team member of one of the top 5 schools in the school's division across all regions in Missouri; and one who contributes to the school's sweepstakes score by either having one of the 4 highest individual point totals from the school or being a member of the school's top-scoring team on the team round, will be invited to compete in all events at that year's state championship.

The State Math Competition will be held at Rock Bridge High School in Columbia, MO on Saturday May 8, 2027. Click here for all details about the State Contest.

All participants are required to PRE-REGISTER for State at by May 5, 2027, and please consider paying the $10 per student online by using the Paypal link at the very bottom of your confirmation email from mathleague. Payment of $10 per student can be made online by credit card or in person with cash or check made out to MCTM. No substitutions of participants will be allowed.

Information/Instructions for Proctors

Students may NOT use cell phones as a calculator or be using earbuds during testing. All cell phones should be silenced and put away. Calculators should also be placed on the floor until events that allow their use.

- Number Sense: Distribute the folded Number Sense sheets. **Instruct students to place their labels**. "Everybody, take TWO stickers, and then stick one in each of the boxes that says 'place ID sticker inside this box.'" Placing the labels uniformly helps the graders. Explain to the students, "You will have 10 minutes to work on this event. The questions must be answered in order; a skipped question is scored as a wrong answer. There is no intermediate time signal given; at the end of 10 minutes you must immediately stop writing (you are not allowed to finish incomplete answers started before the stop signal). Since Number Sense is designed to test students' mental math abilities, no calculators or scratch paper can be used during competition. Scratchwork is discouraged but can be done in the margins. Any non-math symbols are not allowed. In order for a question to be scored as correct the ***exact*** answer must be given (no allowance for rounding), ***except*** where the question is preceded by an asterisk, in which case for the question to be scored as correct your answer must be an integer within 5 percent of the exact answer. Five points are awarded for each correct answer while four points are deducted for each wrong or skipped answer. However, questions not answered beyond the last attempted answer (defined as any problem where a mark or erasure exists in the answer blank for that problem) are not scored. Be sure to start with question #1 on opening the folded exam. Are there any questions?" Give the students exactly 10 minutes to work after which they should be instructed, "Stop! Put your pencils down and hold your test in the air; a proctor will be by to collect your answer sheet." Have a proctor deliver these to the grading room.
- Sprint Round: Pass out a copy of the answer sheet and scratch paper to each student. **Instruct students to place their labels**. "Everybody, take one sticker, and then stick it in the box that says 'place ID sticker inside this box.'" Placing the labels uniformly helps the graders. Pass out the tests face down. Explain to the students, "You will have 40 minutes to complete this test. There are thirty multiple choice questions. You will be awarded 4 points for each question answered correctly, -1 for each incorrect answer, and no points for unanswered problems. You may NOT use a calculator. Are there any questions?" Give verbal time warnings when 20 minutes remain and when 5 minutes remain. Give the students exactly 40 minutes to work, after which they should be instructed, "Stop! Put your pencils down and hold your answer sheet in the air; a proctor will be by to collect your answer sheet." Collect the answer sheets and send them to the grading room.
- Target Round: While the first pair of questions is being distributed folded so that they can place their labels but not see the questions, explain to the students that, "You will be given four pairs of questions in the target round, and the first pair is being handed out now. Once the signal is given to begin you will have exactly six minutes to solve the two questions you have been given. Make sure your answers are written in the answer blank before time is called. After six minutes all official answer slips for questions one and two will be collected. Students may use any calculator allowed for use on the SAT. You will be given ten points for each problem answered completely correct; there is no penalty for incorrect answers. Do not turn your questions over until the signal is given to begin. Are there any questions?" **Instruct students to place their labels**. "Everybody, take one sticker, and then stick it in the box that says 'place ID sticker inside this box.'" Placing the labels uniformly helps the graders. Once everyone is ready to start the first round, tell the students they may begin. Give a verbal time warning when one minute remains. After exactly six minutes, tell the students to "Stop! Put your pencils down and hold your answer slip in the air; a proctor will be by to collect your answer slip." After all the answers are collected, begin to pass out the next set of questions. After making sure every student has a copy of the questions for round two and has placed his/her label on the test, begin the second round. Continue this pattern until all four rounds have been completed. After the end of each round, make sure the answer slips are sent to the grading room.
- Team Test: Distribute one set of questions face down to each person, and give each team an answer sheet and scratch paper. Team size is at least one with a maximum of four students. Instruct the teams to indicate their school and all of their names on the answer sheet, or have each student place one of his/her labels on the answer sheet. **Instruct students to place their labels**. "Everybody, take one sticker, and then stick it in the box that says 'place ID sticker inside this box.'" Placing the labels uniformly helps the graders. Tell the students, "You will have twenty minutes to complete the team test. Your team may work together but may not consult any books, other teams, or any other resources. You may use any calculator approved for the SAT. You will be given ten points for each problem answered completely correct; there is no penalty for incorrect answers. Are there any questions?" Give a verbal time warning when 3 minutes remain. After twenty minutes, instruct the teams, "Stop! Put your pencils down and hold your answer sheet in the air; a proctor will be by to collect your answer sheet." Send the answer sheets to the grading room.
- **All** tests, answer sheets, and scratch paper, used and unused, are to be collected, secured in some kind of container, and taken to the grading room. Students are to be released.