

"Math Is Cool" Rules — 4th – 8th Grades

GENERAL INSTRUCTIONS applying to all tests:

See online contest page for adaptations to procedures for the online environment.

- Good sportsmanship is expected throughout the competition by all involved (competitors and observers). Display of poor sportsmanship will result in disqualification.
- Competitors **may not use calculators or any other aids** on any portion of this contest.
- Unless stated otherwise:
 - **ALL ANSWERS ARE INTEGERS.** Non-integer solutions will be "coded" as integers.
 - **ALL ANSWERS MUST BE WRITTEN AS INTEGERS.** For example, if the answer is '6', the answer should be written as '6', not 6/1 or 12/2.
 - Express all rational, non-integer answers as common fractions A/B . An example of integer "coding" is that the requested answer could be: what is the value of $A + B$?
 - For problems dealing with money, give the answer to the nearest cent.
 - For 5th grade and up, all fractions and ratios must be reduced to simplest form, all radicals must be simplified, and all denominators must be rationalized.
 - Leave answers in terms of π or other irrational quantities (e.g., $\sqrt{2}$). That is, don't round or approximate. Answers will be coded as integers, for example: area = $A\pi$, what is A ?
- Units are not necessary as part of your answer. However, if you choose to use units, they must be correct.
- Record all answers on the colored cover sheets in the answer column only.
- **Be sure that the name, team number, etc. at the top of every answer sheet has been filled out.**
- Tests will be scored as a 0 if answers are not recorded correctly on the answer sheets.
- Blank answer sheets and answer sheets with no name will be scored as a 0.
- Teams must be in the classrooms on time. Late teams will miss out on events in progress.

MENTAL MATH - 30 seconds/question, 8 problems, ~25% (team) & ~8% (individual) of score

All students will concurrently be asked the same eight questions in this individual test. When it is time to begin, the proctor will read the first question three times. You may not do any writing or talking while arriving at a solution— solve the problem entirely in your head. Once you have a solution, record it on the answer sheet. **You may not change an answer once you have written it down. If there are indications of alterations, the answers will be marked wrong. If there are indications of scratch work on the paper, ALL answers will be marked wrong.** A time of 30 seconds will be provided after a question is read before going to the next question. You may continue to work on a problem (in your head) while the next question is being read. The raw score is 1 point per correct answer.

INDIVIDUAL TEST - 35 minutes, 40 problems, ~92% of individual score

When you are prompted to begin, open the problem/answer sheet form and begin testing. No talking during this individual test. You will be given a 5-minute time warning. Correct answers receive 2 points for problems 1-30 and 3 points for problems 31-40.

TEAM MULTIPLE CHOICE - 15 minutes, 10 problems, ~20% of team score

When you are prompted to begin, open the problem/answer sheet form and begin testing. Teams may quietly discuss the problems among themselves. **Because this is a multiple choice test, ONLY a letter response should be indicated as an answer on the answer sheet.** Leave the answer blank indicate no response. This test is the only test where you will be penalized for incorrect responses. You will receive raw scores of 2 points for a correct letter response, 0 points for leaving an answer blank, and -1 point for an incorrect response.

TEAM TEST - 15 minutes, 10 problems, ~30% of team score

When you are prompted to begin, open the problem/answer sheet form and begin testing. Teams may discuss the problems among themselves. The raw score is 1 point per correct answer.

TRIPLE JUMP - 15 minutes, 10 problems, ~15% of team score

When you are prompted to begin, open the problem/answer sheet form and begin testing. Teams may discuss the problems among themselves. The team will submit answers for the problems three times during the event, once at 5 minutes, again at 10 minutes, and a third time at 15 minutes. Teams are responsible for keeping track of their answers between submittals. Answers may be changed from one submittal to the next. Answers do not carry over from one submittal to the next, they need to be reentered each time. There is no penalty for an incorrect response. The team will receive 1 point per correct answer for each submittal for a total of 30 points possible in the raw score.

COLLEGE BOWL - up to 10 minutes per round, 10 problems per round, ~10% of team score

1. All competitors must be facing the front of the room in one row, with any spectators (if allowed) behind the competitors.
2. A maximum of ten questions per round will be scored. It is OK for both teams to score the same number of points! The proctor will record points earned on each team's score sheet (which is retained by the proctor).
3. You may use scratch paper & pencil. You may talk with your teammates while arriving at a solution.
4. An electronic College Bowl Apparatus will be used to identify the first team to have an answer.
5. During these rounds, each question will be read twice and a maximum time of 45 seconds after the second reading of the question is completed will be allowed for a team to answer. If a team buzzes in after the second reading and gives an incorrect response, the other team has the remainder of the 45 seconds to respond. A team is allowed only one attempt at buzzing in and answering per question. You may interrupt (buzz in) while a question is being read, however, if you do, the proctor will stop reading, and an immediate response is needed. If the correct response is given, the proctor will proceed to the next question. Otherwise, the question will be re-read for the other team, making sure it has two full readings. If an immediate response is not given after a team buzzes in, their lack of an answer in a timely manner is considered incorrect. In the event that only one team is competing in a round (i.e., one team is absent), the team competing will have a maximum of 30 seconds after the completion of the second reading in which to buzz in. The proctor will give a 5-second time warning.
6. Teams should wait to be acknowledged by the proctor before answering.
7. If two students from the same team answer at the same time with different answers, the answer will be considered incorrect.
8. If a problem arises with one of the questions, an extra question will be asked to replace that question.
9. If the college bowl event finishes early, everyone must stay in the room for the remaining time.

FINAL SCORES and TIE-BREAKING

Individual awards are determined by both the Mental Math and Individual Test scores for each student, with Mental Math contributing 8% and the Individual Test 92% to the scaled individual score. Individual ties are broken based on the following, in this order: total scaled individual points, total number of questions answered correctly on the Individual Test, Mental Math raw score, number of questions correct from Individual Test problems 31-40, number of questions correct from Individual Test questions 16-30, highest numbered single question answered correctly on the Individual Test starting with question 40 and working backwards. The School score is calculated using the highest score amongst all of the school's team-of-four scores in each event (thus more than one team-of-four may contribute to the score and all students from the school share in the award). The School score is calculated as $2 \cdot (\text{Sum of highest 3 Mental Math scores}) + 2 \cdot (\text{Multiple Choice}) + 6 \cdot (\text{Team}) + 1 \cdot (\text{Triple Jump}) + 1 \cdot (\text{College Bowl})$ for approximate event weights of 25%, 20%, 30%, 15%, and 10%, respectively. Team ties are broken based on highest event score in the order of the events, starting with Mental Math. Advancement to Masters is based on the score without the College Bowl component.