

SBMT Mini-Event Descriptions

General

Mini-events are split into two rotations. Each rotation will consist of two mini events: one being a solo event and the other a team based event. If your child is in one rotation, they will only be able to participate in the two mini events of that rotation. At the end of the mini-events, participants that do the best will be recognized by prizes. For any questions regarding mini-events, please contact info@southbaymt.org.

Team Formation

Since each rotation consists of a team based event, the logistics of forming a team is imperative. This year we plan to form teams before the start of the event.

As a result, participants have a choice to form their own teams. Before the start of the tournament, a team registration form will be sent to all participants. One form must be submitted by each prospective team, indicating the members and the rotation the team plans to partake in. When submitting, please make sure that all team members are **in agreement of the team** and that all team members **are in the same grade and rotation**. If the team does not meet these guidelines, the team preference will not be considered. Once a form has been submitted a confirmation will be sent out. Near the tournament date, participants without team preferences will be assigned to them by the SBMT Staff. After this point, neither the teams nor the rotation can be changed.

Blue Rotation

1) Judgement

Inspired by HMMT's "Guts"

Judgement is a team based event. At the start of the event, each team (consisting of 3 members) will receive a piece of paper containing the first set of problems that the team must solve collaboratively. Once the team is satisfied with their answers, they will turn in the current set and receive the next set of problems. However, after they turn in a set of problems, they will not be able to go back and change their answers! Grading is immediate and a live scoreboard will be displayed with updated scores. Teams are not expected to be able to answer all the questions - skipping certain ones in hopes of solving other problems in later sets is a valid strategy. Problems are weighted such that the later sets are worth more, so teams can choose to optimize for the maximum number of points if they are running low on time (i.e. either check the answers for the current set they're on, or move on to the higher weighted problems). In total, there will be 7 sets with 1-5 questions per set, with

each set having higher weighted problems. The themes of sets are projected to include math, puzzles (i.e. Game 24, Sudoku, etc.), basic cryptography, and estimation. Teams with the most points at the end of the event will win. This event will require a unique combination of math, teamwork, and strategy!

2) Rubik's Cube (Contestants do not have to bring their own cubes, we will provide them)

Rubix cube is an individual event. Contestants will have two options in this event. They have the choice to participate in a timed solve for the 3x3 Rubik's cube against overall participants to determine the fastest individual time, or play around with methods to solve harder cubes (not timed) such as a 2x2, 4x4, pyraminx, petaminx,..etc. There will be multiple types of each cube available, such that even if you don't want to do a competitive solve and just want to play around with different types of Rubik's cube, there will easily be enough cubes for you to do that with friends!

Red Rotation

1) Countdown

Countdown is a solo, fast paced, buzzer game in which the participant is presented with short answer problems, and are given 45 seconds to answer each question. The first participant to buzz in and get the question correct will receive points for their answer. If a participant gets the answer wrong after buzzing, they will no longer be allowed to answer the current question. If all players get the question wrong or time expires, then the proctor will move on to a new question. Participants will compete in heats to determine an overall winner for each grade. Participate in this event if you like fast-paced games!

2) Estimathon

Estimathon is a team based game in which participants will form teams of 3/4 in an effort to estimate values presented to them. Teams will receive question papers containing 15 things they have to try to estimate within a certain time limit, in addition to 30 answer slips. The teams submit their estimates to a question to the proctor, who immediately gives them a grade out of a certain number of points on that question. Teams can submit as many answers to a certain question as they wish, however their last submission will be their final score for that question and they only have 30 total submissions. The winning team is the team who receives the highest total number of points across all 15 questions.

Question Example: How long in feet is the Golden Gate bridge?

Correct Answer: 8,981

Grading Formula:

$$f(x) = \max\left(0, -\left|\left(\frac{100}{a(1-h)}\right)(x-a)\right| + 100\right)$$

Where x is the answer the contestant gives, a is the correct answer, and h is the scaling factor of the grading, a number from 0 to 1 and generally from 0.4 to 0.6.