



MESA DAY CONTEST RULES

2023-2024

(DRAFT)

Math Escape Challenge (Online)

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| LEVEL: | Middle School (MS) & High School (HS) |
| DIVISION(S): | Grades 6-8 (combined) and Grades 9-12 (combined) |
| COMPOSITION OF TEAM: | 2-3 students per team |
| NUMBER OF TEAMS: | Preliminary – Determined by your local MESA center Regional - # of teams per division at the discretion of each region (Northern/Central, LA/Central Coast, and Southern) |
| SPONSOR: | University of the Pacific MESA College Prep Cal State LA MESA College Prep |

OVERVIEW: Students will collaborate in teams of two to three to solve challenging math problems utilizing their knowledge of their grade level math. Math problems focus more on students' ability to **problem solve using critical thinking instead of just pure computation**. In addition to the math problems, students will also navigate through an online escape room with the goal of “escaping” the quickest. **Participation logistics and limits may vary by host site. Advisors and students are responsible for verifying this information with their local MESA center. This competition will be virtual for 2023-2024 but can also be hosted in-person, dependent upon the host center.**

MATERIALS: The Host Center will provide the following:

- A Zoom meeting invitation
- A series of questions will be given to each team via the Brain Chase platform

There are no restrictions on tools (e.g., calculators, scratch paper, etc.)

Scratch Paper:

- For **preliminary events**, centers may require students to submit their scratch paper at the end of the competition - check with your MESA center if this is a requirement.

- For **regional events**, scratch paper **will** be collected immediately at the end of the competition - students who do not submit scratch paper cannot place.
- Host Centers - for collecting scratch paper you can use resources such as Wufoo Forms, Google Forms, e-mail submission, etc. Students can take a photo of their scratch paper to submit.
 - Each student on the team must turn in their scratch paper.
 - The student's name, grade level, school, and MESA center should be written on their paper.

GENERAL RULES:

- 1) Teams must consist of 2 to 3 students.
- 2) There is no restriction on the composition of a team; teams may consist of students from any grade or math level. It is suggested that teams consider the math levels of their teammates; they should have a good balance of math knowledge within their team.
- 3) All team members must login to the Zoom meeting 15 to 20 minutes prior to the competition start time so that proctors can put them in their break-out rooms and a quick overview of the competition can be given.
- 4) Each team member's name, school name, (and MESA Center for Regionals only) must be listed as the login name for Zoom to be placed in the appropriate break-out room.
 - a) There are only 15 characters available for your Zoom name
 - i) For Preliminaries, names should look like: School Name_Team Member Name
 - ii) For Regionals, names should look like: MESA Center_Team Member Name
- 5) Teams will be allowed 1 ½ hours (90 minutes) to solve the math problems **and** complete the escape room portion.
- 6) There will be three math questions for teams to solve.

TECHNICAL:

- 1) Teams will designate a "Team Leader" who will be given the login information and access to the Brain Chase platform at the start of the competition. The **designated team leader** will need to:
 - a) Log in to the Brain Chase platform on behalf of the team - **only** the team leader must log in,
 - b) In Zoom, share screen with their teammates during the competition once put in their breakout room, and share for the duration of the competition until they complete the challenge, and
 - c) Input the answers into the Brain Chase platform.
 - d) **Note** that the student who takes on the role of Team Leader should have a stable internet connection.
- 2) All team members should make sure that they have access to Zoom prior to the competition, including the ability to be moved into breakout rooms and participate in Host Center Zoom invitations. **Note** that students may need to use a personal email address if there are restrictions on their school accounts.
- 3) If the Team Leader is dropped from the Zoom meeting, the remaining team members need to

alert the judges by using the “Ask for Help” button on the bottom of the Zoom screen. The Team Leader should attempt to return to the competition as quickly as possible. In the interim, another team member will be designated as the alternate Team Leader and will be assisted with logging into the platform.

- 4) Math problems will not focus on computation. Teams will need to heavily rely on problem solving and critical thinking skills to get through the math problems **and** the Escape Room (e.g., one math problem can utilize more than one math concept and students will use critical thinking to determine which concepts to use).

JUDGING:

- 1) The lead contest judge will assemble all participants and review the event guidelines and judging criteria, prior to opening up breakout rooms for teams. Students and teachers can review competition logistics here: <https://tinyurl.com/MDMath22>.
- 2) Per General Rule # 4, each team will ensure that their Zoom login name has each of the team member’s name, school name, (and MESA Center for Regionals only).
- 3) Teams need to click on each “ Challenge Icon” to solve a math problem. When a correct answer is submitted, teams are given a hint about the Escape Room challenge portion. Team members should write down these hints because they will help the team navigate the Escape Room.
- 4) To successfully complete the competition, teams must complete all math problems **AND** break out of the virtual Escape Room.
- 5) All answers to the math questions are time stamped as well as the time they escaped the room. **In the event of a tie** (i.e., multiple teams completing the Escape Room portion at the same time), judges will rank teams based on who completed all the questions the quickest.
- 6) Note again, the Host Center may require scratch paper that “shows your work” to be submitted at the end of the competition. Check with your local MESA center to see if this is a requirement. Regional events **will** require the submission of scratch paper.

SCORING:

- 1) Winning teams will be determined by the following in this order:
 - a. Teams completing the Escape Room portion of the challenge in the quickest time.
 - b. **If no teams complete the Escape Room**, winners will be determined by the highest number of problems completed in the allotted time. Note that every problem is time-stamped in the Brain Chase Platform to help determine the winning teams.

AWARDS:

- Medals will be awarded for 1st, 2nd, and 3rd place.
- Please check with your MESA center to determine the number of teams that advance to Regional MESA Day.

ATTACHMENTS:

- Overview of the Brain Chase Platform
- Math Concepts Resource
- Teachers and Directors

Overview of the Brain Chase Platform

An overview will also be presented at the start of the Math Escape Room competition, but students are encouraged to familiarize themselves with the platform beforehand. The quick-guide is a more simplified resource that will be presented on the day of the competition and can be used as reference. Please see links below:

- Competition Logistics Overview: <https://tinyurl.com/MDMath22>
- Competition Quick-Guide: <https://tinyurl.com/mathescapequickguide21>

For MESA Center Directors and teachers hosting a competition at their school only (please e-mail Rose directly for access - rcureton@pacific.edu): <https://tinyurl.com/mathescape22judgeguide>

Math Concepts Resource

The following math concepts can be used in any variation in the challenges, but the challenges are not limited to these concepts:

- Geometric shapes
- Two- and three-dimensional figures
- Surface area and circumference
- Probability
- Rational and irrational numbers
- Equations and inequalities
- Fractions and percentages

The resource folder can be found below:

- <https://tinyurl.com/mesamathescape23>
Resources include sample problems from previous years' escape rooms as well as a Quick Guideline presentation with key elements about the escape room.

Teachers and Directors:

Additional resources can be found on the MARS canvas site. If you do not already have access to this, please contact your MESA Director to be added to the site.

Resources include:

- Practice and Preparation for Math Escape Room for Teachers and Directors
 - This document lists options for Escape Room practice and how to access them
 - Demo room - use a previous MESA Day escape room to either demonstrate the platform to the students or allow them to click through the escape room to better understand the mechanics. Directors and Teachers can also use this for themselves to familiarize with the platform. Math problems are pre-solved. The focus is on the

escape room portion.

- Practice room - use a previous MESA Day escape room for students to practice solving math problems from previous years as well as the escape room portion. Directors will have to contact Brain Chase directly to purchase log-ins for these rooms.
 - Escape room event - Brain Chase offers online escape rooms (no math problems to solve!) that can be done for fun. This could help students and teachers familiarize themselves with the Brain Chase platform as well as the mechanics of the escape rooms. This is a fun way to introduce students to the escape room without having to worry about solving math problems. Center directors can purchase these rooms to be used as a no-pressure, fun, supplemental event prior to the Math Escape competition. Costs are listed in the Canvas resource
- Official Resource to be used by MESA Teachers: Math Concepts Student & Teacher Resources
 - This document lists out a multitude of resources including but not limited to:
 - Math standards for teachers to review with students
 - Recommended math practice/evaluation resources
 - Videos and other practice resources