



MESA DAY CONTEST RULES

2024-2025

(FINAL)

Math Escape Challenge

- 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: Changes, if any, from “DRAFT” rules are highlighted in “yellow.” 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 in-person for 2024-2025 but can also be hosted virtually, dependent upon the host center. These rules are written for in-person events; however, they can be adjusted for virtual events.

- MATERIALS:** The Host Center will provide the following:
- A series of questions will be given to each team via the Brain Chase platform
 - Host center will provide:
 - Computer lab or space and internet access for teams to bring their own computers
 - Scratch paper
 - Pencils
 - If virtual: a Zoom meeting invitation

There are no restrictions on tools (e.g., calculators, scratch paper, etc.). Teams must bring their own calculators.

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.
- 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.
- If hosting virtually, host center will provide a method for teams to submit scratch 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) Teams will be provided with their team number and log-in - this is how judges will know which timestamps are associated with the team.
- 4) Each team will share one computer and work together with their teammates to complete the challenge.
- 5) Host center will determine if teams need to bring their own computer or if a computer lab will be provided.
 - a) If students are using a school issued chromebook, they must check ahead of time if their device can access the BrainChase platform.
- 6) Teams will be allowed 1 ½ hours (90 minutes) to solve the math problems **and** complete the escape room portion.
- 7) There will be three math questions for teams to solve.
- 8) Using an AI program such as ChatGPT is strictly prohibited, including to confirm whether the solutions are correct or incorrect. Questions will be specifically formulated to return incorrect answers in AI programs.

ONLY IF VIRTUAL:

- 1) 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.
- 2) 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

TECHNICAL:

- 1) Teams will designate a "Team Leader" who will access 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) Input the answers into the Brain Chase platform.
 - c) **ONLY IF VIRTUAL:** 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
- 2) 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 the start of the competition. Students and teachers can review competition logistics here: <https://tinyurl.com/MDMath22>.
- 2) 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.
- 3) To successfully complete the competition, teams must complete all math problems **AND** break out of the virtual Escape Room.
- 4) 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.
- 5) 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.
- 6) The results from the day of the challenge are **FINAL**.

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/QuickGuide25>

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:

The following 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 contact Rose (rcureton@pacific.edu) about getting practice log-ins.
 - 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 on the BrainChase website.
- 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