Moody’s Mega Math (M³) Challenge Fact Sheet

QUICK FACTS

Who’s eligible to participate?
High school juniors and seniors from all high schools in the U.S. (including U.S. territories and DoDEA schools) are eligible. Homeschool and cyber school students may also form teams. Only two teams per school can participate, and all must have a teacher-coach.

What are the prizes?
$150,000+ in scholarship money is up for grabs! The top six awards, ranging from $5,000 to $20,000, will go to the Finalist teams. 80+ other teams will receive semi-finalist and honorable mention awards of $1,000 to $1,500.

How does judging work?
After the close of Challenge weekend, applied mathematicians score each solution paper according to the competition guidelines. Each paper is read by a minimum of two, and as many as five, triage judges. During the second round of judging, a smaller panel extensively reads and discusses the remaining papers to select semi-finalists and honorable mentions, and tentatively ranks the top six finalist teams. All solution papers are judged blind. The third and final phase of judging involves presentations by the six finalist teams at Moody’s Corporation headquarters.

Why?
M³ Challenge exists to spotlight applied mathematics as a powerful problem-solving tool and as the basis for viable and exciting professions. Participating students are encouraged to explore and bolster their mathematical modeling know-how to position themselves for success.

Who?
M³ Challenge is sponsored by The Moody’s Foundation, established in 2002 by Moody’s Corporation. The Moody’s Foundation partners with nonprofit organizations to support initiatives such as education in the fields of mathematics, finance, and economics, as well as workforce development, civic affairs, and arts and culture. Learn more at www.philanthropy.moodys.com. M³ Challenge is organized by the Society for Industrial and Applied Mathematics (SIAM). SIAM is an international member society serving and advancing the disciplines of applied mathematics and computational science by publishing a variety of books and prestigious peer-reviewed research journals, conducting conferences, and hosting activity groups in various areas of mathematics. Learn more at www.siam.org.

WHO, WHAT, WHEN, WHERE, WHY

What?
M³ Challenge is a math modeling competition for high school juniors and seniors and gives students the opportunity to answer real-life questions by applying mathematics. The Challenge is free, requiring only accessibility to the Internet.

When?
Each team’s Challenge work time is any continuous—up to 14-hour—time span within the Challenge weekend, which is held in late February or early March. The Final Event, or confirmation judging, happens in late April with presentations by top six teams, followed by an awards ceremony at Moody’s Corporation headquarters.

Where?
The M³ Challenge is an online competition, so teams can participate from anywhere they choose! The Final Event is held at Moody’s Corporation headquarters in Manhattan, NYC.

MORE INFO ON REVERSE
FAQ

When was M³ Challenge established?
The first Challenge was in 2006, open only in the New York City metropolitan area, and after a series of managed expansions, is now open to high schools throughout the entire US and its territories.

Has M³ Challenge earned any awards?
Yes! M3 Challenge is the recipient of numerous awards and recognitions, including: placement on the National Association of Secondary School Principals' National Advisory List of Student Contests & Activities since 2010; 2009 ASAE Associations Advance America (AAA) Award of Excellence; and 2008 Excellence Award from the Committee Encouraging Corporate Philanthropy (CECP).

What is math modeling? Why is it important?
Math modeling is a process that uses math to represent, analyze, make predictions, or otherwise provide insight into real-world problems. Used in a variety of scientific disciplines, models are abstractions of reality, and can lead to scientific advances, provide the foundation for new discoveries, and help leaders make informed decisions.

Resources: How do I learn more?
We have many resources available that will give you the skills and mathematical modeling savvy to pose real solutions, including: the Math Modeling: Getting Started and Getting Solutions handbook, sample problems, winning solution papers, judge perspectives, and tips for teams.

How do I get more info?
Visit www.m3challenge.siam.org.
**What is Moody’s Mega Math Challenge?**

Moody’s Mega Math Challenge is a highly competitive math modeling competition for high school juniors and seniors that gives students the opportunity to answer real-life questions by applying mathematics. By participating, students experience what it’s like to work as a team to tackle a real-world issue under time and resource constraints, like those faced by professionals working in industry. This year, for example, the students were challenged to come up with solutions to help the National Park Service plan for future growth despite global change factors. Winners of the M3 Challenge receive scholarship prizes totaling $150,000. (About 18 percent of entrants receive monetary prizes or honorable mentions, with the top team winning $20,000 in scholarships).

**Why does Moody’s sponsor the Challenge?**

Moody’s recognizes the importance of education to the success of our business and to Americans in general. The Moody’s Foundation is committed to supporting education, in particular the study of mathematics, finance, economics and all STEM subjects. The Moody’s Mega Math Challenge serves to stimulate interest and desire to do well in math and STEM subjects. Our research shows that years later, students who participated in the challenge have increased interest in math and the potential for better jobs. Many of them have even become Moody’s summer interns. Ultimately, we know this bodes well for the strength of the American workforce.

**Can you comment on the U.S. international ranking in math and STEM subjects?**

According to a Pew Research Center report (February 2017), one of the biggest cross-national tests is the Programme for International Student Assessment (PISA), which every three years measures reading ability, math and science literacy and other key skills among 15-year-olds in dozens of countries. The most recent PISA results, from 2015 and released in December 2016, placed the U.S. an unimpressive 40th out of 72 countries in math and 25th in science. Among the 35 members of the Organization for Economic Cooperation and Development (OECD), which sponsors the PISA initiative, the U.S. ranked 30th in math and 19th in science. These numbers are alarming. We must do whatever is necessary to encourage and help our students succeed academically, which will ultimately help ensure the long-term success of the American economy. These young people are our future.

**Why did Moody’s sponsor the survey?**

Together with the Society for Industrial and Applied Mathematics, we wanted to get a glimpse into the motivation and practices behind the academic success of some of the country’s brightest math minds. The survey is an important step in identifying what makes those who are passionate about math succeed so that we can transfer that insight to American educators and parents. We can also give students who struggle with STEM and other subjects the opportunity to learn from this insight.

**What are the key findings of the survey?**

- What we found to be eye-opening is that a little more than half (51%) of the students participating in the study said they’re naturally interested in math. A quarter credit a good teacher for their interest, while only a tenth pursue math for the future educational and career opportunities it can bring.
• Other key findings show that these kids spend a lot of time doing homework – almost half spend 11 or more hours per week…. Not in a busy place like the kitchen, living room or a library, but 84 percent of the students say they study alone in a room.

• When they’re not doing homework, the majority of the students we surveyed get involved in productive things such as participating in clubs and student government, and giving back to the community through volunteer work.

• The majority of students also take care of themselves – they eat healthy most of the time and stay active through sports or exercise.

What advice do you have for parents to help their kids develop an interest in math?
The best thing parents can do is to plant the seeds of interest in math in their kids from a very young age – making sure to do so in a fun way. Some ways to help kids develop a natural interest in math are to play numbers-related board games, puzzles such as Sudoku, brain teasers, online programs and gaming sites. Even analyzing sports scores or retail discounting reinforces the message that math not only gets you places, but is used every day and can be a lot of fun too.

We recommend being prepared for possible personal questions, such as:
• Were you good in math as a student?
• How did you get interested in math?
• Can you tell us about your schooling and career path?
• How is a good base in math important to your job?
• What do you look for when people apply for jobs with your company?
• What kind of careers could success in math subjects lead to?