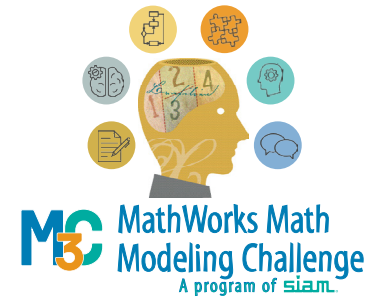


GOT A PROBLEM?

SIAM is Seeking Problem Ideas for High School Math Modeling Competition



We're looking for real-world problems that will be of interest to young people and allow them to make meaningful progress toward a solution within 14 hours.

We welcome all problem suggestions, and anyone who submits an idea can work with experienced problem writers to refine it.

Honoraria

- \$500 for problems selected to be used as “the” Challenge problem.
- \$50 for problems selected to be practice problems posted on the M3 Challenge website. Authors may be invited to participate in a live webinar to discuss approaches to solving their problem.

Examples of past problems include:

- Mitigating risks associated with the increased frequency, intensity, and duration of heat waves, and the accompanying strain on the electrical grid
- Finding long-term solutions for the linked crises of homelessness and a shortage of affordable housing
- Predicting the future of remote work, both at a micro and macro level, and how it could affect government agencies, real estate values, the environment, population densities, and even career choices

About M3 Challenge

MathWorks Math Modeling Challenge (M3 Challenge) is an internet-based, applied mathematics contest. High school juniors and seniors in the U.S. and sixth form students (age 16-19) in England and Wales may compete in teams of three to five students. M3 Challenge takes place each year in late February/early March. Teams are given 14 hours to solve an open-ended, applied math-modeling problem related to a real-world issue. Winners receive scholarship awards totaling \$100,000 (£75,000+). Registration and participation are free.

The goal of M3 Challenge is to motivate students to study and pursue careers in STEM disciplines, especially applied mathematics, computational science, data science, and technical computing. The problem is revealed to students only after they log in on their selected Challenge day. Solutions are judged on the approach and methods used, and the creativity displayed in problem solving and mathematical modeling. While coding is not required to compete, teams that code in MATLAB are eligible for additional MATLAB Technical Computing Awards.

More details about desired problem characteristics are on the back.

Learn more about past problems: m3challenge.siam.org/resources/archives

Contact SIAM for more information: m3challenge@siam.org

Email your ideas to: m3challenge@siam.org

Considering submitting a problem idea?

M3 Challenge welcomes all problem suggestions and can connect contributors with experienced problem writers to refine their ideas. Our problem development team will help shape each problem into the standard format and ensure it meets the desired criteria. **Problems don't need to be fully developed**—though the following information may help guide your ideas.

Problem structure

Within the problem statement, there should be three questions for teams to answer:

- Question One: A warm up — every serious team can answer.
- Question Two: The guts — framed so that every team can have some success and many teams will cover it well.
- Question Three: The discriminator — many teams will do something, while only a few will have striking results.
- Data — data that is provided or easily found is desirable to encourage students to use coding and technical computing in solution papers.

Feel free to check out past problems to see the typical format: m3challenge.siam.org/resources/archives.

Desired problem characteristics

- Topic of current interest involving interdisciplinary problem solving and critical thinking skills
- Accessibility to high school/sixth form students
- Suitability for solution in 14 hours
- Possibility for significant mathematical modeling
- Potential to extend and enhance model using technical computing if a team chooses to do so
- Availability of enough **data** for a variety of approaches and depth of solutions (but no easily found answers)
- References identified that will be helpful for getting students started

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