

LEVEL	Middle School / High School
NUMBER OF TEAMS	Regional Design Day - up to 3 teams per school; MESA Day - 1 team per school
TEAM MEMBERS	2-6 students

OBJECTIVE

The challenge is revealed at the event. Teams use only the provided materials and work together to design, build, and test a solution. The specific 100-point rubric and performance rules are provided with that year's challenge.

COMPETITION PROCESS**WHAT TO EXPECT**

You will not know the engineering challenge before the competition - and that's part of the challenge. On competition day, your team will receive an engineering problem, the rules and scoring criteria for that problem, and the materials you may use. Your team will work together to understand the problem, develop a solution, build and test it, and make improvements within the time provided.

- Challenge Introduction: Judges have approximately 5-10 minutes to explain the objective, criteria, constraints, performance measure, rules, materials, and scoring rubric.
- Design & Build: Teams work collaboratively using the materials provided on-site. No outside assistance is permitted during the challenge.
- Time: The challenge specifies the build/test period, up to a maximum of 40 minutes.
- Specification & Safety Check: Judges determine whether the entry meets the challenge-specific requirements and is safe/eligible for performance testing.
- Performance Testing: Teams test their solution under the challenge-specific conditions.

SCORING - 100 POINTS

Each On-Site Engineering Design Challenge is scored using a 100-point rubric developed specifically for that challenge. The rubric reflects the particular engineering task and is provided as part of the challenge.

Depending on the challenge, scoring may consider measurable performance, engineering decisions, design constraints, testing, teamwork, or other challenge-specific criteria. Arizona MESA does not prescribe a fixed Explore/Design/Test/Communicate point breakdown for every On-Site challenge.

PLANNING & REFLECTION

When planning, testing notes, or brief reflection would help students complete a particular challenge, those expectations will be built directly into that year's challenge materials and scoring. There is no separate required post-challenge interview or pre-submitted poster.

GENERAL RULES

- Use only the materials and tools authorized for the challenge.
- Follow all challenge-specific dimensions, quantities, time limits, and testing procedures.
- All work during the challenge must be completed by registered student team members.
- Unsafe designs or actions may be stopped by judges and must be corrected when correction is permitted.
- Serious or intentional rule violations, unsafe conduct, or outside assistance may result in disqualification.

STUDENT QUICK CHECK

- ☐ Listen for the objective and how points are earned
- ☐ Identify the criteria and constraints before building
- ☐ Use team time intentionally
- ☐ Test when the challenge allows it
- ☐ Make changes based on what you observe
- ☐ Be ready to follow the exact testing procedure

TL;DR

The challenge is revealed at the event. Teams use only the provided materials and work together to design, build, and test a solution. The specific 100-point rubric and performance rules are provided with that year's challenge.

READ THE FULL SPECIFICATIONS. The TL;DR is a quick reference and does not replace the complete rules.