

Women STEM CONFERENCE

STEM COMPETITION

We are so glad your school will be attending the 4th annual Women in STEM Conference!

This year we will be hosting three student competitions, a PSA competition, a car design and bridge design.

Teams should consist of no more than four students, and the projects should be constructed prior to arriving at the conference.

Designs will be judged by a panel and prizes will be awarded to the top scoring teams.

All three competitions will have design requirements and constraints to allow for fair evaluation. The design requirements and scoring criteria for the competitions are shown on the next pages.

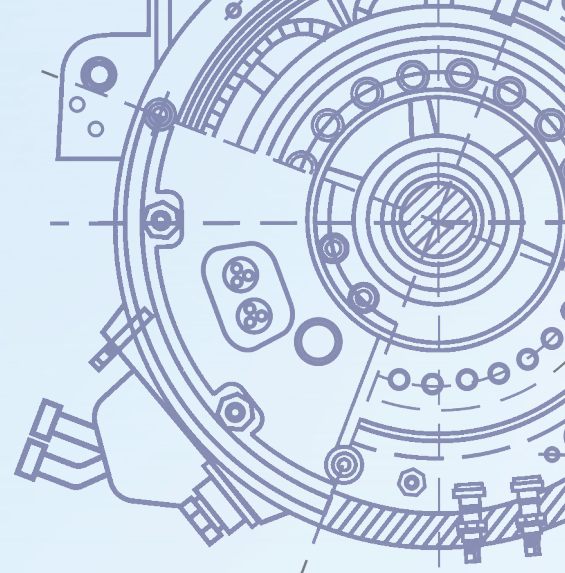
If you would like to participate, your entries MUST be submitted by March 14, 2025.

LATE ENTRIES WILL NOT BE ACCEPTED.

If you have questions or need more information, contact us at WISC@ardot.gov



CAR COMPETITION



OBJECTIVE

Build a balloon, mouse trap, or rubber band-powered car that will travel the farthest distance.

DESIGN REQUIREMENTS

- The car should be sturdy and not fall apart.
- The car must travel forward and straight for at least 10 ft.

SCORING CRITERIA

Teams will be evaluated and scored using the following criteria:

1. Presentation

- Each team must prepare a 3 to 5 minute video presentation to introduce the team members and explain their design process. Students must be able to describe basic functions and design concepts.
- **All videos must be submitted to WISC@ardot.gov by the March 14, 2025 deadline.**

2. Creativity & Aesthetics

- Points will be rewarded to teams who use materials that other teams did not use.
- Teams who add visual and artistic designs to their cars will receive additional points.

3. Distance

- If a car does not reach 10 ft., then that team will not receive points.
- Teams will receive an extra point for every inch their car travels over the 10 ft. requirement.

4. Trials

- Each team will get two trial runs for their car. This will allow each team to have a second chance to make up for any technical issues.

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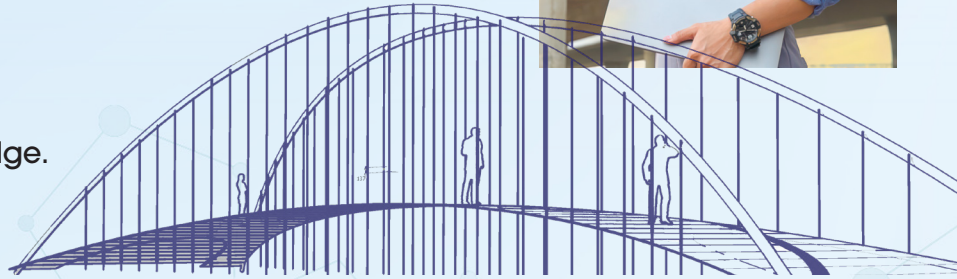
BRIDGE COMPETITION



OBJECTIVE

Design and construct a balsa wood bridge.

DESIGN REQUIREMENTS



- All materials shall only be commercially available balsa wood and adhesive (glue).
- Minimum clear span of 26 in.; Maximum bridge length of 30 in.; Minimum bridge width of 6 in.
- Bridge members must not exceed $\frac{1}{8}$ in. square balsa wood sticks.
- Members of the bridge may not be laminated together. The allowable overlapping of one member to another is $\frac{1}{2}$ in. Parallel members will be glued only at their ends or where they come into contact with cross members. The minimum allowable spacing between parallel member is $\frac{1}{8}$ in.
- For testing, the bridge deck must have a $\frac{1}{2}$ in. hole at mid-span. There should be no obstructions below the hole that would prevent the passing of the testing rod.
- The bridge may not be painted or coated with any material.

TESTING

- A $1\frac{1}{2}$ in. wide x 3 in. long x $\frac{1}{2}$ in. thick loading plate will be positioned over the hole at mid-span and be placed directly on the balsa wood deck.
- A testing rod will fit through the $\frac{1}{2}$ in. hole in the balsa wood deck and attach to the loading plate.
- The initial load will consist of an empty container suspended from the testing apparatus.
- Sand will be added to the container at a steady rate until bridge failure.

SCORING CRITERIA

Bridges will be evaluated by a panel of judges. The panel will evaluate and score each team on the following categories:

1. Presentation

- Each team must prepare a 3 to 5 minute presentation to introduce the team members and explain their design. Students must be able to describe basic bridge functions and design concepts.
- **All videos must be submitted to WISC@ardot.gov by the March 14, 2025 deadline.**

2. Creativity & Design

- Each team must present a diagram of their bridge, drawn to scale.

3. Efficiency: (Efficiency= mass supported/mass of bridge)

LATE ENTRIES WILL NOT BE ACCEPTED.

PSA COMPETITION



OBJECTIVE

Create an informative and inspiring Public Service Announcement (PSA) on one of the topics provided to promote awareness and encourage positive action within their community. The PSA should effectively communicate key information about the selected topic, using persuasive techniques and creative presentation to engage the audience and motivate them to take action.

TOPICS

- **OVERCOMING STEM STEREOTYPES:** Highlight the importance of diversity in STEM fields by encouraging women and minorities to pursue their interests. Address common misconceptions, such as STEM being too difficult or only suited for certain people and inspire students to explore these fields without fear of judgment.
- **THE FUTURE OF WORK - STEM CAREERS:** Introduce students to emerging careers in STEM fields, highlighting the skills needed for the jobs of tomorrow, such as AI, data science, engineering, and biotechnology.
- **CYBERSECURITY AWARENESS:** Educate students on the importance of cybersecurity, protecting personal data, and understanding the ethical use of technology.
- **LEAD BY EXAMPLE:** Highlight the importance of being a role model, showing that true leadership isn't about holding a title or being popular, but about setting a positive example, making ethical decisions, and inspiring others through actions.
- **THE IMPORTANCE OF STEM IN EVERYDAY LIFE:** Show how STEM impacts daily life, from smart phones and medical advancements to environmental solutions, inspiring students to see the real-world applications of their studies

SCORING CRITERIA

- **RELEVANCE:** The PSA addresses the target audience's specific needs and concerns and is relevant to the chosen topic.
- **ACCURACY:** All information presented is accurate, up-to-date, and factually correct.
- **MESSAGING:** The message is clear, compelling, and effectively communicates the key points.
- **CREATIVITY:** Demonstrates originality and innovative thinking in presenting the PSA.
- **TECHNOLOGY USE:** Effective use of technology to enhance the quality and impact of the PSA.

REQUIRED FORMAT SUBMISSION

- **VIDEO:** The PSA should be presented as a video no longer than 3 minutes in length.
- **INFOGRAPHIC:** A one-page infographic must accompany the video, formatted on an 8 ½ x 11 inch sheet of paper and submitted as a PDF.
- **SUBMISSION DETAILS:** Along with your submission, include a brief description of your PSA, the name of your school, and a list of the team members (teams should consist of 2 to 4 people).
- **SUBMISSION DEADLINE:** Submit your PSA and accompanying infographic digitally by March 14th, 2025 to WISC@ardot.gov.

LATE ENTRIES WILL NOT BE ACCEPTED.