

South Dakota Mines

Junior Bladesmithing Championship!

ABOUT THE JUNIOR BLADESMITHING CHAMPIONSHIP

The Junior Bladesmithing Championship makes concepts such as heat transfer, coke combustion, forging, welding and quenching come to life for high school students. The competition challenges teams from around the United States to produce a blade by hand hammering or trip hammer forging.

The competition is open to all high school students (9-12th grades) enrolled during the academic year of the competition. Individual students and teams up to three students are eligible. Each team or individual entrant wishing to compete is required to submit a written acknowledgement from their parent/guardian and technical advisor (encouraged but optional) to the Junior Bladesmithing Committee by December 15.

SPONSORSHIP

The Junior Bladesmithing Championship is made possible through the support of Nucor Steel and the Department

of Materials and Metallurgical Engineering at South Dakota Mines.

Junior Bladesmithing Competition Rules and Entry Requirements

Teams and individuals entering the Junior Bladesmithing Championship must adhere to the rules and meet the requirements presented below in order to compete.

Eligibility Requirements

The Junior Bladesmithing Championship is open to high school students (9-12th grade) only:

- Teams may include up to three students.
- Only one entry per individual/team is allowed.

Each team or individual entrant is required to obtain written acknowledgement from their parent/guardian to participate in the competition. Signed parent/guardian acknowledgment for each participant is due to Jessica.Zacher@sdsmt.edu by December 15.

Entry Requirements

Each team or individual should produce a knife or sword blade 20-120 cm long (including handle):

- Each team is limited to one blade.

- **Blades must be formed extensively by hand hammering/trip hammering or forge pressing.**
- **Blades must not be sharpened (minimum edge radius ~0.5 mm) during the time of the competition.**
- **There is no restriction on the starting material for the blades. Team may use purchased stock material; material that is alloyed; laminated, or otherwise processed by the team; or material smelted from ore.**

Entries must Include:

- **Technical Report: 11 point Arial font. Maximum 8 pages double-spaced (1" margins). The Technical Report must include a photograph(s) of the blade as well as the fabrication methods used. Emphasis should be placed upon the scientific and technical expertise used/learned in the blade fabrication. Report should be submitted as a single .pdf file. See judging rubric for guidance.**
- **Video Interview: The top five finalists will be invited to have a live stream video (Zoom or similar platform) interview/presentation with the Junior Bladesmithing Committee. No more than eight slides should be submitted prior to the**

interview/presentation. See judging rubric for guidance.

- No blades should be shipped/mailed as part of this competition.

Judging:

Entries will be judged by student members (Material Advantage, South Dakota Mines), a master blacksmith and an industrial representative (Nucor Steel).

Competition Timeline:

- Signed Parent/Guardian Acknowledgement (December 15)
- Technical Report (see judging rubric for expected content, include blade images) Submission (April 1)
- Team Interviews (mid April)
- Winners Announced (by May 1)

Prizes (per team):

- First Place=\$1,000
- Second Place=\$500

Other:

- Laws and Regulations: All participants should carefully investigate and act in compliance with all

local laws including the handling of items fabricated for or entered into the competition.

- **Safety Practices: Best practices for laboratory safety and safe blade handling are required. Evidence of this is an essential component of the judging requirement (submitted Technical Report).**

Metalworking Safety

Safety is the number one priority for all teams entering the Junior Bladesmithing Championship. Students must apply safe practices at all times and failure to properly address safety concerns will result in automatic disqualification. All teams are required to coordinate with a parent/guardian and any other appropriate safety personnel to discuss safety procedures, and identify potential hazards prior to participating in the competition. Any participants must complete any required safety at their home or laboratory(s) used for blade construction. It is recommended that all participants review the following safety links as a starting point before beginning the competition:

- [**Blacksmithing Safety \(California Blacksmithing Association\)**](#)
- [**Arc Welding Safety Guide \(Lincoln Electric\)**](#)

Additionally, it is the responsibility of competitors to adhere to the COVID-19 safety guidelines of the home location(s), and other local and state guidelines while working on elements of the competition.

Contact Us

**For additional information about the Junior
Bladesmithing Competition please contact
Jessica.Zacher@sdsmt.edu**