

WELDING SCULPTURE



PURPOSE

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of welding or metal trades.

First, download and review the General Regulations at: <http://updates.skillsusa.org>.

ELIGIBILITY

Open to active SkillsUSA members enrolled in career and technical programs with welding or metal trades as the occupational objective.

CLOTHING REQUIREMENTS

Class E: Contest specific — Business Casual

- Official SkillsUSA white polo shirt.
- Black dress slacks (accompanied by black dress socks or black or skin-tone seamless hose) or black dress skirt (knee-length, accompanied by black or skin-tone seamless hose).
- Black leather closed-toe dress shoes.

Alternative: Official SkillsUSA red blazer with white shirt may be worn instead of SkillsUSA white polo.

These regulations refer to clothing items that are pictured and described at: www.skillsusastore.org. If you have questions about clothing or other logo items, call 1-888-501-2183.

Note: Contestants must wear their official contest clothing to the contest orientation meeting.

EQUIPMENT AND MATERIALS

1. Supplied by the technical committee:
 - a. All necessary information for the judges and technical committee.
 - b. One 4-foot table.
2. Supplied by the contestant:
 - a. All competitors must create a one-page résumé and submit the résumé at the contest orientation.
Note: Your contest may also require a hard copy of your résumé as part of the actual contest. Check the Contest Guidelines and/or the updates page on the SkillsUSA website at: <http://updates.skillsusa.org>.
 - b. Student-designed and -produced sculpture.
 - c. Notebook to serve as professional portfolio (see description below).

SCOPE OF THE CONTEST

The contest consists of three parts:

1. Evaluation of the sculpture.
2. Notebook.
2. Interview (All contestants will be asked the same questions, determined by the judges, before the start of the contest).

Knowledge Performance

There will be a skill-related written test to evaluate student knowledge of basic welding and cutting processes. General questions about GMAW, GTAW, SMAW, PAC and OFC will be included on this test.

Skill Performance

The contest is designed to assess the ability of the competitor to design and produce a sculpture of that design, as well as answer questions in a brief interview related to all aspects of his or her creation of the design.

Contest Guidelines

Note: No modifications may be made to sculptures after regional/state contests, except polishing and clear coat.

Sculpture Design and Workmanship

1. Materials used must be ferrous or nonferrous metals. The sculpture must be an original and creative work of the student.
2. Sculptures shall be welded, brazed or soldered, depending on the material used. No mechanical fasteners or adhesives are permitted.
3. Projects are to be left unpainted, including primers and other coatings. (Exception: sculptures may be clear coated.) Naturally achieved patinas shall be limited to air, water or heat, or any combination thereof. (No chemically enhanced finishes are permitted).
4. All copyright laws must be followed in the creation of the design.
5. The sculpture must be one continual piece, not multiple pieces unconnected. Movement is allowed but not required. Moving parts are permitted provided they do not affect the size parameters or integrity of the piece, or create a safety hazard.
6. The sculpture cannot exceed the maximum size of 18" tall x 12" wide x 18" long and cannot exceed a weight of 100 lbs. At orientation, students will place a box with said dimensions over their sculpture so that judges may verify the sculpture meets the size requirement. Sculptures will also be weighed. (A severe point penalty will be taken for oversize or overweight sculptures).
7. No additional appurtenances can be used (mirrors, stands, etc.). The sculpture shall stand alone. No presentation pieces are permitted.

Notebook

1. A three-ring binder must be placed with the sculpture prior to judging. It must contain pictures and supporting evidence (i.e., receipts). It must include a brief description of the project and processes used to develop the sculpture.
2. The first page of the notebook must be a tabbed table of contents. The notebook must include a letter certifying that the sculpture was designed and constructed by the student. The letter must contain an itemized list of all expenses. The letter

must identify the school, city, state and local advisor. The letter must identify the student to be interviewed, division (high school or college/postsecondary), and the letter must be signed by the school administrator.

3. Any welds that are hidden or ground must be documented through photographs with captions in the notebook.
4. A written statement from a school administrator must be submitted to the technical committee stating that the sculpture is the same one used throughout the SkillsUSA at regional and state competitions.
5. An electronic copy of the notebook must be provided at orientation on a USB drive; USB drives will be returned to students during the contest.

Interview

The student will participate in a three- to five-minute interview. Questions from the judges will be related (but not limited) to sculpture, creation, inspiration, materials, processes and workmanship.

Items Evaluated Possible Points

Sculpture (450 points)

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| 1. Metal Working (Fitting and Techniques). | 100 |
| 2. Welding (100 points total). | |
| a. Fit-up. | 25 |
| b. Function of welds. | 25 |
| c. Amount of welds. | 25 |
| d. Quality of welds. | 25 |
| 3. Cutting (50 points total). | |
| a. Function of cuts. | 25 |
| b. Quality of cuts. | 25 |

Note: No extra credit or deductions for CNC cutting

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| 4. Design/Creativity (200 points total). | |
| a. Level of difficulty. | 50 |
| b. Creative use material/process. | 50 |
| c. Creativity. | 50 |
| d. Original Design. | 50 |

Notebook (2"-3" tabbed binder) (300 points total)

Note: Does *not* need to be SkillsUSA binder

1. Tabbed table of contents 25
Note: Must be first page.
2. Verification letter (125 points total)
Note: All information must be included in one letter.
 - a. School letterhead: letter signed by school administrator. 25
 - b. Verification: student constructed sculpture. 25
 - c. Itemized list of expenses with receipts. 25
 - d. ID school, city, state, advisor 25
 - e. List of approximate time in each process. 25

Note: actual receipts, photocopies of receipts, invoice or proof of donated materials required for expenses.
3. Photographs with captions (minimum 10). 50

Note 1: Photos must include student, who must be identifiable working on his or her sculpture throughout various stages of construction; captions must depict the process demonstrated.

Note 2: If welds are ground or removed, photo documentation of original welds must be provided.
4. Photographs: regional and state contests. 25
(Student with sculpture, medal/certificate and state director to verify same sculpture used for all contests).
5. Drawings (50 points total).
 - a. Concept drawing(s). 25
 - b. Drawings — approximate dimensions. 25
6. Supporting documents. 50
(Examples: additional photos of process, design, cutting, welding, forming; explanation of creative use of process, etc.).

Interview [200 points total]

1. Greeting and Closing. 20
2. Eye Contact. 10
3. Knowledge of Project. 50
4. Complete Answers. 20
5. Level of Detail. 25
6. Professionalism. 50
7. Employability. 25

Written Test [50 points total]**50****Penalties**

1. Workmanship: exceeds size limits. -100
2. Workmanship: exceeds 100 lbs. -100
3. Workmanship: paint/finish. -50
4. Workmanship: copyright infraction. -50
5. Résumé Penalty. -10
6. Clothing Penalty. -10

Total Possible Points**1,000****Committee Identified Academic Skills**

The technical committee has identified that the following academic skills are embedded in this contest.

Math Skills

- Use fractions to solve practical problems.
- Convert fractions to decimals and vice versa.
- Measure angles.
- Construct three-dimensional models.

Science Skills

- Describe and recognize solids, liquids and gases.
- Use knowledge of principles of electricity and magnetism.

Language Arts Skills

- Provide information in oral presentations.

Connections to National Standards

State-level academic curriculum specialists identified the following connections to national academic standards.

Math Standards

- Geometry.
- Measurement.
- Problem solving.
- Communication.
- Connections.
- Representation.

Source: NCTM Principles and Standards for School Mathematics. For more information, visit: www.nctm.org.

Science Standards

- Understands the structure and properties of matter.
- Understands the sources and properties of energy.
- Understands forces and motion.
- Understands the nature of scientific inquiry.

Source: McREL compendium of national science standards. To view and search the compendium, visit: www2.mcrel.org/compendium/browse.asp.

Language Arts Standards

- Students apply a wide range of strategies to comprehend, interpret, evaluate and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

Source: IRA/NCTE Standards for the English Language Arts. To view the standards, visit: www.ncte.org/standards.