



# NYS SkillsUSA Standards



## WELDING SCULPTURE



### PURPOSE

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

### ELIGIBILITY

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

### CLOTHING REQUIREMENTS

#### **SkillsUSA NYS Attire:**

Official red blazer, NYS Black Jacket, the older red national windbreaker or older red sweater and the Black or red Jacket from Nationals.

Button up, collared, white dress shirt (accompanied by a plain, solid black tie), white blouse (collarless or small-collared) or white turtleneck, with any collar not to extend into the lapel of the outer layer coats

Black dress slacks accompanied by black dress socks or black or skin tones seamless hose) or black dress skirt (knee-length, accompanied by black or skin-tone seamless hose).

Black shoes, that are not backless or open toe.

*Note:* Safety glasses must have side shields or goggles. (Prescription glasses may be used only if they are equipped with side shields. If not, they must be covered with goggles.)

*Note:* Contestants must wear their contest clothing to the contest orientation meeting. Also bring #2 pencil, resume, and safety assurance form. DO NOT bring sculptures to orientation.

## **EQUIPMENT AND MATERIALS**

1. Supplied by the technical committee:
  - a. A minimum 28" x 28" table space per competitor
  - b. Welding Simulator
2. Supplied by the competitor:
  - a. Competitor-designed and -produced sculpture
  - b. Binder documenting the sculpture project and processes submitted in an official SkillsUSA three-ring binder
  - c. Digital copy (PDF) of binder contents saved on a USB flash drive turned in at orientation
  - d. All competitors must create a one-page resume. See “Resume Requirement” below for guidelines.

### **RESUME REQUIREMENT**

Competitors must create a one-page resume to submit at orientation along with safety form.

### **DEVICES**

Cell phones or other electronic devices not approved by the NYS Chairperson will be collected by the contest chair during the competition. Chairpersons will announce their acceptance by listing it on their standard or at the orientation meeting. In case of emergencies advisors should allow the competitors to take their phones to the contest areas.

If the competitor uses their device in a manner which compromises the integrity of the competition, the competitor’s score may be penalized.

## SCOPE OF THE COMPETITION

The scored competition consists of four parts:

1. Evaluation of the sculpture
2. Binder Documentation
3. Interview (All competitors will be asked the same questions, determined by the judges, before the start of the competition).
4. On-site Welding Component done on a Welding Simulator

### 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. Competitors are also required to take the NYS SkillsUSA Professional Development Test online.

### SKILL PERFORMANCE

The competition evaluates the ability of the competitor to design and produce a welding sculpture. The skill performance includes an interview for competitors to answer questions related to all aspects of their creation of the design. Competitors will also be required to appropriately weld/cut on a welding simulator.

### COMPETITION GUIDELINES

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

#### **On-Site Welding Component**

Contestants must do welding on a welding simulator.

## **Sculpture Design and Workmanship**

1. Materials used must be ferrous or nonferrous metals. The sculpture must be the original and creative work of the competitor.
2. Sculptures shall be welded, brazed, or soldered, depending on the material used. This is a welding competition. Please keep in mind each competitor's sculpture should be representative of a welder's skills and ability.
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 continuous 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, competitors 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 penalty will be assessed 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.
8. **Note:** Binders are *not* considered presentation pieces and are required to be present with the sculpture.

## **BINDER**

In addition to the physical binder, a digital copy (PDF) of the binder's contents will be required to be handed in at orientation. There will be no exceptions. Any additions to the physical binder may/may not be included in binder scoring.

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 binder must be a table of contents. All subsequent sections must be clearly labeled and tabbed. The binder must include a letter certifying that the sculpture was designed and constructed by the competitor. 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 binder. Note: documentation will be critical if welds are not visible on the completed sculpture.
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 local and state SkillsUSA competitions that lead to the national conference.
5. A digital copy (PDF) of the binder contents must also be provided at orientation on a USB drive; USB drives will be returned to students after the competition.

## **INTERVIEW**

The competitor 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**

### **On-Site Welding Component**

Work on a welding simulator

### **Sculpture**

1. Metal Working (Fitting and Techniques)
2. Welding
  - a. Fit-up
  - b. Function of welds
  - c. Amount of welds
  - d. Quality of welds

*Note:* No extra credit or deductions for mechanical fasteners
3. Cutting
  - a. Function of cuts
  - b. Quality of cuts

*Note:* No extra credit or deductions for CNC cutting
4. Design/Creativity
  - a. Level of difficulty
  - b. Creative use material/process
  - c. Creativity
  - d. Original Design

### **Binder (1"-3" tabbed binder)**

1. Tabbed table of contents

*Note:* Must be the first page
2. Verification letter

*Note:* All information must be included in one letter.

  - a. Must be on school letterhead and signed by school administrator
  - b. Includes name of advisor and statement that competitor constructed the sculpture
  - c. Itemized list of expenses with receipts
  - d. List of approximate time in each process

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

*Note:* Photos must include the competitor, who must be identifiable working on their sculpture throughout various stages of construction; captions must depict the process demonstrated.

*Note:* If welds are ground or removed, photo documentation of original welds must be provided.
4. Photographs: local and state competitions

**Note:** Competitor with sculpture, medal/certificate to verify the same sculpture has been used for all applicable qualifying SkillsUSA competitions.

5. Drawings.
  - a. Concept drawing(s)
  - b. Drawings — approximate dimensions
6. Supporting documents  
(Examples: additional photos of process, design, cutting, welding, forming; explanation of creative use of process, etc.).

### **Interview**

1. Greeting and Closing
2. Eye Contact
3. Knowledge of Project
4. Complete Answers
5. Level of Detail
6. Professionalism

### **PENALTIES**

1. Workmanship: exceeds size limits: -100 points
2. Workmanship: exceeds 100 lbs.: -100 points
3. Workmanship: paint/finish: -50 points
4. Workmanship: copyright infraction: -50 points
5. Digital copy of binder contents not submitted online: -10 points
6. Resume Penalty: -10 points
7. Clothing Penalty: -10 points

### **STANDARDS AND COMPETENCIES**

#### **WS 1.0 — SkillsUSA Framework**

The SkillsUSA Framework is used to pinpoint the Essential Elements found in Personal Skills, Workplace Skills, and Technical Skills Grounded in Academics. Students will be expected to display or explain how they used some of these Essential Elements. Please reference the graphic, as you may be scored on specific elements applied to your project. For more, visit: [www.skillsusa.org/who-we-are/skillsusa-framework/](http://www.skillsusa.org/who-we-are/skillsusa-framework/).



#### **COMMITTEE IDENTIFIED ACADEMIC SKILLS**

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

#### **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 for 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](http://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](http://www2.mcrel.org/compendium).*

### **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](http://www.ncte.org/standards).*