



CABINETMAKING

SkillsUSA Championships Technical Standards

PURPOSE

To evaluate each competitor's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of cabinetmaking and millwork.

ELIGIBILITY

Open to active SkillsUSA members enrolled in career and technical programs with cabinetmaking and millwork as an occupational objective.

CLOTHING REQUIREMENT

Class C: Competition Specific — Manufacturing/Construction Khaki Attire

- Official SkillsUSA khaki short-sleeve work shirt
- Khaki pants
- Black, brown, or tan work shoes

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.)

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: Competitors must wear their official competition clothing to the competition orientation meeting.

SAFETY REQUIREMENT

Both the instructors and the competitors certify that by registering for this competition that the competitor has received instruction and has satisfactorily passed examination on the safe use of the following hand and power equipment that may be used in the competition:

1. Router
2. Table saw
3. Dado saw
4. Biscuit Joiner
5. Jigsaw
6. Cordless Drill/Driver
7. Hand plane
8. Power miter saw
9. Random orbit sander
10. Wood Chisels

Both the instructors and the competitors certify that SkillsUSA Inc., the SkillsUSA Championships technical committee, and national judges are released from all responsibility and liability relating to personal injury resulting from the use of all equipment provided within the competition area. Competitors will be removed from competition if proper training has not been provided and/or the equipment is used in an unsafe manner.

EQUIPMENT AND MATERIALS

1. Supplied by the technical committee:
 - a. All necessary power tools, equipment, and workstations for competitors
2. Supplied by the competitor:
 - a. Tool belt or shop apron
 - b. Trim hammer
 - c. Wooden or rubber mallet or Dead Blow hammer
 - d. Measuring tape and/or folding rule
 - e. Steel rule
 - f. Combination square
 - g. Gauge blocks or height gauge
 - h. Two pencils or mechanical pencils
 - i. $\frac{1}{32}$ ", $\frac{1}{16}$ ", $\frac{3}{32}$ " nail set
 - j. Block plane
 - k. Utility knife
 - l. One only - backsaw, dovetail, or pull saw
 - m. Two hand-screw clamps or two "F" style clamps with a maximum opening of 8"
 - n. One set $\frac{1}{4}$ "-1" wood chisels
 - o. 10" or 12" mill bastard flat file
 - p. One set of flat blade and Phillips-head screwdrivers and/or handle with interchangeable bits
 - q. Sanding block
 - r. Hand scraper/cabinet scraper
 - s. Calculator

- t. Masking or painters' tape
- u. Three pieces of sandpaper (80–220 grit)
- v. All competitors must create a one-page resume. See “Resume Requirement” below for guidelines.

Note: No additional tools will be permitted.

RESUME REQUIREMENT

Competitors must create a one-page resume to submit online. SkillsUSA South Carolina competitors should submit their resume by the deadline published on the competition updates page of our website. Failure to submit a resume will result in a 10-point penalty.

Your resume must be saved as a PDF file type using file name format of “Last Name_First Name.” For example, “Amanda Smith” would save her resume as Smith_Amanda. If you need assistance with saving your file as a PDF, visit the Adobe website for more information.

Note: Check the Competition Guidelines and/or the updates page on the state website.

PROHIBITED DEVICES

Cellphones, electronic watches and/or other electronic devices not approved by a competition's national technical committee are **NOT** allowed in the competition area. Please follow the guidelines in each technical standard for approved exceptions. Technical committee members may also approve exceptions onsite during the SkillsUSA Championships if deemed appropriate.

Penalties for Prohibited Devices

If a competitor's electronic device makes noise or if the competitor is seen using it at any time during the competition, an official report will be documented for review by the Director of the SkillsUSA Championships. If confirmed that the competitor used the device in a manner which compromised the integrity of the competition, the competitor's scores may be removed.

SCOPE OF THE COMPETITION

KNOWLEDGE PERFORMANCE

The competition may include a written test.

SKILL PERFORMANCE

The competition consists of workstations that require the building of a small cabinet or piece of furniture from the materials and/or drawings supplied. Competitors will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the technical committee.

COMPETITION GUIDELINES

1. Read drawings, generate cut list, and cut parts using a table saw, miter saw, and jigsaw, with additional machining utilizing a variety of machines on the competition floor. In addition, the parts must be accurately assembled, sanded, and adjusted to the specified tolerances.
2. Competitors will be given all necessary information by verbal instruction and shop drawings of articles to be constructed. Competitors will use joinery techniques as specified.

STANDARDS AND COMPETENCIES

CM 1.0 — Apply wood veneers and plastic laminates

- 1.1. Apply adhesives, edge banding and wood edges
- 1.2. Apply laminate or wood veneer to core
- 1.3. Cut plastic or veneer to size
- 1.4. Fit plastic laminate or wood veneer joints
- 1.5. Trim edges

CM 2.0 — Assemble, fasten and install components

- 2.1. Apply clamping devices
- 2.2. Assemble drawers, doors and casework as specified
- 2.3. Assemble ends, back, bracing and face frame as specified
- 2.4. Attach molding/trim as specified
- 2.5. Fasten parts as specified
- 2.6. Glue boards edge to edge
- 2.7. Install functional and decorative parts including hinges, drawer guides, knobs and pulls, etc. as specified

CM 3.0 — Cut and shape components

- 3.1. Cut joinery including but not limited to dado/rabbet joint, mortise and tenon, dowel, biscuit and new technologies when available
- 3.2. Cut drawer front, sides, back, and bottom
- 3.3. Cut ends, back and interior bracing
- 3.4. Cut face frame parts
- 3.5. Edge (shape) countertop
- 3.6. Plane stock
- 3.7. Square solid stock

CM 4.0 — Design and layout

- 4.1. Determine materials and cut list from shop drawings provided

CM 5.0 — Finish surfaces

- 5.1. Clean surfaces
- 5.2. Remove excess glue
- 5.3. Sand and prep surfaces ready to be finished

CM 6.0 — 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/.



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
- Use proportions and ratios to solve practical problems
- Simplify numerical expressions
- Solve practical problems involving percentages
- Measure angles
- Find surface area and perimeter of two-dimensional objects
- Apply transformations (rotate or turn, reflect or flip, translate or slide, and dilate or scale) to geometric figures
- Construct three-dimensional models
- Apply Pythagorean Theorem
- Solve practical problems involving complementary, supplementary and congruent angles
- Use measures of interior and exterior angles of polygons to solve problems
- Find arc length and the area of a sector

Language Arts Skills

- Provide information in conversations and in group discussions
- Provide information in oral presentations
- Demonstrate use of such nonverbal communication skills such as eye contact, posture and gestures using interviewing techniques to gain information

CONNECTIONS TO NATIONAL STANDARDS

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

Math Standards

- Numbers and operations
- Algebra
- Geometry
- Measurement

- Data analysis and probability
- Problem solving
- Communication
- Connections
- Representation

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

Science Standards

None Identified

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

Language Arts Standards

- Students adjust their use of spoken, written and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
- Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
- Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language and genre to create, critique and discuss print and nonprint texts.
- Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.
- Students use spoken, written and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion and the exchange of information).

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