

CABINETMAKING



PURPOSE

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

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 cabinetmaking and millwork as the occupational objective.

CLOTHING REQUIREMENT

Class C: Contest Specific — Manufacturing/Construction Khaki Attire

- Official SkillsUSA khaki short-sleeve work shirt and pants.
- Black, brown or tan leather 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: Contestants must wear their official contest clothing to the contest orientation meeting.

SAFETY REQUIREMENT

Both the instructors and the contestants certify by agreeing to enter this contest that the contestant has received instruction and has satisfactorily passed examination on the safe use of the following power equipment that may be used in the contest:

1. Router
2. Table saw

3. Jointer
4. Band saw
5. Drill press
6. Hand drill
7. Scroll saw
8. Miter/Cutoff saw
9. Disc and belt sander
10. Boring machine

Both the instructors and the contestants 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 the above-listed power equipment. Contestants will be removed from competition if proper training has not been provided and/or they are using the equipment in an unsafe manner.

EQUIPMENT AND MATERIALS

1. Supplied by the technical committee:
 - a. All necessary power tools, equipment and workstations for contestants
2. Supplied by the contestant:
 - a. Nail apron
 - b. Claw hammer
 - c. Measuring tape
 - d. Combination square
 - e. Two pencils
 - f. $\frac{1}{32}$ ", $\frac{1}{16}$ ", $\frac{3}{32}$ " nail sets
 - g. Block plane
 - h. Utility knife
 - i. Backsaw
 - j. Two hand-screw clamps or two "C" clamps with a maximum opening of 8"
 - k. One set $\frac{1}{4}$ "–1" wood chisels
 - l. 10" or 12" mill bastard flat file
 - m. One set of flat blade and Phillips-head screwdrivers and/or handle with interchangeable bits
 - n. Sanding block
 - o. Hand scraper/cabinet scraper
 - p. Calculator
 - q. Three $8\frac{1}{2}$ "x11" pieces of sandpaper (80–220 grit)
 - r. All competitors must create a one-page résumé and submit a hard copy to the technical committee chair at orientation. Failure to do so will result in a 10-point penalty.

Note: Check the Contest Guidelines and/or the updates page on the SkillsUSA website: <http://updates.skillsusa.org>.

Note: No additional tools will be permitted.

SCOPE OF THE CONTEST

Knowledge Performance

The contest will include a written test.

Skill Performance

The contest consists of workstations that require the building of a small cabinet from the materials and drawings supplied. Contestants will demonstrate their ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee.

Contest Guidelines

1. Read drawings, lay out and cut parts using a table saw, laminating trimmer, hand drilling, utilizing the boring machine and various hand tools are skills that will be assessed. In addition, the parts must be accurately assembled, sanded and adjusted to tolerances specified.
2. Contestant will be given all necessary information by job sheets or prints of articles to be constructed. Contestants 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 to core
- 1.3 Cut plastic to size
- 1.4 Fit plastic laminate joints
- 1.5 Trim edges

CM 2.0 — Assemble, fasten and install components

- 2.1 Apply clamping devices
- 2.2 Assemble drawers, panel door and joint
- 2.3 Assemble ends, back, bracing and face frame
- 2.4 Attach molding/trim
- 2.5 Fasten parts with nails, screws and staples

- 2.6 Fasten top to casework
- 2.7 Glue boards edge to edge
- 2.8 Install catches, doors, drawer rail and guides, hinges, pulls and knobs, shelves and track and slide for sliding doors
- 2.9 Reinforce joints with block/dowel

CM 3.0 — Cut and shape components

- 3.1 Cut butt joint, counter top, dado/rabbet joint, doors, doweled joint, and drawer guides and runners (rails)
- 3.2 Cut drawer front, sides, back and bottom
- 3.3 Cut ends, back and interior bracing
- 3.4 Cut face frame, miter joints, molding trim, mortise and tenon joints, frames and panels, shelving, spline joints and tongue and groove joints
- 3.5 Cut out for sink
- 3.6 Edge (shape) counter top
- 3.7 Plane stock
- 3.8 Square solid stock

CM 4.0 — Design and lay out

- 4.1 Determine materials from a blueprint
- 4.2 Draw detailed plans
- 4.3 Estimate labor and material cost
- 4.4 Sketch shop plans

CM 5.0 — Finish surfaces

- 5.1 Apply lacquers, paints, stains, varnishes/polyurethanes and wood filler to nail or screw holes
- 5.2 Clean surfaces
- 5.3 Remove excess glue
- 5.4 Sand surfaces
- 5.5 Swell dents

CM 6.0 — Transport and install cabinets

- 6.1 Fasten cabinet to wall
- 6.2 Trim cabinets
- 6.3 Prepare cabinets for transporting

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.
- 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.

Science Skills

None Identified

Language Arts Skills

- Provide information in conversations and in group discussions.
- Provide information in oral presentations.
- Demonstrate use of such nonverbal communication skills 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: <http://www.nctm.org>.

Science Standards

None Identified

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

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.