

# SkillsUSA North Carolina

## Cabinetmaking 1

### Purpose

To evaluate each contestant's preparation for competition in SkillsUSA-NC Cabinetmaking contest and to recognize outstanding students for excellence and professionalism in the field of cabinetmaking and millwork.

First, refer to General Regulations, Page 9.

### Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles.

(Prescription glasses can only be used if they are equipped with side shields. If not, they must be covered with goggles.)

### Eligibility

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

### 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. Hand drill
4. Miter Saw
5. Biscuit Joiner
6. Pneumatic Nailer
7. Random Orbital Sander

They also certify that SkillsUSA Inc., the SkillsUSA Championships technical committee and judges are released from all responsibility

relating to personal injury resulting from the use of the above-listed power equipment. Contestants will be removed from competition if prior training has not been provided and/or they are using 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. Measuring tape
  - c. Combination Square
  - d. Two pencils
  - e. Utility knife
  - f. One-page, typewritten resume

*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 which require the building of a small project from the materials and plans provided. Contestants will demonstrate their ability to perform jobs or skills 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, miter saw, router, hand drilling, 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 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, and bracing
- 2.4 Attach molding/trim
- 2.5 Fasten parts with nails and screws
- 2.6 Glue boards edge-to-edge
- 2.7 Reinforce joints with mechanical fasteners

### CM 3.0 – Cut and shape components

- 3.1 Cut butt joint, dado/rabbet joint, doors, biscuited joint, dovetails, and drawer parts
- 3.2 Cut drawer front, sides, back, and bottom
- 3.3 Cut ends, back, and interior bracing
- 3.4 Cut miter joints, molding trim, frames and panels, shelving, spline joints
- 3.5 Edge shape parts
- 3.6 Square solid stock

### CM 4.0 – Design and layout

- 4.1 Use tape measure, combination square, calipers, sliding t-bevel to accurately measure and lay out components

## 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 area of a sector

### Science Skills

None identified

### Language Arts Skills

- Provide information in conversations and group discussions
- Provide information in oral presentations
- Demonstrate use of 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.*

## **Science Standards**

None identified

*Source: McREL compendium of national science standards.*

## **Language Arts Skills**

- 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 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..*



## SkillsUSA-NC Cabinetmaking 1

**Objective:** Successfully complete WCA Layout Assessment and build small project demonstrating stated WCA proficiencies.

**Station 1:** Layout: Measure (WCA 1.1.1-4)

**Station 2:** Layout: Combination Square (WCA 1.2.1-3)

**Station 3:** Layout: Calipers (WCA 1.3.1-4)

**Station 4:** Layout: Sliding T-bevel (WCA 1.4.1-2)

**Station 5:** Table Saw: Rip (WCA 2.1.1)  
Crosscut (WCA 2.1.3)

**Station 6:** Miter Saw: Square Cut (WCA 2.3.1)  
Angled Cut (WCA 2.3.2)

**Station 7:** Biscuit Joiner: Machine 90° Butt Jointed Corner (WCA 10.2.1)

**Station 8:** Portable Router: Edge Profile (WCA 4.7.1)

**Station 9:** Random Orbital Sander: Sand Flat Pieces of Solid Lumber (WCA 7.4.1)

**Station 10:** Drill: Drill Holes to Specified location and Depth (WCA 6.9.1)

Drill Holes Completely Through Material (WCA 6.9.2)

Assemble/Nail: Fasten 19mm Solid Wood - 90° (WCA 10.3.2)