

Cabinetmaking Blueprint

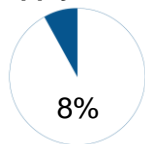
This Blueprint contains the subject matter content for the Career Essentials - Assessment.

Note: To fully prepare for the [Cabinetmaking](#) SkillsUSA Championships contest, refer to the current year's SkillsUSA Championships Technical Standard, now included with your SkillsUSA Professional Membership. If you need help in accessing this benefit, contact the SkillsUSA Customer Care Team at 844-875-4557 or customercare@skillsusa.org.

Standards and Competencies

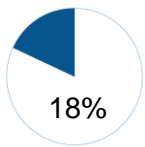
Competencies are weighted throughout the assessment. The percent shown is the weight of the competency. There are 50 questions per assessment.

Apply wood veneers and plastic laminates



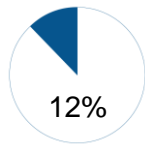
- Apply adhesives, edge banding and wood edges
- Apply laminate to core
- Cut plastic to size
- Fit plastic laminate joints
- Trim edges

Assemble, fasten and install components



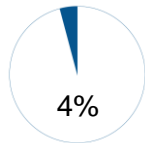
- Apply clamping devices
- Assemble drawers, panel door and joint
- Assemble ends, back, bracing and face frame
- Attach molding/trim
- Fasten parts with nails, screws and staples
- Fasten top to casework
- Glue boards edge to edge
- Install catches, doors, drawer rail and guides, hinges, pulls and knobs, shelves and track and slide for sliding doors as per plans.
- Reinforce joints with block/dowel
- Prepare cabinets for shipping
- Sand by hand
- Putty nails holes and voids
- Trim edges
- Apply edge banding
- Fit wood plugs

Cut and shape components



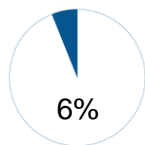
- Cut butt joint, counter top, dado/rabbet joint, doors, doweled joint, and drawer guides and runners (rails).
- Cut drawer front, sides, back and bottom
- Cut ends, back and interior bracing
- Cut face frame, miter joints, molding trim, mortise and tenon joints, frames and panels, shelving, spline joints and tongue and groove joints
- Cut out for sink
- Edge (shape) counter top
- Plane stock to the correct thickness
- Square solid stock
- Demonstrate how to mark face, sides, and edges of material trued
- Cut glass to fit cabinet mounting requirement
- Assemble door jamb and trim
- Fit and apply trim to casework

Design and lay out



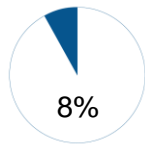
- Determine materials from a blueprint
- Draw detailed plans
- Estimate labor and material cost
- Sketch shop plans
- Draw basic problems in shop geometry
- Develop cutting list from engineered drawing
- Plan and select hardware for use on project

Finish surfaces



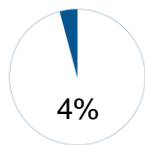
- Apply lacquers, paints, stains, varnishes/polyurethanes and wood filler to nail or screw holes
- Clean surfaces
- Remove excess glue
- Sand surfaces
- Swell dents
- Identify finishing equipment
- Identify different finishing materials
- Apply wax
- Apply linseed oil
- Apply wood filler
- Apply sealer or wash coat
- Polish surfaces
- Swell dents
- Apply top coat
- Apply stain
- Apply grain filler or glaze

Transport and install cabinets



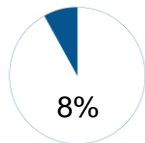
- Fasten cabinet to wall
- Trim cabinets
- Prepare cabinets for transporting
- Identify methods of installing architectural woodwork
- Fasten furring and nailers to walls
- Install pre-assembled base and tall cabinets
- Install and adjust doors and drawers
- Install glass and mirrors in casework
- Assemble counter tops
- Locate and measure space for cabinet installation

Demonstrate employability skills



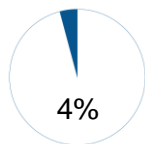
- Follow instructions provided by supervisor
- Demonstrate customer service skills
- Use effective verbal and written communication skills
- Prepare a typewritten resume

Practice power tool and electrical safety



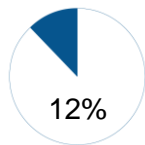
- Inspect and properly use power tools
- Inspect and properly use equipment
- Recognize proper OSHA related safety standards
- Set-up, adjust, and operate radial arm saw to cut stock
- Fabricate joints with mechanical fasteners
- Set-up, adjust, and operate circular, table, variety saw to cut stock
- Set-up, adjust, and operate planer to plane stock
- Set-up, adjust, and operate boring machine to bore stock
- Set-up, adjust, and operate jointer to joint stock

Use measurement skills



- Use ruler, tape measure, and framing square to measure components.
- Calculate amount of needed materials given a materials list and/or sketch.
- Calculate board footage
- Read scales (imperial, metric, board measure)
- Measure stock to length, width, and thickness

Identify commonly used tools, materials, and methods



- Identify commonly used tools and their accessories.
- Describe the system for fastener sizing.
- Compare relative strength of joining methods.
- Identify joining methods.
- Describe the nature and properties of wood
- Identify the parts and uses of layout and measuring hand tools
- Identify the parts and uses of edge cutting hand tools
- Identify the parts and uses of edge cutting power tools
- Identify the parts and uses of sanding hand tools
- Identify the parts and uses of sanding power tools
- Identify the parts and uses of sawing hand tools
- Identify the parts and uses of sawing power tools
- Identify the parts and uses of drilling and boring hand tools



Career Essentials: Assessments

- Identify the parts and uses of drilling and boring power tools
- Draw and label the parts of a tree and explain how it grows
- Identify the methods of cutting lumber
- Demonstrate understanding of the methods of drying lumber
- Identify lumber by NHLA grade
- Name the different kinds of panel products
- Name the common panel cores
- Identify methods of slicing veneers
- Describe the type of matching for individual veneer pieces
- Describe the type of matching for veneered panel faces
- Identify the parts and uses of edge banding machines
- Describe adhesives and their common uses for woodwork joinery
- Identify equipment used for gluing
- List types of abrasives
- Identify abrasive grits sizes and results from use

Committee Identified Academic Skills

The SkillsUSA national technical committee has identified that the following academic skills are embedded in the cabinetmaking training program and assessment:

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 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. To view high school standards, visit: <http://www.nctm.org/standards/content.aspx?id=16909>. Select "Standards" from menu.

Science Standards

None Identified

Source: McREL compendium of national science standards. To view and search the compendium, visit: www.mcrel.org/standards-benchmarks/.

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 non-print 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.readwritethink.org/standards/index.html.