IGNITE YOUR POTENTIAL 2024-2025

NYS SkillsUSA Standards

TeamWorks

PURPOSE

This competition is designed to evaluate team preparation for employment and to recognize outstanding students for excellence and professionalism in the field of residential carpentry, roofing, masonry, plumbing, electrical and teamwork skills.

ELIGIBILITY (TEAM OF FOUR)

Open to a team of four NYS SkillsUSA members enrolled in a program or programs with building trades as the occupational objective.

CLOTHING REQUIREMENTS

NYS SkillsUSA Construction Attire:

- White crew neck short- sleeved T-shirt
- work pants or jeans
- leather or steel toed work shoes
- safety glasses or goggles, (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.)
- Hard Hat

Note: **Contestants must wear their contest clothing to the contest orientation meeting. Also bring #2 pencil, resume, and safety assurance form.**

SAFETY REQUIREMENT

Both the instructor and the competitors certify by agreeing to enter this competition that the competitors have received instructions and have satisfactorily passed an examination on the safe use of portable electric power tools (including cordless) and all hand tools. All team members must have an OSHA Certification before competition. To take the OSHA Certification test, go to: www.careersafeonline.com.

Competitors agree that SkillsUSA Inc., the NYS SkillsUSA Championships technical committees, volunteers and the judges are released from all responsibility relating to personal injuries resulting from the use of all provided equipment and materials. Competitors 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

   All materials and project plans
   Competitors to use their own tool belt
   All competitors must create a one-page resume. See "Resume Requirement" below for guidelines.

2. Supplied by the contestant:
   a. Personal Protective Equipment
      Hard hat
      Safety glasses w/ side shields
      Gloves
      Steel toed work shoes
      Hearing protection
   b. Clean-up
      Broom
      Shovel
      Shop Towels
      Work Bench
      Brush Dustpan
   c. Masonry Tools
      Tape 30'
      Trowels
      Mud Board
      Wheelbarrow
      Level-2' and 4'
      Striker/Jointer 1/2" x 5/8"
      Brush
      Framing hammer
      Chalk Line
      Framing Square
      12 oz or heavier plumb bob
      Brick spacing rule
      100' braided nylon mason's line
      Mason's line blocks
      18-24 oz. Brick hammer
      Pencil/Sharpe

d. Carpentry Tools
   6' or 8' ladder
   Circular saw
   Framing hammer
   Cat's paw/nail puller
   Sawhorses - 2 pair
   Chalk line
   Aviation shears
   Tri-square, speed square, or combination
   Adjustable wrench (8-12)
   Sliding T-bevel
   Hack saw and blades
   4' and 2' level
   Hand saw- cross cut
   Power drill(s)
   Spade bits
   Framing square
   30' tape
   Phillips head drill bits
   Utility knife and blades
   Screwdrivers (standard and Phillips)
   Pencil/Sharpe
e. Electrical Tools
   30' tape
   Screwdrivers (standard and Phillips)
   10" side cutters
   Hammer
   Hacksaw & blades
   Torpedo level
   Wire stripers
   8" diagonal cutters
   Adjustable wrench
   Long-nose pliers
   Channel Locks
   Utility knife
   Pencil/Sharpe
f. Plumbing Tools
   Tape 30'
   PVC saw
   Claw hammer
   Hole saw (pipe diameter)
   File, round/flat
   Torpedo level
   Hack saw and blades
   Regular & stubby screwdrivers
   Level-2' and 4'
   Handsaw and blades
   10" channel locks
   Utility knife and blades
   Framing square
   Pencil/Sharpe

g. Miscellaneous
Lead Cords
GFI protection for lead

RESUME REQUIREMENT

Competitors must create a one-page resume to submit at Orientation.

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 competition is designed to assess a team's ability to show leadership, STEM skills and perform tasks, as a team, identified by the TeamWorks Technical Committee, which includes: Broan-NuTone, Allied Building, Bosch Power Tools, Train2Build, National Roofing Contractors Association, and independent trade experts.

KNOWLEDGE PERFORMANCE

All competitors are required to take the SkillsUSA professional development test at orientation.

The competition includes a written project timeline developed by team members for the purpose of assessing the team's knowledge of the building trades and their approach in completing the assigned project in the time provided.

The competition will also include a written knowledge test of 50 multiple-choice questions assessing knowledge of the building trades taken online. Competitors will complete the exam, and an average score will be created based on individual results. Competitors are also required to take the SkillsUSA professional development test at orientation.

SKILLPERFORMANCE

The competition includes a team project assessing the ability to analyze a project drawing, complete a project timeline, professionally present the team project, and perform skills in residential carpentry, roofing, plumbing, electrical and masonry to complete the project as a team.

COMPETITION GUIDELINES

1. Each team will be given the project drawing at the contest orientation meeting to analyze the drawing and formulate a written action plan.
2. Each team will conduct a three- to five- minute professional presentation to the judges on how the team plans to accomplish the project.
3. Each team member must be active in the presentation.
4. The written action plan and the presentation will be judged.
5. Cleanliness of the jobsite, timeliness of completion of the project, effective ordering of material and inventorying tools and equipment will be assessed.

STANDARDS AND COMPETENCIES

TW 1.0 — Present a Project Timeline after analyzing the project drawing

1.1. Analyze the project drawing
- 1.1.1. Interpret and understand dimensions from multi-view drawings
- 1.1.2. Interpret specifications, abbreviations, symbols, and drawing notes
- 1.1.3. Interpret oral and written changes
- 1.1.4. A material list will be provided by the TeamWorks Technical Committee during the TeamWorks orientation day. The TeamWorks Technical Committee will supply ALL materials required to complete the project build. Teams will be responsible for picking up certain materials from designated areas on the competition floor during the competition. Teams taking more materials than listed on the material list(s) will be subjected to penalties of loss of points and elimination from the competition.

1.2. Write the project timeline and give a presentation
- 1.2.1. Organize, prepare, and present a project timeline
- 1.2.2. Use data display instruments such as flow charts or cause and effect diagrams
- 1.2.3. As a team, develop a three to five-minute presentation portraying how your team will accomplish the building project, including the team's safety plan.
- 1.2.4. Presentations will be done on the Orientation Day and presented to the TeamWorks Technical Committee. A presentation schedule will be provided during the TeamWorks orientation.

TW 2.0 — Perform effectively as team members

2.1. Demonstrate group problem-solving techniques

2.2. Demonstrate team proficiency in construction of a building project

2.3. Perform additional teamwork competencies as determined by the TeamWorks Technical Committee

2.4. Communicate effectively among team members to complete given project in time allowed

TW 3.0 — Perform carpentry and roofing skills

3.1. Estimate and use the amount of materials needed and proper tools
- 3.1.1. Identify, receive, and inspect materials
- 3.1.2. Store materials correctly around work area
- 3.1.3. Use the correct amount of materials for the project in the correct manner
- 3.1.4. Identify and safely use all carpentry, roofing, electrical, plumbing and masonry hand or power tools

3.2. Perform framing and install subfloor and common roof rafters
- 3.2.1. Frame and install sill plate, girders, floor joists and bridging

3.2.2. Use dimensional and engineered wood products and steel products
3.2.3. Frame floor opening and install subfloor
3.2.4. Frame and brace walls to include corners, openings, trimmers, cripples, partitions, plumbing partitions, fixture backing and sheathing
3.2.5. Frame stair stringer and other components
3.2.6. Calculate and use the rise and run of a common roof
3.2.7. Lay out a common roof plan
3.2.8. Lay out, cut, and install common rafters, ridge board, ceiling joists and collar ties
3.2.9. Install roof sheathing, shingles, or other roofing materials

TW 4.0 — Perform masonry skills by laying and installing a brick/block wall

4.1. Estimate and use the materials and proper tools
4.1.1. Identify, receive, and inspect materials
4.1.2. Store materials correctly around work area
4.1.3. Use the correct amount of materials for the project in the correct manner
4.1.4. Identify and safely use masonry hand or power tools
4.1.5. Organize area neatly
4.1.6. Place mortar pans properly
4.1.7. Select and effectively arrange masonry tools
4.2. Tool and polish joints
4.2.1. Tool concave, rake weather, V-jointer, grapevine, and struck joints
4.2.2. Polish the joints
4.2.3. Tuckpoint a wall
4.2.4. Brush and touch up a wall
4.3. Lay a brick/block wall
4.3.1. Lay out a wall in preparation for building a straight and/or corner wall
4.3.2. Spread and furrow mortar correctly for brick units
4.3.3. Construct a straight wall
4.3.4. Construct an outside and inside corner lead
4.3.5. Spread bed joints and throw on full head joints for block units
4.3.6. Build a block corner to a specified height
4.3.7. Install lintels and moisture drainage such as masonry flashing and weep holes
4.3.8. Install brick detailing if requested

TW 5.0 — Perform plumbing by installing cleanout drains, roughing in water supply lines, performing pressure tests, and cutting, reaming, and joining

5.1. Estimate and use materials and proper tools
5.1.1. Identify, receive, and inspect materials
5.1.2. Store materials correctly around work area
5.1.3. Use the correct amount of materials for the project in the correct manner

5.1.4. Identify fittings from a sketch of a piping system
5.1.5. Identify and safely use all carpentry, roofing, electrical, plumbing and masonry hand or power tools

5.2. Rough in water supply lines and perform pressure tests
5.2.1. Calculate the slope required for waste and vent lines
5.2.2. Rough in waste and vent lines for sinks, lavatories, bathtubs, showers, and water closets
5.2.3. Install cleanout drains
5.2.4. Secure horizontal and vertical lines of pipe to wood, metal, and masonry surfaces
5.2.5. Rough in water supply lines for sinks, lavatories, bathtubs, showers, and water closets
5.2.6. Perform pressure tests on water supply system

5.3. Join pipes
5.3.1. Cut, ream, and join copper tubing using the sweat method
5.3.2. Cut, ream, and join copper tubing using the compression method
5.3.3. Cut, ream, and join CPVC and similar pipe
5.3.4. Cut, ream, and join PVC pipe
5.3.5. Cut, ream, and join ABS pipe
5.3.6. Cut, ream, and join copper tubing by sweat, compression or other methods

TW 6.0 — Perform electrical skills by laying out electrical installations

6.1. Estimate and use materials and use tools properly
6.1.1. Apply the current National Electrical Code
6.1.2. Plan, work, and lay out electrical installations
6.1.3. Identify, receive, and inspect materials
6.1.4. Correlate specifications, prints and job sites
6.1.5. Use the correct amount of materials for the project in the correct manner
6.1.6. Store materials correctly around work area
6.1.7. Identify and safely use all carpentry, electrical, plumbing and masonry hand or power tools

6.2. Rough in
6.2.1. Choose size and install ganged, octagon and surface mount boxes to a specified height
6.2.2. Install and staple all electrical wire free from hazard according to a blueprint
6.2.3. Perform splices and junctions in boxes

6.3. Install devices such as single pole switch, three-way switch, four-way switch, duplex grounded receptacle, ground fault circuit interrupter, light fixtures, and wall plates

TW7.0—Prepareforunique tasks thatmaybeincluded in a given situation

7.1. Run conduit in the electrical unit
7.2. Troubleshoot electrical circuits
7.3. Install plumbing fixtures
7.4. Install electrical fixtures
7.5. Repair or replace a P-trap or other plumbing fixture
7.6. Build a brick/block composite wall
7.7. Complete exterior or interior carpentry finish work
7.8. Install shingles, insulation, or other exterior residential materials
7.9. Install window(s)
7.10. Install door(s)
7.11. Install underlayment
7.12. Install floor coverings