



Contest Description

Welding

Post-Secondary

Date: April 16, 2026, 8:00 A.M.

Location: Yukon University, Welding shop

Duration of contest: 5 Hours

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| 1. SKILLS FOR SUCCESS FOR CAREERS IN SKILLED TRADES AND TECHNOLOGY..... | 2 |
| 2. CONTEST INTRODUCTION..... | 2 |
| 3. EQUIPMENT, MATERIAL, CLOTHING..... | 3 |
| 4. HEALTH & SAFETY..... | 5 |
| 5. ASSESSMENT..... | 6 |
| 6. ADDITIONAL INFORMATION..... | 6 |
| 7. NATIONAL & TERRITORIAL TECHNICAL COMMITTEES..... | 7 |

1. SKILLS FOR SUCCESS FOR CAREERS IN SKILLED TRADES AND TECHNOLOGY

The Government of Canada has updated the previous Essential Skills framework to the new Skills for Success model in response to the evolving labour market and changing skill requirements. This model outlines nine fundamental skills Canadians need to thrive in work, education, training, and daily life.

Skills/Compétences Canada aims to highlight the importance of these skills, vital for success in trade and technology careers. Competitors can see how Skills for Success are integrated into contest descriptions, projects, and project documents. Recognizing these skills during the competition helps competitors match tasks with specific skills necessary for success and understand how these skills apply within their trade or technology programs and future careers.

The nine key Skills for Success, validated for workplace success, are:

1. Numeracy
2. Communication
3. Collaboration
4. Adaptability
5. Reading
6. Writing
7. Problem Solving
8. Creativity and Innovation
9. Digital

2. CONTEST INTRODUCTION

2.1. Description of the associated work role(s) or occupation(s):

<https://www.skillscompetencescanada.com/en/competition/scnc-regina-2025-10-welding/>

2.2. Purpose of the Challenge

This competition will be assessing the contestant's ability in the trade of welding. Contestants must demonstrate their knowledge in reading plans and interpreting welding symbols, and their mastery of the main welding processes used in today's industry. Contest duration will be 5 hours. Post-secondary competitors and secondary competitors will be completing one 5 hour project. The assembly and welding work will be assessed based on the technical plans and welding processes specified in the projects.

2.3. Duration of Contest

5 Hours. Competitors will begin at 9:00AM and have until 4:00PM to complete all of their tasks, including tidying their work station.

2.4. Skills and Knowledge to be Tested

- See project description in Project Drawings

Theoretical elements - The contest's theoretical portion is limited to the knowledge required to execute the practical work. These elements are integrated into the contest for evaluation purposes, and include the following skills:

- Interpretation of plans (engineering drawing)
- Interpretation of welding symbols
- Knowledge of base metals and filler metals
- Adjustment of welding machines
- Workplace safety rules
- Notes
- All measurements are shown in metric
- All instructions and plans will be provided in English.

Practical tasks

Post-secondary

- Shielded metal arc welding (SMAW, mild steel)
- Gas metal arc welding (GMAW, mild steel)
- Flux cored arc welding (FCAW, mild steel)
- Gas tungsten arc welding (GTAW, mild steel, stainless steel and aluminum)

| Post-secondary |
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| Assemble and weld mild steel structures: |
| SMAW, GMAW, FCAW |
| Plate: 1G, 2G, 3G, 4G Fillet Weld: 1F, 2F, 3F, 4F, 5F Pipe: 1G, 2G, 3G, 5G,6G |
| Assemble and weld stainless steel, carbon steel and aluminum structures: |
| GTAW |
| Plate: 1G, 2G, 3G, 4G Fillet: 1F, 2F, 3F, 4F, 5F Pipe: 1G, 2G, 3G, 5G,6G |

3. **EQUIPMENT, MATERIAL, CLOTHING**

3.1. Equipment and material provided by Skills Canada Yukon:

- Cerium, and E3 types electrodes

- Cups and collets.
- Tungsten sharpener
- Plans and instructions
- Set or practice materials
- All basic materials required to complete projects
- Foot control (pedal) for the GTAW process
- All filler materials
- Aluminum solvent (cleaner) will be provided
- Angle grinder
- Grinding disc
- Welding machines and accessories for Post Secondary competition: Miller Diverson 180 AC/DC, with foot pedal control and PipeWorx Multi Process units.
- Welding machines and accessories for Secondary competition: Pipeworx 400 Multi Process Units.
- All equipment can be view at www.millerwelds.com
- Competitors can use any function on the machines. Competitors will be orientated on the basic capability of the machine.
- **Post-secondary materials**
 - Low carbon steel
 - Plate thickness: 3 mm - 9.5 mm
 - Pipe wall thickness: 3.56 mm – 6.02 mm
 - Diameter: 42.2 mm – 114.3 mm
 - Stainless Steel: 3.2 mm
 - Filler materials
 - SMAW = E4918, 2.4 mm and 3.2 mm
 - SMAW = E4310, 3.2 and 2.5 mm or E4311, 3.2 and 2.5 mm
 - GMAW = ISO B-G49A SC G6 (ER49S-6), 0.9 mm
 - FCAW = E491T-9-CH, 1.2 mm
 - GTAW = ISO B-G49A SC G3 (ER49S-3), 1.6 and 2.4 and 3.2 mm
 - GTAW = ER4043, 2.4 and 3.2 mm
 - Shielding gas
 - GMAW / FCAW = 75% Ar + 25% CO₂
 - GTAW = Argon

3.2. Equipment and material provided by the Competitor

- Tungsten
- Helmet, #10, 11 or 12 lens
- Speed lenses (optional)
- Soap Stone / markers
- Centre punch

- Scriber
- Cold chisel
- 12" combination square (45° / 90°)
- Welding gauge
- Chipping hammer
- Steel and stainless steel wire brushes
- Dividers
- Protractor gauge
- Digital level or level
- Ball peen hammer
- All-purpose pliers / side cutters
- Vice grip AND C-CLAMPS
- Magnet bracket
- Files with handles
- Wedges
- Water spray bottle (e.g. Windex bottle)
- Wrap-A-Round
- Personal Grinders are not permitted
- Hacksaw
- Measuring tape metric
- Metric ruler
- Magnetic work light.
- Trigger clamps
- Picks
- Grinders will be provided in a grinding booth
- COMPETITORS WILL BE REQUIRED TO USE THE MATERIAL AND EQUIPMENT PROVIDED BY SCY. ALL OTHER MATERIAL AND EQUIPMENT WILL BE REMOVED FROM THE SKILL AREA.

3.3. Required Clothing provided by the Competitor

- Appropriate work clothes, no synthetic materials
- CSA approved footwear
- Welding helmet, #10, 11 or 12 lens

4. HEALTH & SAFETY

4.1. Safety Orientation

During orientation, Competitors will participate in a Safety workshop and they will be expected to work and maintain a safe working area during the competition.

List of required personal protective equipment (PPE) provided by Skills Canada Yukon:

- Personal protective equipment (PPE) provided by Skills Canada Yukon
 - Hearing protection

- Safety glasses
- Rubber gloves
- Clear face shield
- Personal protective equipment (PPE) provided by competitors:
 - CSA approved safety shoes
 - Welding helmet
 - Welder's gloves

NOTE: Competitors who do not have the required protective equipment/clothing will not be allowed to participate in the competition

4.2. Field Level Risk Assessment

SCY will complete a Field Level Risk Assessment for every competition area in addition to a full walkthrough with a representative from Yukon Workers Safety and Compensation Board to identify potential hazards and create solutions. The primary goal of an FLRA is to identify and mitigate potential risks to ensure the safety of competitors.

5. ASSESSMENT

5.1. Point Breakdown

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| POINT BREAKDOWN | /100 |
| POST-SECONDARY: Madsen Box | |
| Drawing: 5 hours | /100 |

5.2. Qualifying for the Skills Canada National Competition

Competitors can secure a win in their specific competitions by demonstrating exceptional skills and abilities, and meeting or exceeding established evaluation criteria. However, qualification for the Skills Canada National Competition is not solely determined by winning at the territorial level.

The decision to advance further depends on additional factors, such as the National Technical Committee's (NTC) assessment and/or the judges' discretion, which may take into account specific criteria beyond just event performance. These additional criteria could encompass a competitor's adherence to safety protocols, ethical conduct, teamwork, or overall professionalism, ensuring that those who represent the Territory at the national level not only excel in their technical skills but also embody the values and standards upheld by Skills Canada.

***Please note:** Not all territorial contest areas are eligible for the Skills Canada National Competition. Please refer to the SCNC website to determine if your skill area/level is eligible to compete.

6. ADDITIONAL INFORMATION

6.1. Competition Rules

Refer to the competition rules of the Skills Canada Yukon Territorial Competition which can be found on our website.

6.2. Ties

Tiebreaker #1: In the event of a tie, the candidate with the highest safety score will be declared the winner.

Tiebreaker #2: If a tie still remains, the competitor with the highest score in the Madsen Box will be declared the winner.

6.3. Accessibility & Accommodations

Skills Canada Yukon is committed to providing a barrier-free environment which allows everyone to participate in our programs and competitions. We strive to be fully inclusive to all manner of disabilities and identities. SCY provides the opportunity for any competitor to disclose a disability on our competition registration form. Requests for accommodations must be made at least 3 weeks prior to the competition date.

7. NATIONAL & TERRITORIAL TECHNICAL COMMITTEES

7.1. The Yukon National Technical Committee member for Welding is Sky Pearson.
Email: spearson@yukonu.ca

7.2. Please contact yukon@skillscanada.com with questions or concerns related to the competition.