



TERRITORIAL COMPETITION

CONTEST DESCRIPTION DOCUMENT

53 – OUTDOOR POWER AND RECREATION EQUIPMENT Secondary & Post Secondary Level **(NOTE: Scope may change without notice)**

PURPOSE OF THE CHALLENGE

DURATION: 11 HOURS

To test each student's skill and knowledge in the areas of inspection, measurement, maintenance and repair of small engines and recreational vehicles. Prepare each student for employment in the industry.

SKILLS AND KNOWLEDGE TO BE TESTED

Theory 35 % Practical 65%

All phases of measurement will deal exclusively with metric only.

Tasks that will be performed during the contest:

- To demonstrate the skill and knowledge involved with the service and repair of two and four stroke engines
- Use of metric precision measuring tools
 - Micrometers
 - Dial bore gauge
 - Vernier caliper
 - Feeler gauge
 - Dial indicator
 - Plastigauge

- Accurately measure and analyze engine components for wear
- Metal cutting, tapping, drilling and filing
- Fuel Injection and Carburetor theory, adjustments procedures
- Use of repair manuals for retrieval of procedures, specifications, and troubleshooting charts
- Accurately perform compression, leak down, and crankcase pressure and vacuum test
- Technical competence and safe work practice/procedures
- Tool handling and recognition
- CVT Transmission service and theory of operation
- Belt, Chain, Gear Final Drive System Service
- Multiple Clutch and Constant Mesh Transmission operation
- Knowledge of Trade related Tire applications and designs
- General knowledge of 4 Cycle theory
- General knowledge of 2 Cycle theory
- Use of Digital Volt-Ohm Meter
- Electrical Measurements including Volts, Ohms, Amps, and Voltage Drops
- Ignition, charging, starting, and lighting system theory, inspection, and diagnosis

Due to physical constraints equipment will not be operational.

ESSENTIAL SKILLS

Essential skills are used in nearly every job to varying degrees. They provide a foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change. Good Essential Skills will help you understand and remember concepts introduced in technical training. The level of Essential Skills required for most trades is as high or higher than for many office jobs.

Of the nine skills that have been identified and validated as key essential skills for the workplace, this contest involves the following:

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|-------------------------------------|---------------------|-------------------------------------|--------------------|-------------------------------------|---------------------|
| <input type="checkbox"/> | Continuous Learning | <input checked="" type="checkbox"/> | Numeracy | <input checked="" type="checkbox"/> | Thinking |
| <input checked="" type="checkbox"/> | Digital | <input type="checkbox"/> | Oral Communication | <input type="checkbox"/> | Working with Others |
| <input checked="" type="checkbox"/> | Document Use | <input checked="" type="checkbox"/> | Reading Text | <input type="checkbox"/> | Writing |

EQUIPMENT, TOOLS, SUPPLIES, AND CLOTHING

PROVIDED BY THE COMPETITOR:

- Safety glasses
- CSA approved safety footwear
- Coveralls

Note: Competitors will not be allowed to compete if the above items are not brought and used.

PROVIDED BY THE COMMITTEE:

- Small engine components and vehicles
- All necessary materials, hand tools, diagnostic equipment, and shop equipment to perform the tasks

SAFETY REQUIREMENTS

Failure to comply with safety regulations will result in disqualification or removal of competitor from competition.

Safety goggles/glasses, CSA approved safety footwear, and appropriate work apparel (coveralls/shop coats) must be worn at all times

ASSESSMENT

JUDGING CRITERIA:

1. Knowledge exhibited by the level of completion of the written test
2. Comprehension of written instructions and safe service procedures
3. Interpretation and performance of all tasks
4. Diagnostic abilities
5. Safe and clean work habits

POINT BREAKDOWN

SECONDARY - POINT BREAKDOWN	/100
Engine Teardown and Measurement Lab	40
Hand Skill Project	15
Electrical Circuit Diagnostics and Ohm's Law Lab	15
Snowblower Drivetrain and Maintenance Lab	15
4 Stroke Engine Diagnostics Lab i.e. Compression & Leak Down Tests	15
POST-SECONDARY - POINT BREAKDOWN	/100
Outboard Motor Lower Unit Service, Powerhead Service Lab	25
ATV Drive System, Multiplate Clutch, Constant Mesh Transmission Lab	25
Motorcycle EFI Diagnostic, Starting and Charging System Diagnostics Lab	25
2 Stroke Top End Measurement & 4 Stroke DOHC Valve Adjustment Lab	25

TECHNICAL COMMITTEE MEMBERS - JUDGES

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For details regarding the Skills Canada National Competition Outdoor Power & Recreational Equipment Contest Description, please visit:

<https://www.skillscompetencescanada.com/en/skills/transportation/outdoor-power-recreational-equipment-documents/>