

## **Attention Competitors**

**At the 2006 Provincial Skills Competition  
Safety is # 1**

**Each Event Area Will Have Safety Equipment  
and Requirements That Competitors Must  
Adhere To**

**Important Must Read!!!!**

**Competitors Must Meet All Safety Requirements  
To Compete At The Provincial Skills Competition**

**Please Consult The Scope Document To  
Determine The Safety Requirements For Your  
Area**

**It Is Recommended That Competitors Check The  
Scope Document To Ensure You Meet All Safety  
Requirements**

**Scope Documents May Be Updated Until January  
13th**

# 2006 Provincial Skills Competition

## Scope Document

---

<b>EVENT:</b> ELECTRONICS	<b>LEVEL:</b> SECONDARY
<b>START TIME:</b> 8:00 AM. MARCH 17, 2006	<b>LOCATION:</b> SIAST KELSEY CAMPUS Room 325
<b>INTERNATIONAL TRADE #:</b> 16	<b>DURATION:</b> 6 HRS.

**SAFETY REQUIREMENTS:** Competitors are required to follow all industry safety standards during the competition.

### **PURPOSE OF THE CHALLENGE:**

To evaluate each competitor's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of electronics technology. Also, this competition is designed to develop and foster an interest in the electronics trade.

### **SKILLS AND KNOWLEDGE TO BE TESTED:**

Each competitor will be tested in the following areas:

Theory 15% Practical 85%

The competition will cover the theoretical and practical aspects of current state of the art electronic industry standards. The competitor may be asked to demonstrate abilities in the following areas:

- Interpret electronic schematic diagrams, pictorials, manufacturer's technical specifications and supplier catalogues.
- Identify common electrical and electronic components.
- Construct, analyse and troubleshoot DC circuits including series resistance, series parallel resistance and solid state switching.
- Construct, analyse and troubleshoot AC circuits including capacitive, inductive and complex RLC circuits.
- Construct, analyse and troubleshoot analog circuits including discrete amplifiers, operational amplifiers and comparator circuits.
- Construct, analyse and troubleshoot digital circuits including TTL/CMOS gates, timers, and optical devices.
- Hand solder components on a printed circuit board to acceptable industry standards.
- Hand de-solder through hole mount components on a printed circuit board.
- Set-up and demonstrate use of common electronic measuring equipment including multimeters, 0-12 VOLT DC power supply,
- Troubleshoot simple electronic circuits having a preinstalled fault.
- Reverse Engineer a simple electronic circuit.

### **EQUIPMENT AND MATERIALS:**

*Supplied by the Committee:*

- Bench equipment
- Dual Power Supply 0 to +/- 15 volts @ 1 amp
- Digital Multimeter
- Projects and Documentation

***Supplied by the Competitor:***

- Pencils, pens, erasers, rulers
- Safety glasses – not required if prescription glasses are worn
- 2 – Breadboards, minimum size each 2” x 6” (wire will be supplied)
- Hand Tools: 25 watt Solder Iron, Stand, Tip cleaner, tips of choice. Butane solder devices will not be allowed.
- Hand vacuum extractor or Solder wick
- Long nose pliers
- Side cutters
- Wire stripper
- Screwdrivers: slot, Philips, Robertson (#2)
- “Third Hand” including magnifying glass
- Power bar, 4 or more outlet (at least)

**The Technical Committee will inspect other tools for suitability**

**CLOTHING REQUIREMENTS:**

***Competitor Must Provide:***

Competitors are to be dressed in a clean and appropriate manner.

No jewellery on hands or wrists. A wrist watch MAY be worn.

Competitors will be allowed to listen to music from a personal CD or Tape player during the competition. Only original recordings will be acceptable.

**JUDGING CRITERIA**

Point Breakdown:

The following descriptors will be used:

Perfect =	10	Medium =	5
Very Good =	9	Weak =	4
Good =	8	Insufficient =	3
Rather Good =	7	Bad =	2
Sufficient =	6	Very Bad =	1
		Zero =	0

**ADDITIONAL NOTES:**

In the event of a tie in the competition, the tie will be broken by the mark achieved on the following project sections:

- Theory Exam (Study guide will be posted 1 week BEFORE the competition!!!)
- Construction project
- Troubleshooting assignment
- Reverse engineering assignment
- Current competition documents will be available to the competitor only at the time of competition.
- Safety glasses must be worn for the soldering/desoldering project.

**COMMITTEE MEMBERS:**

Brad Amy            L.P.Miller Comprehensive School, Nipawin  
Lorne Triska        Peacock High School, Moose Jaw