## CONTENT STANDARD 1.0: BASIC SAFETY

**Performance Standard 1.1: Workplace Safety**

1.1.1. Describe general shop safety rules and procedures.
1.1.2. Utilize safe procedures for handling of tools and equipment.
1.1.3. Utilize proper ventilation procedures for working within the lab/shop area.
1.1.4. Identify marked safety areas.
1.1.5. Identify the location and the types of fire extinguishers and other fire safety equipment; demonstrate knowledge of the procedures for using fire extinguishers and other safety equipment.
1.1.6. Identify the location and use of eye wash stations.
1.1.7. Identify the location of the posted evacuation routes.
1.1.8. Comply with the required use of safety glasses, ear protection, gloves and shoes during lab/shop activities.
1.1.9. Identify and wear appropriate clothing for lab/shop activities.
1.1.10. Secure hair and jewelry for lab/shop activities.
1.1.11. Locate and interpret safety data sheets (SDS).
1.1.12. Handle, store, and dispose of hazardous and flammable waste and materials.

## CONTENT STANDARD 2.0: TOOLS

**Performance Standard 2.1: Basic Tools**

2.1.1 Identify basic tools.
2.1.2 Identify basic tool usage.
2.1.3 Demonstrate common tools knowledge.
2.1.4 Determine maintenance procedures.

## CONTENT STANDARD 3.0: FASTENERS

**Performance Standard 3.1: Proper use of fasteners**

3.1.1 Define fastener terms.
3.1.2 Identify fasteners.
3.1.3 Select correct fasteners.
3.1.4 Rethread tapped holes.
3.1.5 Rethread damaged fasteners.
3.1.6 Remove seized fasteners.
3.1.7 Demonstrate proper torque methods.
3.1.8 Demonstrate common fastener knowledge.
3.1.9 Select specific application of threaded and nonthreaded fasteners.
3.1.10 Select seized nut and bolt removal methods.
3.1.11 Demonstrate common fastener knowledge command.

## CONTENT STANDARD 4.0: MEASUREMENT

**Performance Standard 4.1: Precision Measuring Instruments**

4.1.1 Define measuring terms.
4.1.2 Identify measuring instruments.
4.1.3 Determine measuring steps.
4.1.4 Demonstrate the use of measuring instruments.
4.1.5 Demonstrate precision measuring.

**CONTENT STANDARD 5.0: BASIC ELECTRICAL**

**Performance Standard 5.1: Basic Electrical Theory and System**

5.1.1 Identify basic electrical schematic symbols.
5.1.2 Identify parts of a basic electrical system.
5.1.3 Understand basic electrical theory.
5.1.4 Understand basic electrical circuits.
5.1.5 Demonstrate proper use of a multimeter.

**CONTENT STANDARD 6.0: ENGINE DESIGN AND THEORY**

**Performance Standard 6.1: Basic Engine Principles and Design**

6.1.1 Identify engine type and application.
6.1.2 Identify type of operation.
6.1.3 Explain theory of operation.
6.1.4 Identify engine components and their function.
6.1.5 Interpret various engine model codes.
6.1.6 Understand the terms of work, horsepower, torque, displacement and compression.

**Performance Standard 6.2: Operation of a 2-stroke Engine**

6.2.1 Define 2-stroke engine terms.
6.2.2 Define 2-stroke engine operations.
6.2.3 Identify 2-stroke engine components.
6.2.4 Demonstrate knowledge of 2-stroke engine operation.
6.2.5 Diagnose, troubleshoot, and repair a 2-stroke engine.

**Performance Standard 6.3: Operation of a 4-stroke Engine**

6.3.1 Define 4-stroke engine terms.
6.3.2 Define 4-stroke engine operations.
6.3.3 Identify 4-stroke engine components.
6.3.4 Demonstrate knowledge of 4-stroke engine operation.
6.3.5 Diagnose, troubleshoot, and repair a 4-stroke engine

**Performance Standard 6.4: Overhaul of a 4-stroke Engine**

6.4.1 Diagnose various engine problems.
6.4.2 Demonstrate engine overhaul knowledge and competence.
6.4.3 Perform and evaluate failure analysis.
6.4.4 Disassemble and evaluate a 4-stroke engine.
6.4.5 Inspect internal components.
6.4.6 Service, replace or repair damaged internal components.
6.4.7 Reassemble a 4-stroke engine.
**Performance Standard 6.5: Overhaul a 2-stroke Engine**

- 6.5.1. Diagnose various engine problems.
- 6.5.2. Demonstrate engine overhaul knowledge and competence.
- 6.5.3. Perform and evaluate failure analysis.
- 6.5.4. Disassemble and evaluate a 2-stroke engine.
- 6.5.5. Inspect internal components.
- 6.5.6. Service, replace or repair damaged internal components.
- 6.5.7. Reassemble a 2-stroke engine.

**Performance Standard 6.6: Cooling and Lubrication Systems**

- 6.6.1. Identify type of cooling and lubrication systems.
- 6.6.2. Identify the components and function of a cooling system.
- 6.6.3. Identify the components and function of a lubrication system.
- 6.6.4. Identify proper types of oils and their applications.

**Performance Standard 6.7: Fuel Systems**

- 6.7.1. Define types of fuel systems.
- 6.7.2. Define fuel system theory.
- 6.7.3. Identify fuel system components and their functions.
- 6.7.4. Identify fuel system supply functions.
- 6.7.5. Service fuel systems components.
- 6.7.6. Diagnose, troubleshoot and repair fuel system malfunctions.

**Performance Standard 6.8: Governor Systems**

- 6.8.1. Identify different types of governor systems and their components.
- 6.8.2. Identify governor theory, operation, and adjustments.
- 6.8.3. Diagnose, troubleshoot and repair governor malfunctions.

**Performance Standard 6.9: Ignition Systems**

- 6.9.1. Identify basic types of ignition systems and theory of operation.
- 6.9.2. Identify components and functions of a basic ignition system.
- 6.9.3. Diagnose, troubleshoot, and repair ignition system malfunctions.

**Performance Standard 6.10: Charging Systems**

- 6.10.1. Identify basic types of charging systems and theory of operation.
- 6.10.2. Identify components and functions of a basic charging system.
- 6.10.3. Diagnose, troubleshoot, and repair charging system malfunctions.

**Performance Standard 6.11: Starting Systems**

- 6.11.1. Identify basic types of starting systems and theory of operation.
- 6.11.2. Identify components and functions of a basic starting system.
- 6.11.3. Diagnose, troubleshoot, and repair starting system malfunctions.

**CONTENT STANDARD 7.0: MAINTENANCE**

**Performance Standard 7.1: Basic Maintenance**

- 7.1.1. Describe a periodic maintenance program.
7.1.2. Research owner’s manuals, service schedules, and manufacturer’s data to perform proper periodic maintenance.

### CONTENT STANDARD 8.0: PARTS AND SERVICE MANAGEMENT

#### Performance Standard 8.1: Parts and Service Operation

8.1.1. Understand the concept of inventory control.
8.1.2. Identify how to look up parts.
8.1.3. Ability to look up flat rate.
8.1.4. Complete a customer service order.
8.1.5. Explain why parts management and inventory control is needed.

### CONTENT STANDARD 9.0: CAREER EXPLORATION

#### Performance Standard 9.1: Career Opportunities

9.1.1. List and describe the types of employment opportunities in power sports/small engine repair.