

## 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.