

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 1	Follow verbal instructions to complete work assignments and rules. Follow written instructions to complete work assignments and rules.	Expectations Goals Workplace	Expectations Presentation
Week 2	Inspect and use Personal Protection Equipment (PPE) daily. Maintain proper organization and operation of work area. Perform housekeeping duties daily. Follow emergency action plan.	PPE: Personal Protective Equipment Welding Helmet Safety Glasses Leather Gloves Earplugs Welding Jacket Closed toed leather shoes Cleaning Wheel Emergency Action Plan Broom Brush Pan	Cleaning tools PPE Cleaning wheel Emergency action plan

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Week 3	Display familiarity with industrial and OSHA safety standards. Demonstrate proper use of ventilation equipment. Identify Safety Data Sheets (SDS) and precautionary labeling. Discuss proper Hot Work operation.	OSHA: Occupational Safety and Health Administration Forced Ventilation Natural Ventilation SDS: Safety Data Sheets Hot Work Electric Shock Electrical Ground Electrical Resistance Flash Burn Fire extinguisher Fire blanket Welding American Welding Society	Presentation Principles of Welding Textbook Safety Data Sheets Shop equipment.

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 4	Complete time or job sheet, reports or records. Identify oxy-fuel safety procedures.	Time Cards Oxygen Acetylene Torch Torch Valves Line Pressure Adjusting Screws Mixing Chamber Cylinder Pressure Gauges Line Pressure Gauges Cylinder Hose Cylinder Chain Support Cylinder Valves PSI: Pounds Per Square Inch Regulator Cutting Welding Pliers Soapstone Safety Valve Fusible Plugs Striker Torch Trigger Leak-detecting	Time Cards Oxy-fuel Parts ID Worksheet Oxy-fuel Unit

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 5	Perform safety inspections of OFC equipment and accessories. Set up for manual OFC operations on steel. Operate manual OFC equipment.	Oxygen Acetylene Torch Torch Valves Line Pressure Adjusting Screws Mixing Chamber Cylinder Pressure Gauges Line Pressure Gauges Cylinder Hose Cylinder Chain Support Cylinder Valves PSI: Pounds Per Square Inch Regulator Cutting Safety Valve Fusible Plugs Striker Torch Trigger Leak-detecting Welding Pliers Soapstone	Oxy-fuel Unit PPE Metal Shop Equipment

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 6	Set up for manual OFC operations on steel. Operate manual OFC equipment.	Oxygen Acetylene Torch Torch Valves Line Pressure Adjusting Screws Mixing Chamber Cylinder Pressure Gauges Line Pressure Gauges Cylinder Hose Cylinder Chain Support Cylinder Valves PSI: Pounds Per Square Inch Regulator Cutting Safety Valve Fusible Plugs Striker Torch Trigger Leak-detecting Welding Pliers Soapstone	Oxy-fuel Unit PPE Shop Equipment Metal

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 7	Operate manual OFC equipment. Perform straight cutting operations on steel.	Oxygen Acetylene Torch Torch Valves Line Pressure Adjusting Screws Mixing Chamber Cylinder Pressure Gauges Line Pressure Gauges Cylinder Hose Cylinder Chain Support Cylinder Valves PSI: Pounds Per Square Inch Regulator Cutting Safety Valve Fusible Plugs Striker Torch Trigger Leak-detecting Welding Pliers Soapstone	Oxy-fuel Unit PPE Metal Shop Equipment Assessment Rubric

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 8	Identify arc welding/cutting safety procedures. Demonstrate knowledge of proper work actions for working in confined spaces.	Electrode Voltage Current Wattage Welding Clamp Cable Terminal Electrode Holder Cable Terminal Welding Clamp Ground Power Switch Amperage Adjustment Control Welding Processor Switch Welding Unit Welding Leads	Arc Welder PPE Metal Arc Welder Assessment Shop Equipment Video Worksheet
Week 9	Clean and prepare materials for welding and/or cutting. Demonstrate proper use of standard measuring and layout tools. Demonstrate proper use of hand tools. Demonstrate proper use of power equipment.	Shearer Drill Welding Pliers Chipping Hammer Lineman Pliers Wire brush Quenching Tub -Welding Pliers -Soapstone -Welding Magnet -Grinder -Electrode Warmer -Slag	PPE Measuring Tools Metal Cleaning Equipment Shop Equipment Hand Tools Power Equipment

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 10	Inspect welding and thermal cutting equipment for safe operation. Perform safety inspections of SMAW equipment and accessories. Set up and operate SMAW equipment.	Electrode Voltage Current Wattage Welding Clamp Cable Terminal Electrode Holder Cable Terminal Welding Clamp Ground Power Switch Amperage Adjustment Control Welding Processor Switch Welding Unit Welding Leads Arc Length Arc Angle -MAW: Shielded Metal Arc Welding Ventilation Flash Burn Shade 10	PPE Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 11	Identify various joint designs (joint geometry). Make fillet welds in all positions.	Tee Joint Corner Joint Lap Joint Butt Joint Beveled Butt Joint Edge Joint Horizontal Vertical Overhead Beads Weld Penetration	PPE Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment iPad Worksheet Welding Textbook
Week 12	Identify major types of metals (ferrous and nonferrous) used in welding. Make fillet welds in all positions.	Ferrous Nonferrous Lap Weld Iron Magnetic Resistance Value Fillet Welds	PPE Various Types of Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment Presentation Welding Textbook.
Week 13	Describe the basic principles of heat, expansion and contraction as it relates to metals. Make fillet welds in all positions.	Expanding Condensing Kinetic Energy Atoms Molecules Butt welds	PPE Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment Video iPad Presentation Materials Welding Textbook

Week/Month	Learning Objectives	Key Vocabulary	Instructional Resources
Week 14	Describe the industry accepted welding codes, standards and procedures and their use. Make fillet welds in all positions.	Welding Code Welding Specifications Tee-Welds	PPE Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment Welding Textbook Notes Scenarios
Week 15	Select appropriate welding techniques, equipment and supplies for a given metal or process. Make fillet welds in all positions.	Tensile Strength Welding Technique Low-alloyed Carbon Steel Welding Position Flux Covering Moisture Control Covered Electrode C Technique J Technique Figure 8 Technique Circular Technique Corner Welds	PPE Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment

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Week 16	Select appropriate welding techniques, equipment and supplies for a given metal or process. Make fillet welds in all positions.	Tensile Strength Welding Technique Low-alloyed Carbon Steel Welding Position Flux Covering Moisture Control Covered Electrode C Technique J Technique Figure 8 Technique Circular Technique Beveled Butt Joints	PPE Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment
Week 17	Select appropriate welding techniques, equipment and supplies for a given metal or process. Make fillet welds in all positions.	Tensile Strength Welding Technique Low-alloyed Carbon Steel Welding Position Flux Covering Moisture Control Covered Electrode C Technique J Technique Figure 8 Technique Circular Technique Beveled Butt Joints	PPE Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment

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Week 18	Select appropriate welding techniques, equipment and supplies for a given metal or process. Make fillet welds in all positions.	Tensile Strength Welding Technique Low-alloyed Carbon Steel Welding Position Flux Covering Moisture Control Covered Electrode C Technique J Technique Figure 8 Technique Circular Technique Beveled Butt Joints Career	PPE Metal Cleaning Equipment Shop Equipment Power Equipment Welding Equipment iPad Worksheet