

Course:

Level:

Date:

Topic: Unit 1 Basic Safety (Construction Site Safety Orientation)

Key Learning:

- Safety in the workplace

Unit Essential Question(s):

- **How do individuals protect themselves and others at the worksite?**
- **How do different techniques maintain safety throughout elevated work, fall precautions, struck - by hazards, and energy hazards?**

Concept: Safety and Hazard Recognition	Concept: Elevated Work and Fall Protection	Concept: Struck- By and Caught - In - Between Hazards
Concept description: Describe the importance of safety, the causes of workplace incidents and accidents and the process of hazard recognition and control.	Concept description: Describe the safe work requirements for elevated work, including fall protection guidelines.	Concept description: Identify and explain how to avoid struck - by and caught - in - between hazards.
List standards here		
<p>Lesson Essential Question(s):</p> <ol style="list-style-type: none"> 1. How do you incidents affect and business financially? 2. How do incidents occur at the job-site and what are the related consequences? 3. How can a worker identify a hazard and control the situation through the use of HAZCOM and the provisions within the safety data sheet? 	<p>Lesson Essential Question(s):</p> <ol style="list-style-type: none"> 1. How do you identify and describe various fall hazards? 2. How do you identify and describe equipment and methods used in fall prevention and fall arrest? 3. How do you identify and describe the safe use of ladders and stairs? 4. How do you identify and describe the use of scaffolds? 	<p>Lesson Essential Question(s):</p> <ol style="list-style-type: none"> 1. How do you identify and avoid struck - by and caught - in - between hazards? 2. How do you identify and avoid how caught- in and caught - between hazards?
Vocabulary: Accident, Combustible, Competent person, Confined space, Flammable, Ground fault, Hazard Communication Standard, Hydraulic, Incident, Management system, Occupational Safety and Health Administration, Personal protective equipment, Pneumatic, Respirator, Safety culture, Safety data sheet, Trench	Vocabulary: Cross - bracing, Excavation, Guarded, Hand line, Lanyard, Maximum intended load, Midrail, Planked, Scaffold, Six - foot rule, Toeboard, Top rail	Vocabulary: Shielding, Shoring, Signaler, Spoil

Course:

Level:

Date:

Concept: Energy Release Hazards	Concept: Personal Protective Equipment	Concept: Job-Site Hazards
Concept description: Identify common energy – related hazards and explain how to avoid them.	Concept description: Identify and describe the proper use of personal protective equipment.	Concept description: Identify and describe specific job – site safety hazards.
List standards here		
Lesson Essential Question(s): <ol style="list-style-type: none">1. How do job – site electrical safety guidelines assist in protecting employees?2. How do lockout/tag out procedures occur and how do the procedures protect employees?	Lesson Essential Question(s): <ol style="list-style-type: none">1. How does the use of PPE protect workers from bodily injury?2. What are potential are respiratory hazards and how can workers protect against respiratory injuries?	Lesson Essential Question(s): <ol style="list-style-type: none">1. How are exposure hazards identified at the job site?2. How do environmental extremes provide potential risks?3. How does hot work provided potential risks?4. How does an individual use basic firefighting procedures to eliminate fire hazards?5. How do confined spaces impact safety and which related safety considerations should be in place?
Vocabulary: Ground, Ground fault circuit interrupter (GFCI), Lockout/tagout (LOTO), Proximity work	Vocabulary: Arc welding	Vocabulary: Brazing, Flash burn, Flash point, Permit – required confined space, Qualified person, Welding curtain, Wind sock

Course:

Level:

Date:

Topic: Unit 2 Introduction to Construction Math**Key Learning:**

- The importance of math in careers

Unit Essential Question(s):

- **How is math used in the construction field?**

Concept: Whole Numbers	Concept: Fractions	Concept: The Decimal System
Concept description: Identify whole numbers and demonstrate how to work with them mathematically.	Concept description: Explain how to work with fractions.	Concept description: Describe the decimal system and explain how to work with decimals.
List standards here		
Lesson Essential Question(s): <ol style="list-style-type: none"> 1. What are different whole number and their place values? 2. How do you add and subtract whole numbers? 3. How do you multiply and divide whole numbers? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How do you define equivalent fractions and show how to find lowest common denominators? 2. How does one change an improper fraction to a mixed number? 3. How does one add and subtract fractions? 4. How does one multiply and divide fractions? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How do place holders affect decimals? 2. How does one add, subtract, multiply and divide fractions? 3. How does one convert between decimals, fractions, and percentages?
Vocabulary: Decimal, Difference, Digit, Dividend, Divisor, Equation, Fraction, Negative numbers, Place value, Positive numbers, Product, Quotient, Remainder, Sum, Whole numbers	Vocabulary: Denominator, Equivalent fractions, Improper fraction, Invert, Mixed number, Numerator	Vocabulary:

Concept: Measuring Length	Concept: Metric and Imperial Measurement Systems	Concept: Introduction to Geometry
Concept description: Identify various tools used to measure length and show how the tools are used.	Concept description: Identify and convert units of length, weight, volume, and temperature between the Imperial and metric systems of measurement.	Concept description: Identify basic angles and geometric shapes and explain how to calculate their area and volume.
List standards here		
Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How does one use a ruler to complete accurate measurements? 2. How does one use a measuring tape to complete accurate measurements? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How does one convert units of length between Imperial and metric systems? 2. How does one convert units of weight between Imperial and metric systems? 3. How does one convert units of volume between Imperial and metric systems? 4. How does one convert units of temperature between Imperial and metric systems? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How does one use angles and basic geometric shapes within the construction field? 2. How does one calculate the area of two – dimensional shapes? 3. How does one calculate the volume of three – dimensional shapes?
Vocabulary: Joists, Loadbearing, Stud	Vocabulary: Force, Mass, Unit, Volume	Vocabulary: Acute angle, Adjacent angle, Angle, Area, Base, Bisect, Circle, Circumference, Cube, Degree, Diagonal, Diameter, Equilateral triangle, Formula, Isosceles triangle, Obtuse angle, Opposite angles, Perimeter, Pi, Plane geometry, Radius, Rectangle, Right angle, Right triangle, Scalene triangle, Solid geometry, Square, Straight angle, Triangle, Vertex

Course:

Level:

Date:

Topic: Unit 3 Introduction to Hand Tools and Power Tools

Key Learning:

- Important tools of the trades

Unit Essential Question(s):

- **How are tools used in the construction business and how do construction employees ensure safety during the use of tools?**

Concept: Common Hand Tools	Concept: Measurement and Layout Tools	Concept: Cutting and Shaping Tools
Concept description: Identify and explain how to use various types of hand tools.	Concept description: Identify and describe how to use various types of measurement and layout tools.	Concept description: Identify and explain how to use various types of cutting and shaping tools.
List standards here		
Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How are hand tools used in the construction field? 2. How do construction employees identify the proper hand tool to use in a given situation? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How do contractors use rulers and other measuring tools to ensure accuracy in the building process? 2. How do contractors use levels and other layout tools to ensure accuracy in the building process? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How are handsaws used safely at the construction work site? 2. How are various types of cutting and shaping tools used within the construction field to create product?
Vocabulary: Adjustable wrench, Ball –peen hammer, Bell – faced hammer, Bevel, Box – end wrench, Cat’s paw, Chisel, Chisel bar, Claw hammer, Combination wrench, Dowel, Fastener, Flats, Foot – pounds, Hex –key wrench, Inch – pounds, Joint, Level, Nail puller, Newton – meter, Open – ended wrench, Peening, Pipe wrench, Pliers, Points, Punch, Ripping bar, Round off, Square, Striking wrench, Strip, Tampered, Torque, Weld,	Vocabulary: Carpenter’s square, Combination square, Planed, Plumb, Rafter angle square, Try square	Vocabulary: Kerf, Miter joint, Tang, Tenon

Concept: Power Tools	Concept:	Concept:
Concept description: Identify and explain how to use a variety of power tools including: drills, saws, and grinders.	Concept description:	Concept description:
List standards here		
Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How are power tools used in the construction field? 2. How do construction employees identify the proper power tool to use in a given situation? 3. How do construction employees safely use power tools? 	Lesson Essential Question(s):	Lesson Essential Question(s):
Vocabulary: Alternating current, Auger bit, Carbide, Chunk, Chunk key, Countersink, Direct current Forstner bit, Ground fault circuit interrupter, Ground fault protection, Masonry bit, Revolutions per minute, Shank, Trigger lock, Arbor, Kerf, Reciprocating, Abrasive, Grit, Ring test,	Vocabulary:	Vocabulary:

Course:

Level:

Date:

Topic: Unit 4 Introduction Construction Drawings and Basic Rigging

Key Learning:

- Planning for the job and preparing the worksite

Unit Essential Question(s):

- **How are construction drawings used by construction employees?**
- **How does rigging hardware assist in the construction field?**

Concept: Construction Drawings	Concept: Basic Rigging	Concept:
Concept description: Identify and describe various types of construction drawings, including their fundamental components and features.	Concept description: Identify and describe various types of rigging slings, hardware, and equipment.	Concept description:
List standards here		
Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How are various types of drawings used in the construction field? 2. How does one use the five basic construction drawing components? 3. How does one explain the significance of various drawing elements, such as lines of construction, symbols, and grid lines? 4. How does one explain the use of dimensions and various drawing scales? 5. How does one use engineer's and architect's scales? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How are various types of slings identified and inspected? 2. How does one inspect different types of common rigging hardware? 3. How does one use different types of hoists? 4. How does one identify basic rigging hitches and the related Emergency Stop hand signal? 	Lesson Essential Question(s):
Vocabulary: Architect, Architect's scale, Architectural plans, Beam, Blueprints, Civil plans, Computer – aided drafting, Contour lines, Detail drawings, Dimension line, Electrical plans, Elevation, Elevation drawing, Engineer, Engineer's scale, Fire protection plan, Floor plan, Foundation plan, Hidden line, HVAC, Leader, Legend, Mechanical plans, Metric scale, Not to Scale, Piping and instrumental drawings, Plumbing plans, Roof plan, Scale, Schematic, Section drawing, Specifications, Structural plans, Symbol, Title block	Vocabulary: Block and tackle, Bridle, Bull ring, Competent person, core, Hitch, Hoist, Lifting clamp, Load, Load control, Load stress, Master link, One – rope lay, Plane, Qualified person, Rated capacity, Rejection criteria, Rigging hook, Shackle, Sheave, Sling, Sling legs, Sling reach, Splice, Strand, Tag line, Tattle – tail, Threaded shank, Unstranding, Warning yarn, Wire rope	Vocabulary:

Course:

Level:

Date:

Topic: Unit 5 Communication Skills and Employability Skills

Key Learning:

- The importance of soft skills

Unit Essential Question(s):

- **How do individuals communicate effectively and retain employment in the construction field?**

Concept: Communication Skills	Concept: Opportunities in the Construction Industry	Concept: Critical Thinking and Problem Solving
Concept description: Describe the communication, listening, and speaking process and their relationship to job performance.	Concept description: Describe the opportunities in the construction businesses and how to enter the construction force.	Concept description: Explain the importance of critical thinking and problem solving and ways good social skills are applied to the construction trade.
List standards here		
Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How does one communicate effectively using appropriate speaking and listening skills? 2. How do good reading and writing skills impact one's effectiveness in the construction field? 3. How do good listening and speaking skills assist with conflict resolution? 4. How does one provide effective construction criticism? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. What opportunities for employment are available to individuals in the construction field? 2. What is the process for gaining employment in the construction field? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How does critical thinking assist in removing barriers to problem solving? 2. How does one plan and schedule to ensure timely completion of assigned projects? 3. How does one work in a team environment and be an effective team leader? 4. How does an individual confront and handle social issues in the work place?
Vocabulary: Active listening, Appendix, Body language, Bullets, Change order, Electronic signature, Font, Glossary, Graph, Index, Italics, Jargon, Memo, Nonverbal communication, Paraphrase, Permit, Punch list, Table, Table of contents	Vocabulary: Mission statement, Reference	Vocabulary: Absenteeism, Tardiness, Amphetamine, Barbiturate, Bullying, Cannabinoids, Compromise, Confidentiality, Constructive criticism, Hallucinogen, Harassment, Initiative, Leadership, Methamphetamine, Opiates, Professionalism, Self – Presentation, Sexual harassment, Synthetic drugs, Tactful, Work ethic, Zero tolerance

Course:

Level:

Date:

Topic: Unit 6 Material Handling

Key Learning:

- Proper handling of materials on the worksite

Unit Essential Question(s):

- **How do individuals safely move materials around a construction worksite?**

Concept: Material Handling	Concept: Material Handling Equipment	Concept:
Concept description: Identify the basic concepts of material handling and common safety precautions.	Concept description: Identify various types of material handling equipment and describe how they are used.	Concept description:
List standards here		
Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How does one use material handling and manual lifting in the construction field? 2. How does one ensure safety when completing material handling? 3. How are tie knots commonly used in material handling? 	Lesson Essential Question(s): <ol style="list-style-type: none"> 1. How is non-motorized material handling equipment used within the construction field? 2. How is motorized material handling equipment used within the construction field? 	Lesson Essential Question(s):
Vocabulary: Bowline, Capsize, Clove hitch, Half hitch, Square knot, Standing end, Standing part, Working end	Vocabulary: Concrete mule, Cylinder cart, Drum cart, Drum dolly, Freight elevator, Hand truck, Industrial forklift, Material cart, Pallet jack, Pipe mule, Pipe transport, Powered wheelbarrow, Roller skids, Rough terrain forklift, Spotter, Wheelbarrow, Work zone	Vocabulary: