

K to 12 TECHNOLOGY AND LIVELIHOOD EDUCATION

**INDUSTRIAL ARTS – TILE SETTING
(Exploratory)**

Content Standard	Performance Standard	Learning Competencies	Project / Activities	Assessment	Duration
LESSON 1: PREPARING CONSTRUCTION MATERIALS AND TOOLS					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • Identifying and classifying construction materials • Identifying and describing tools per job requirements 	<ol style="list-style-type: none"> 1. Tools and materials are identified per job requirements 2. Tools are classified according to their functions per job requirements. 3. Materials are classified according to their uses for specific construction projects. 4. Tools and materials are selected per job requirement. 	<ul style="list-style-type: none"> • Identify materials and tools appropriate to a specific job 	<ol style="list-style-type: none"> 1. Listing down the tools needed in tile setting. 2. Using tools properly 3. Making a list of materials per company standards 	<ul style="list-style-type: none"> • Direct observation • Written test/questioning 	3 hours
<ul style="list-style-type: none"> • Accomplishing different forms like job order slips, tools and materials requisition slips, and borrower's slips • Following accurate requisition procedures 	<ol style="list-style-type: none"> 1. Needed materials and tools are listed per job requirement. 2. Materials and tools are requested according to the prepared list. 3. Requests are done per company's standard operating procedures (SOP). 4. Materials and tools are provided and unavailable ones substituted without sacrificing cost and quality of work. 	<ul style="list-style-type: none"> • Request appropriate materials and tools 	<ol style="list-style-type: none"> 1. Making a list of different sizes of tiles. 	<ul style="list-style-type: none"> • Oral questioning • Direct observation • Written test 	2 hours

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<ul style="list-style-type: none"> • Following procedures in receiving tools and materials • Observing proper handling of tools and materials 	<ol style="list-style-type: none"> 1. Receiving and inspected materials and tools per quantity and specifications based on requisition. 2. Tools and materials are checked for damages and manufacturing defects. 3. Materials and tools received are handled with appropriate safety devices. 4. Materials and tools are stored in an appropriate location nearest the workplace. 	<p>LO3. Receive and inspect materials</p>	<ol style="list-style-type: none"> 1. Enumeration of some common defects and/or damages of tools and materials used for tile setting. 	<ul style="list-style-type: none"> • Oral questioning • Direct observation • Written test 	<p>3 hours</p>

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LESSON 2: PERFORMING MENSURATIONS AND CALCULATIONS					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> Making calculations and computations using the four fundamental operations, ration and proportion, algebra and trigonometry 	<ol style="list-style-type: none"> Calculation needed to complete work tasks are performed using the four basic processes of addition (+), subtraction(-), multiplication (x) and division (/) including but not limited to: Trigonometric functions and Algebraic computations. Calculations involving fractions, percentages, and mixed numbers are used to complete workplace tasks. Numerical computations are self-checked and corrected for accuracy. Accurate measurements are obtained according to job requirements. Systems of measurements are identified and converted according to job requirements Work pieces are measured according to job requirements. 	<p>LO1.Carry out measurements and calculations</p>	<ol style="list-style-type: none"> Making simple computations using the four fundamental operations 	<ul style="list-style-type: none"> Oral questioning Direct observation Written test 	<p>4 hours</p>

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<ul style="list-style-type: none"> • Visualizing objects and shapes specifically geometric shapes. • Interpreting formulas for volume, areas, and perimeters of plane and geometric figures. • Measuring Instruments/Measuring Tools • Proper handling of measuring instruments 	<ol style="list-style-type: none"> 1. Objects or components to be measured are identified, classified, and interpreted according to the appropriate regular geometric shapes. 2. Measuring tools are selected/identified per object to be measured or according to job requirements 3. Correct specifications are obtained from relevant sources. 4. Measuring instruments are selected according to job requirements. 5. Alternative measuring tools are used without sacrificing cost and quality of work. 6. Measurements are obtained according to job requirements. 	<p>LO2. Select Measuring Instrument</p>	<ol style="list-style-type: none"> 2. Measuring the lengths, width and thickness of some pieces of wood which will be presented in the class. 3. Computing the area of some geometric figures 	<ul style="list-style-type: none"> • Actual demonstration • Direct observation • Written test/questioning 	<p>4 hours</p>

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LESSON 3: INTERPRETING TECHNICAL DRAWINGS AND PLANS					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • Drawing symbols and signs according to job specifications • Drawing lines • Trade mathematics 	<ol style="list-style-type: none"> 1. Signs, symbols, and data are identified according to job specifications. 2. Signs, symbols and data are determined according to classification or as appropriateness in drawing. 	<p>LO1 Read/Interpret blueprints and plans</p>	<ol style="list-style-type: none"> 1. Enumerate the lines necessary in making working drawing. 	<ol style="list-style-type: none"> 2. Demonstration 3. Direct observation 4. Written test/questioning 	<p>3 hours</p>
<ul style="list-style-type: none"> • Basic technical drawing • Technical plans and schematic diagram • Symbols and abbreviations 	<ol style="list-style-type: none"> 1. Necessary tools, materials and equipment are identified according to the plan. 2. Components, assemblies or objects are recognized per job requirement. 3. Dimensions and specifications are identified according to job requirements. 4. Freehand sketch is produced in accordance with job requirements. 	<p>LO2. Perform freehand sketching</p>	<ol style="list-style-type: none"> 1. Make a sketch of an area of four feet long and four feet wide to be tiled with 4 by 4 tiles. 	<ul style="list-style-type: none"> • Practical application/ performance test • Written test/questioning 	<p>3 hours</p>

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LESSON 4: MAINTAINING TOOLS AND EQUIPMENT					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> Types of Tools and Equipment Classification of functional and non-functional tools Uses of Personal Protective Equipment (PPE). 	<ol style="list-style-type: none"> Tools and equipment are identified according to classification/specification and job requirements. Functional and non-functional tools and equipment are segregated and labeled according to classification. Safety of tools and equipment are observed in accordance with manufacturer's instructions. Conditions of PPE are checked in accordance with manufacturer's instructions. 	<p>LO1. Check condition of tools and equipment</p>	<ol style="list-style-type: none"> Enumerate the conditions of tools and equipment that needs maintenance or repair. 	<ul style="list-style-type: none"> Oral questioning Direct observation Written test 	<p>6 hours</p>
<ul style="list-style-type: none"> Types and uses of lubricants Types and uses of cleaning materials/solvent Types and uses of measuring instruments and equipment. Preventive maintenance techniques and procedures. 	<ol style="list-style-type: none"> Lubricants are identified according to types of equipment. Tools and equipment are lubricated according to preventive maintenance schedule or manufacturer's specifications. Measuring instruments are checked and calibrated in accordance with 	<p>LO2. Perform basic preventive maintenance.</p>	<ol style="list-style-type: none"> Explain the importance of lubricants in tool and equipment maintenance. 	<ul style="list-style-type: none"> Oral questioning Direct observation Written test 	<p>3 hours</p>

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<ul style="list-style-type: none"> • OSHC workplace regulations 	<p>manufacturer's instructions.</p> <ol style="list-style-type: none"> 4. Tools are cleaned and lubricated according to standard procedures. 5. Defective equipment and tools are inspected and replaced according to manufacturer's specification. 6. Work place is cleaned and kept in safe state in line with OSHC regulations. 				
<ul style="list-style-type: none"> • Inventory of tools and equipment • Tools and equipment handling • Tool safe-keeping/storage 	<ol style="list-style-type: none"> 1. Inventory of tools, instruments, and equipment are conducted and recorded per company practices. 2. Tools are inspected and stored after use. 3. Tools and equipment are stored safely in accordance with manufacturer's specifications or company procedures. 	<p>LO3. Store tools and equipment.</p>	<ol style="list-style-type: none"> 1. Explaining the disadvantages of improper storing of tools and equipment. 	<ul style="list-style-type: none"> • Practical examination • Direct observation • Written test/questioning 	<p>2 hours</p>

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LESSON 5: PRACTICING OCCUPATIONAL HEALTH AND SAFETY PROCEDURES					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • TLV table • Philippine OHS standards • Effects of hazards in the workplace • Ergonomics • ECC regulations 	<ol style="list-style-type: none"> 1. Terms of maximum tolerable limits are identified based on threshold limit value (TLV). 2. Effects of hazards are determined. 3. OHS issues and concerns are identified in accordance with workplace requirements. 4. Requirements and relevant workplace OHS legislation. 	<p>LO1. Evaluate hazards and risks</p>	<ol style="list-style-type: none"> 1. Making a list of known hazards and risks in the workplace. 	<ul style="list-style-type: none"> • Interview • Written examination • Simulation 	<p>2 hours</p>
<ul style="list-style-type: none"> • Safety regulations • Clean air act • Electrical and fire safety code • Waste management • Disaster preparedness and management • Contingency measures and procedures 	<ol style="list-style-type: none"> 1. OHS procedures for controlling hazards and risks are strictly followed. 2. Procedures in dealing with workplace accidents, fire and emergencies are followed in accordance with the organization's OHS policies. 3. Personal protective equipment (PPE) is correctly used in accordance with organization's OHS procedures and practices. 4. Procedures in providing appropriate assistance in the event of workplace 	<p>LO2. Control hazards and risks.</p>	<ol style="list-style-type: none"> 1. Demonstrating or illustrating the proper use of PPEs. 	<ul style="list-style-type: none"> • Written examination • Interview 	<p>2 hours</p>

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	emergencies are identified in line with the established organizational protocol.				
<ul style="list-style-type: none"> • Operational health and safety procedure, practices and regulations • Emergency-related drills and training 	<ul style="list-style-type: none"> • Procedures in emergency related drill are strictly followed in line with the established organizational guidelines and procedures. • OHS personal records are filled up in accordance with workplace requirements. • PPE are maintained in line with organization guidelines and procedures. 	LO3. Maintain occupational health and safety awareness	1. Commenting about the emergency drills undertaken in the schools such as fire drill and earthquake drill	<ul style="list-style-type: none"> • Demonstration • Interview • Written examination 	4 hours
					40 hrs.