



TECHNOLOGY AND LIVELIHOOD EDUCATION

IA - RESIDENTIAL MASONRY AND TILE SETTING

Grade 9 or 10

**Three-Term Budget Of Work (BOW)
for Learning Competencies**

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IA
Grade 9 and Grade 10

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For Learning Competencies

Please note that each sector under TLE: IA is studied for one term. This is applicable under Grades 9 and 10.

Term		
Sector	Residential Masonry and Tile Setting	
Performance Standard	The learners perform concrete preparations following the safety precautions. The learners perform tile installation following the safety precautions. The learners compute masonry and tile setting service cost.	
Content Standard	• Demonstrate an understanding of the concepts and principles in masonry works. • Demonstrate an understanding of the concepts and principles in tile setting works. • Demonstrate an understanding of masonry/tile installation services computation.	
Week	Learning Competency	Suggested Activities
1	• Identify masonry works. • Differentiate materials, consumables, tools, equipment, and special tools in masonry works.	• Individual Masonry Elements Identification ○ Learners individually examine images, samples, or small-scale models of masonry works such as brick walls, concrete blocks, stone masonry, and plaster finishes, identifying the different types and their

		characteristics. - Individually observe and identify various types of masonry works and their distinguishing features. Individual Masonry Terminology and Classification Exercise - Learners review masonry terms, classify different masonry works by material or method (e.g., brick, stone, concrete block), and create a labeled diagram or table showing the types and their uses. - Individually classify masonry works by type and create a labeled diagram or table explaining their uses and characteristics. Individual Masonry Materials and Consumables Identification - Learners individually examine various masonry materials (e.g., bricks, stones, cement, sand), consumables (e.g., mortar, adhesives), and differentiate them by type, purpose, and characteristics used in masonry works. - Individually identify and differentiate masonry materials and consumables
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		based on type, purpose, and characteristics. • Individual Tools and Equipment Differentiation ○ Learners study various masonry tools, equipment, and special tools (e.g., trowels, levels, masonry hammers, mixers) and differentiate them based on function, usage, and safety considerations. ○ Individually examine and differentiate masonry tools, equipment, and special tools according to their functions and proper use.
2	• Illustrate a single-storey residential plan.	• Individual Floor Plan Sketching ○ Learners individually draw a simple single-story residential floor plan, including basic elements such as rooms, doors, windows, and furniture layout, while considering functional space and flow. ○ Individually sketch a single-story residential floor plan showing rooms, doors, windows, and furniture layout. • Individual Scaled Drawing of a Residential Plan

		○ Learners create a scaled version of a single-story residential plan on graph paper or using drawing software, including dimensions, labels, and key features, to represent the plan accurately. ○ Individually draw a scaled single-story residential plan with labeled dimensions and key features.
3	● Apply site preparation following the safety precautions.	● Individual Site Assessment and Planning ○ Learners individually examine a mock or actual construction site area, identify potential hazards, and plan how to prepare the site properly for construction, including clearing, leveling, and marking, while observing all safety precautions. ○ Individually assess and plan site preparation by identifying hazards and outlining safe clearing, leveling, and marking procedures. ● Individual Site Layout and Safety Implementation ○ Learners independently perform site layout preparation, such as marking boundaries, leveling ground, and

		setting up temporary safety measures, demonstrating proper techniques and following safety rules. Individually prepare the site layout safely by marking, leveling, and implementing safety precautions.
4	- Identify types of steel bar. - Apply procedures in concrete reinforcement following the safety precautions.	Individual Steel Bar Observation and Identification - Learners individually examine different steel bars, such as deformed bars, mild steel bars, high-tensile bars, and flat bars, identifying their physical characteristics, size markings, and common uses in construction. - Individually classify steel bars by type, size, application, and key characteristics in a chart or table. Individual Steel Bar Classification Exercise - Learners create a table or chart classifying the steel bars by type, size, application, and distinguishing features, reinforcing understanding of the differences among the types. - Individually classify steel bars by type, size, application, and key

		characteristics in a chart or table. • Individual Reinforcement Bar Bending and Cutting ○ Learners individually practice cutting and bending steel reinforcement bars according to given specifications, ensuring proper measurements, correct techniques, and adherence to safety precautions. ○ Individually cut and bend steel reinforcement bars to specifications while following safety procedures. • Individual Concrete Reinforcement Layout ○ Learners individually place and tie reinforcement bars on a mock footing or slab layout, ensuring proper spacing, alignment, and secure fastening while observing all safety rules. ○ Individually lay out and tie reinforcement bars according to the design plan while observing all safety precautions.
5	• Apply procedures in formworks assembly and disassembly following the safety precautions.	• Individual Formwork Assembly Practice ○ Learners individually assemble a

		small-scale formwork structure for a slab or column, ensuring proper alignment, secure connections, and adherence to all safety precautions. - Individually assemble the assigned formwork structure safely by following proper procedures and using correct tools. • Individual Formwork Disassembly Exercise - Learners individually disassemble a previously assembled formwork, carefully removing components without damaging the materials or compromising safety, while following correct procedures. - Individually disassemble the formwork safely, following proper procedures to avoid accidents and material damage.
6	Apply procedures in concrete preparation following safety precautions.	• Individual Concrete Mixing Practice Learners individually measure and mix cement, sand, gravel, and water in proper proportions to prepare concrete, ensuring correct techniques, uniform consistency, and adherence to safety precautions.

		- Individually measure and mix concrete ingredients safely following the correct proportions and procedures. Individual Concrete Pouring and Setting Practice - Learners individually pour the prepared concrete into a small mold or formwork, level it, and ensure proper setting while using personal protective equipment and observing all safety precautions. - Individually pour and level the prepared concrete safely, ensuring proper technique and adherence to safety rules.
7	Discuss the classification of tiles.	Individual Tile Observation and Identification - Learners individually examine different types of tiles (e.g., ceramic, porcelain, quarry, mosaic) and identify their characteristics, uses, textures, and finishes. - Individually observe and identify various types of tiles, noting their characteristics, uses, and finishes. Individual Tile Classification Chart

		○ Learners create a chart or table classifying tiles by material, texture, finish, and common applications, demonstrating understanding of the differences and purposes of each type. ○ Individually classify tiles in a chart or table according to type, texture, finish, and typical uses.
8	● Demonstrate the use of tools, equipment, and materials for residential tile setting.	● Individual Tile Setting Tools Practice ○ Learners individually practice using hand tools for tile setting, such as trowels, tile cutters, spacers, and levels, to understand proper handling, function, and safety precautions. ○ Individually practice using tile setting tools correctly and safely to prepare for actual tile installation. ● Individual Materials Handling and Application ○ Learners individually handle tile setting materials such as adhesive, grout, and spacers, and apply them on a small sample surface to demonstrate proper usage, consistency, and safety precautions. ○ Individually apply tile adhesives and

		grout safely, demonstrating correct techniques and material handling.
9	Apply procedures in tile installation following the safety precautions.	Individual Wall Tile Installation Practice - Learners independently install wall tiles on a small mock-up panel, following proper surface preparation, adhesive application, alignment, and spacing while using tools and materials safely. - Individually install wall tiles on a sample panel following correct procedures and observing all safety precautions. Individual Floor Tile Installation Exercise - Learners independently lay floor tiles on a small area or board, ensuring proper leveling, spacing, adhesive application, and finishing, while following safety rules and using personal protective equipment. - Individually lay floor tiles on a sample area safely, following proper installation procedures and safety precautions.
10	Compute masonry/tile setting service cost.	Individual Cost Computation for

		Masonry Work ○ Learners are given a sample masonry repair or construction scenario (e.g., building a small wall or repairing a brick surface) and calculate the total cost, including materials, labor, and other related expenses. ○ Individually compute the total cost of a masonry project by calculating materials, labor, and additional expenses. • Individual Cost Computation for Tile Setting ○ Learners are provided with a tile installation scenario (e.g., tiling a small floor or wall area) and compute the total service cost, including tiles, adhesives, labor, and consumables. ○ Individually calculate the total cost of a tile setting project by adding material, labor, and consumable expenses.
Suggested Performance Tasks		• Individual Safe Concrete Mixing Task ○ The learner individually prepares a small concrete mixture using correct proportions while properly applying safety precautions and handling tools and materials responsibly. ○ Prepare a small batch of concrete by following correct mixing procedures and safety precautions from start to finish. • Group Concrete Preparation and Safety Practice

	○ In groups, learners collaboratively prepare concrete for a simple project while demonstrating proper teamwork, correct procedures, and strict observance of safety precautions. ○ Work as a group to mix and apply concrete for a simple output while consistently observing all safety rules. ● Individual Safe Tile Installation Task ○ The learner independently installs tiles on a small practice surface by following correct tile layout, adhesive application, and safety precautions, including proper use of tools and personal protective equipment (PPE). ○ Install tiles on a small surface by correctly applying procedures and observing all safety precautions throughout the task. ● Group Tile Installation and Safety Demonstration ○ In groups, learners work together to install tiles on a designated area, demonstrating teamwork, correct tile installation procedures, and consistent observance of safety precautions. ○ Collaboratively install tiles on an assigned area while strictly following proper installation steps and safety practices. ● Individual Masonry and Tile Cost Computation ○ The learner independently computes the total service cost for a given masonry or tile-setting job by determining material quantities, labor cost, and total project expense using provided data. ○ Compute the total cost of a masonry or tile-setting service using the given measurements, material prices, and labor rates. ● Group Construction Cost Estimation Project ○ In groups, learners analyze a sample masonry or tile-setting project and collaboratively prepare a detailed cost estimate that includes materials, labor, and overall service cost.
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	○ Work as a group to prepare and present a complete cost estimate for an assigned masonry or tile-setting project.
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