LESSON PLAN TEMPLATE

Lesson Title	Real-World Applications of Temperature Conversions and Function Classifications
Learning Area/s	General Mathematics
Name of Teacher/s	Richard R. Raqueno
Grade Level and Section	Grade 11-Mathematics
No. of Sessions	4 Sessions (1 Week)
References (books, websites, toolkits, etc.)	Lesson Exemplar (LE), Learning Activity Sheets (LAS)
Declaration of AI use Cite how AI was used in the formulation of the lesson plan.	This lesson plan was co-created using Gemini AI to assist with unpacking competencies into a 4-session learning design, structuring activities, and assessment formulation.

Intentions.
Meaningful learning experiences are anchored in how we frame them. Start by deciding what you want learners to master by the end of the lesson – keep it clear and simple.
Remember: Understanding your learners' evolving context and designing around it ensure that your lessons connect with and are relevant to them.

Learning Competency and Curriculum Standards:	**Learning Competency:** • Apply temperature conversions to real-world scenarios such as recipe adjustments, weather reports, scientific experiments, storage conditions, and energy efficiency. • Classify functions based on their graphs and/or equations to determine if they are linear, absolute value, quadratic, square root, or cube root. **Content Standards:** The learners should have knowledge and understanding of: • business and finance through problems involving earning money, buying, and selling • patterns, arithmetic and geometric sequences and series

	• financial application of sequence and series • measurement and conversion • functions and its graphs **Performance Standards:** By the end of the term, the learners are able to: • Prepare accurate payrolls and digital payslips with correct gross pay, deductions, and net income. • Create and present a digital financial report with graphs, equations, and justified real-life decisions. • Design and present a practical measurement or conversion solution with a concrete or visual model.			
	Session 1	**Session 2**	**Session 3**	**Session 4**
Learning Objectives:	• Identify the conversion formulas for Celsius, Fahrenheit, and Kelvin scales. • Apply temperature conversion formulas to solve real-world problems related to weather reports and cooking recipes.	• Differentiate between Linear and Absolute Value functions based on their algebraic equations. • Classify graphs as Linear or Absolute Value based on their visual characteristics (straight lines vs. V-shapes).	• Classify functions as Quadratic, Square Root, or Cube Root using their standard equations. • Identify the unique curvature and starting points of Quadratic, Square Root, and Cube Root graphs.	• Integrate temperature conversion knowledge by modeling it as a Linear Function. • Synthesize all learned function types by classifying diverse equations and graphs in a final mastery activity.
Learner Context:	To address struggles with reading comprehension and abstract concepts, instructions will be broken down into short, visual steps. Mathematical formulas will be color-coded to assist with variable identification.	Since learners struggle with abstract concepts, the lesson focuses on 'shape recognition' before moving to algebraic properties. High-contrast graphs will be used on the projector.	To support learners with significant scaffolding needs, the 'curviness' of these functions will be compared to the 'straightness' of the functions from the previous session.	The final session bridges the concrete (temperature) with the abstract (linear functions) to solidify understanding. Reading tasks are minimized in favor of symbolic and graphical analysis.
Learning Experience. A learning experience is like a thoughtfully designed journey. Each activity and interaction builds towards meaningful understanding and growth. Identify activities and interactions to help learners gain knowledge, skills, or understanding in a purposeful way.				
Pre-Lesson:	• **Quick Recall:** A short brainstorm on where students encounter temperature in daily life (e.g., body heat, ovens, weather apps).	• **Pattern Recognition:** Students trace shapes in the air—straight lines and V-shapes—to	• **Active Retrieval:** A 2-minute review quiz on Linear and Absolute Value functions from the previous session.	• **Warm-up:** A 'Mix-and-Match' challenge featuring all 5 function types and a temperature conversion formula.

	• **Visual Hook:** Display images of a snowy day (Fahrenheit) and a tropical beach (Celsius) to prompt discussion on scale differences.	physically prepare for the function types.		
Flow:	• **Modeling:** Step-by-step demonstration of converting 100°C to Fahrenheit using the formula F = (9/5)C + 32. • **Scaffolding:** Use of a conversion 'cheat sheet' provided to each student. • **Active Retrieval:** 'Think-Pair-Share' where students convert the current local temperature into Kelvin. • **Social Learning:** Group activity where students adjust a recipe's oven temperature from Fahrenheit to Celsius.	• **Direct Instruction:** Identifying y = mx + b (Linear) versus y = a|x-h| + k (Absolute Value). • **Guided Practice:** Sorting activity where students match equation cards to graph cards on the board. • **Scaffolding:** Providing a 'clue card' that links the symbol '|x|' to the 'V' shape. • **Social Learning:** Peer-tutoring where students explain to a partner why a graph is linear or not.	• **Visual Comparison:** Side-by-side display of x^2, $\sqrt{x}$, and $\sqrt[3]{x}$ graphs to highlight differences (U-shape vs. 'hook' vs. 'S-curve'). • **Scaffolding:** Use of a 'Function Family Tree' graphic organizer. • **Guided Discovery:** Students use a laptop/computer to observe how changing values in a quadratic equation shifts the graph. • **Social Learning:** Small groups categorize a set of 10 equations into the three new categories.	• **Concept Connection:** Explain that F = 1.8C + 32 is a Linear Function (y=mx+b). • **Interactive Review:** 'Gallery Walk' where groups visit different stations to identify the function type of a displayed graph or equation. • **Checks for Understanding:** Randomized cold-calling using names on sticks to ensure all students participate in classification. • **Mastery Activity:** A 'Decision Matrix' where students must justify why a specific function type fits a real-life scenario (e.g., energy efficiency curves).
Learning Resources:	• PowerPoint Presentation • Chalkboard/Whiteboard • Printed Conversion Formula Guide	• Smart TV/Projector • Graphing Activity Cards • Whiteboard markers	• Laptop/Computer (Desmos or similar graphing tool) • Graphic Organizer Handouts • Projector	• Gallery Walk Posters • Smart TV for final review game • Chalkboard

Opportunities for integration:	• **Science:** Integrating Kelvin scales used in laboratory settings. • **HE (Cookery):** Recipe adjustments for international kitchen standards.	• **Art:** Identifying linear and absolute value patterns in modern architectural designs.	• **Physics:** Mentioning how projectile motion follows a quadratic (U-shape) path.	• **Financial Literacy:** Comparing linear growth in savings to quadratic curves in complex financial models.
Assessment. Assessments reveal what learners have gained and what they still need help with. These are helpful in providing you with information to guide your future instruction throughout the entire session.				
Formative Assessment:	• **Check for Understanding:** A 3-item worksheet requiring conversion of temperatures found in a mock weather report. • **Exit Ticket:** Students must write down one reason why Kelvin is used in science versus Celsius in daily life.	• **Flashcard Quiz:** Teacher shows a graph, students hold up a 'L' for Linear or 'AV' for Absolute Value. • **Correction Clinic:** Students identify the error in a purposely mislabeled graph.	• **Sorting Game:** Students are given equations and must place them in the correct 'Function Bin' at the front of the room. • **Check for Understanding:** Pointing out specific features (like the domain restriction of a square root) on a graph.	• **Comprehensive Quiz:** A mix of 10 questions covering temperature conversion calculations and function classification. • **Self-Assessment:** Students rate their confidence in each of the 5 function types using a scale of 1-5.
Ways Forward. Meaningful learning can also happen beyond the classroom – for both the learners and the teacher. Pause and reflect on what happened today.				
Extended learning opportunities:	• Find a weather report from a country using a different scale and convert the high/low temperatures for the next day.	• Draw one real-world object that resembles a linear function and one that resembles an absolute value function.	• Search online for a picture of a 'Parabola' in nature or architecture (e.g., a fountain or a bridge).	• Prepare a small digital payslip mockup as a precursor to the performance standard, identifying any linear functions within the tax deductions.
Reflections:	• How many students were able to independently apply the formula without the cheat sheet?	• Did the visual 'V-shape' mnemonic help students	• Were students able to distinguish between Square Root and Cube Root graphs	• Did the integration of temperature conversion help students understand

	• Which specific step in the conversion process caused the most confusion?	distinguish Absolute Value functions effectively?	despite their similar 'curvy' appearance?	the utility of Linear Functions? • What topics need further reinforcement before the performance task?