**LESSON PLAN TEMPLATE**

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| **Lesson Title** | Exploring Sets and Venn Diagrams through Filipino Daily Life |
| **Learning Area/s** | Mathematics |
| **Name of Teacher/s** | DepED Tambayan PH (Visit www.depedtambayanph.net for more downloads.) |
| **Grade Level and Section** | Grade 7 |
| **No. of Sessions** | 4 Sessions |
| **References** | None specified |
| **Declaration of AI use** | 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.**<br><br>**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.** | |
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| **Learning Competency and Curriculum Standards:** | **Learning Competency:**<br>• Describe sets and their subsets, the union of sets, and the intersection of sets. • Illustrate sets and their subsets, the union of sets, and the intersection of sets, through the use of Venn diagrams.<br><br>**Content Standards:**<br>The learners should have knowledge and understanding of: • conversion of units of measure • volume of square and rectangular pyramids, and cylinders • sets and subsets, and the union and intersection of sets using Venn diagrams • subset of real numbers • data collection and sampling techniques, and the presentation of data in appropriate tables and graphs • interpretation of statistical graphs • the set of integers, and comparing and ordering integers<br><br>**Performance Standards:**<br>By the end of the term, the learners are able to: • convert units of measure from different systems of measure. • find the volume of square and rectangular pyramids, and the volume of cylinders. • describe sets and their subsets, and the union and intersection of sets. • illustrates sets and subsets, and union and intersection of sets, using Venn diagrams. • collect data, and organize data in a frequency distribution table. • represent and interpret data in different types of graphs. • compare and order |

| | integers, including through the use of the number line. | | | |
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| | **Session 1** | **Session 2** | **Session 3** | **Session 4** |
| **Learning Objectives:** | • Describe sets, elements, and subsets using mathematical notation.<br>• Identify well-defined sets and subsets from local community contexts.<br>• Demonstrate the relationship between a set and its subsets. | • Describe the union of sets in the context of combining groups.<br>• Illustrate the union of two sets using Venn diagrams.<br>• Solve simple problems involving the union of sets using relatable scenarios. | • Describe the intersection of sets as shared elements.<br>• Illustrate the intersection of sets using Venn diagrams.<br>• Identify commonalities in sets related to Philippine culture and daily life. | • Distinguish between the union and intersection of sets in situational problems.<br>• Create complex Venn diagrams representing real-world survey data.<br>• Analyze relationships between sets to solve logical puzzles. |
| **Learner Context:** | Learners show high engagement with visual and hands-on activities, often excelling when math concepts are linked to tangible items like those found in a local 'sari-sari' store. While they are social and collaborative, some experience anxiety with abstract mathematical symbols. A few students struggle with English vocabulary, requiring scaffolding in their mother tongue to bridge understanding of technical terms like | The class responds positively to activities involving food and family. Most learners have a strong grasp of basic set definitions from the previous session but are still developing their spatial reasoning skills for drawing diagrams. Potential barriers include confusion between 'all elements' and 'repeated elements' when merging sets. | Learners are becoming more comfortable with the Venn diagram structure. They show a strength in identifying shared interests among peers. However, some learners tend to confuse the Union symbol (∪) with the Intersection symbol (∩). Barriers include difficulty in identifying the intersection when sets have no elements in common (null set). | Learners have mastered the basic drawing of diagrams but struggle with word problems that require extracting data. They are highly motivated by competitive games and rewards. There is a need for extra support for students with lower reading comprehension to ensure they interpret 'and' (intersection) vs 'or' (union) correctly. |

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| | 'elements' or 'subsets'. | | | |
| **Learning Experience.**<br><br>**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:** | ● Active Retrieval: A 2-minute 'Group Yourself' game where students cluster based on shared characteristics (e.g., wearing a watch, month of birth).<br>● Discussion on why they grouped together to introduce the concept of a 'set'. | ● Hook: Imagine two Filipino families (Set A and Set B) bringing food for a 'Salo-salo'. If Set A = {Adobo, Rice} and Set B = {Pansit, Rice}, what is the total menu? | ● Warm-up: 'Find Someone Who...' activity where students find a classmate who shares the same hobby, creating an 'intersection' of interests. | ● Active Retrieval: A quick 'Symbol Race' where students must draw the correct symbol/diagram for 'Union' or 'Intersection' as called out by the teacher. |
| **Flow:** | ● Introduction: Define a 'Set' using a basket of Filipino fruits (Set F = {mango, banana, calamansi}).<br>● Scaffolding: Explain 'elements' and the symbol '∈' using the fruit | ● Instruction: Define 'Union of Sets' ( ∪ ) as the 'joining' of elements without repetition.<br>● Scaffolding: Draw two overlapping circles. Show where the 'Rice' goes in the diagram to | ● Instruction: Define 'Intersection of Sets' (∩) using the overlapping hobby example.<br>● Modeling: Compare Set X (Ingredients for Sinigang) and Set Y (Ingredients | ● Direct Instruction: Breaking down word problems. Explain that 'OR' usually implies Union and 'AND' implies Intersection.<br>● Modeling: Solve a 'Barangay Survey' |

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| | examples.<br>● Direct Instruction: Define 'Subsets' (⊆) by looking at yellow fruits within Set F.<br>● Checks for Understanding: 'Flashcard Drills' where students identify if an object belongs to a given set of school supplies.<br>● Social Learning: In pairs, learners create their own set based on a 'Philippine Festival' and list three possible subsets. | prevent double-counting.<br>● Modeling: Step-by-step drawing of a Venn diagram for Set A ∪ Set B using the Salo-salo example.<br>● Active Retrieval: Students use individual mini-whiteboards to shade the 'Union' area on a blank Venn diagram.<br>● Group Work: Combine sets of 'Favorite P-Pop Groups' or 'Favorite Local Athletes' and represent them on a large Manila paper Venn diagram. | for Nilaga). Highlight the shared ingredients (e.g., onions, salt).<br>● Checks for Understanding: Provide two sets of local street foods; ask students to point to the intersection on a projected diagram.<br>● Guided Practice: Drawing diagrams for 'Disjoint Sets' (sets with no intersection) using 'Winter Clothes' vs 'Summer Clothes' in a Philippine context.<br>● Social Learning: Think-Pair-Share: Each pair creates two sets of their own and finds the intersection. | problem: 'In a group of 20 neighbors, 12 like coffee, 10 like tea, and 5 like both. How many like coffee OR tea?'<br>● Scaffolding: Use a 'Step-by-Step Problem Solving Organizer' to identify given sets and the required operation.<br>● Active Retrieval: Students work in small groups to solve 'The School Club Challenge' using data from their own class (e.g., Math Club vs. Science Club).<br>● Synthesis: A 'Gallery Walk' where groups display their Venn diagrams and other groups check for accuracy. |
| **Learning** | ● Laptop and Projector | ● Smart TV/Projector | ● Slide presentation | ● Laptop/Projector |

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| **Resources:** | • Slide presentation with images of local items<br>• Physical props (basket, school supplies) | • PowerPoint presentation<br>• Mini-whiteboards or laminated paper<br>• Manila paper and markers | • Visual cards of food ingredients<br>• Large circles (hula hoops) for a floor-based Venn diagram | • Worksheets with Philippine-themed word problems<br>• Graphic organizers |
| **Opportunities for integration:** | • Science: Classifying living and non-living things.<br>• Filipino: Proper nouns vs. common nouns as sets. | • Araling Panlipunan: Understanding the union of different provinces into a region. | • Health: Common symptoms of different local illnesses (e.g., Common Cold vs. Flu). | • Mathematics (Statistics): Introduction to data collection and tallying.<br>• English: Logical connectors 'and' and 'or'. |
| **Assessment.**<br><br>**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 My Symbol': A 5-item quick quiz where students write the correct symbol (∈, ∉, ⊆) for given pairs of objects and sets.<br>• Observation of peer discussions during the 'Festival' activity. | • 'Venn Master': Students are given two sets of numbers and must draw the Venn diagram and list the elements of the union.<br>• Exit Ticket: Write one sentence explaining why we don't write repeated | • 'Spot the Middle': Given two sets, students must correctly place elements into a Venn diagram, focusing on the intersection.<br>• Observation: Monitor pairs to see if they correctly identify | • Short Quiz: 3 word problems involving local scenarios (e.g., a survey of favorite Jeepney routes or local snacks) requiring a Venn diagram and set notation.<br>• Peer Feedback: During the |

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| | | elements twice in a union. | when an intersection is empty. | Gallery Walk, students use a checklist to evaluate their classmates' diagrams. |
| **Ways Forward.**<br><br>**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:** | • Home Task: List five items in your kitchen and group them into a set and at least two subsets (e.g., Set of Utensils, Subset of Spoons). | • Digital Option: Use a free online Venn diagram tool to practice combining sets of shapes.<br>• Reinforcement: Practice problems in the Learner's Material on page 12. | • Interview: Ask two family members about their favorite Filipino movies. List the intersection of their favorites. | • Challenge: Create a Venn diagram for 3 sets (e.g., Favorite Subjects: Math, Science, English) based on a mini-survey of 10 friends. |
| **Reflections:** | • Did the local examples help bridge the gap between concrete objects and abstract notation?<br>• Which students struggled with the subset symbol? | • Were students able to identify the overlapping part as belonging to both sets?<br>• How many learners required extra help with the concept of 'no repetition'? | • Did the hula hoop activity effectively demonstrate the physical 'overlap' of intersection?<br>• Are students still confusing the ∪ and ∩ symbols? | • Was the distinction between 'and' and 'or' clear to the majority?<br>• Which group activities generated the most tangible evidence of learning? |