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| **Learning Plan** | | | | | | | |
| **Subject** | *Mathematics* | **Week** | *6* | **Duration** | *4hrs.* | **Form** | *1* |
| **Strand** | *Number for Everyday life* | **Sub-Strand** | *Real Number and Numeration system* | | | | |
| **Content Standard** | *Demonstrate understanding of proportional reasoning involving fractions and its operations and use it to solve real-life problems including rounding off (decimal places and significant figures).* | | | | | | |
| **Learning Outcome(s)** | *Make connections between fractions and decimals and use them to solve daily problems. ).* | | | | | | |
| **Learning**  **Indicator(s)** | 1. *Review the concept of fractions and investigate the connections between fractions and decimal numbers.* 2. *Develop models to examine connections between and among fractions, percentages and decimal numbers and generalize.* | | | | | | |
| **Essential Question(s)** | * How can learners effectively convert fractions to decimals and percentages, and how are these representations utilized in estimation, computation, and real-world applications? * What mental mathematics strategies can be employed by learners to perform addition, subtraction, multiplication, and division of fractions, and how can these strategies be verbally communicated to make meaningful connections? * How do multi-purpose model charts facilitate the modeling of additive and multiplicative inverses of fractions, and how can these models enhance understanding and application of fraction concepts? * What are the strategies and procedures for converting fractions between different forms (e.g., from fraction to decimal or percentage), and how do these conversions enhance mathematical fluency and problem-solving skills? | | | | | | |
| **Pedagogical Strategies** | *Collaborative learning, Think-pair-share, Experiential learning, etc.* | | | | | | |
| **Teaching & Learning Resources** | *Models such as number lines; number tracks; algebraic tiles; Multibase Arithmetic Blocks, Graph board/sheets, right-angle triangle (wheel of theodorus), etc.* | | | | | | |
| **Key Notes on Differentiation** | | | | | | | |
| ***Learning Tasks:***   1. *Convert fractions to decimals and to percentages and use these representations in estimations, computations, and applications.* 2. *Play mental mathematics games: - learners use simple mental strategies to perform the following: addition, subtraction, multiplication and division of fractions using appropriate words and make connections.* 3. *Models additive and multiplicative inverses of fractions using multi-purpose model charts.* 4. *Model additive and multiplicative inverses of fractions using multi-purpose model charts.* 5. *Convert fractions from one form into other forms.*   ***Pedagogical Approach 1: Problem-Based Learning***  *Students use verbal discuss to establish decimals and percentages as fractions. Then establish the relationship between and among the decimals, percentages and fractions using models. They also investigate the additive and multiplicative inverses of fractions****.***  ***To differentiate:***   1. *Provide additional practice and support as needed to build fluency with these concepts.* 2. *Provide opportunities for them to practice making conversions and comparing fractions, decimals, and percentages.* 3. *Encourage them to explain their thinking and strategies for working with these concepts.* 4. *Challenge them to explore the relationship between fractions, decimals, and percentages in more depth, possibly including conversions between mixed numbers and improper fractions.* 5. *Encourage them to investigate more advanced concepts related to the additive and multiplicative inverses of fractions.*   ***Key Assessment:***   1. ***Assessment Level 1:*** *What is 3 out of 5 expressed as a percentage?* 2. ***Assessment Level 2:*** *If 18 out of 30 students prefer gablee, what percentage of the students prefer gablee?* 3. ***Assessment Level 3:*** *A recipe calls for cup of sugar. However, you want to make only half of the recipe. How much sugar should you use in the reduced recipe?* | | | | | | | |
| **Keywords** | *Fractions, percentages , decimal numbers* | | | | | | |

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| **Lesson 1: Connections between and among Fractions, Percentages and Decimals Numbers** | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | |
| ***Teacher Activity*** | ***Learner Activity*** |
| **Starter Activity (eg: 20 minutes)**  Fraction Feats   * Divide the participants into small groups and distribute fraction flashcards evenly among the groups. * Instructions: Briefly explain the activity to the participants i.e. goal. * During the activity, monitor the groups to provide assistance if needed, answer questions, and ensure that the activity is running smoothly. * Ensure effective time Management:   / | * Learners work together to identify and correctly name as many fractions as possible within the given time frame. * Learners discuss and collaborate on determining the values of the fractions displayed on the flashcards. Use your knowledge of fractions to identify numerators and denominators accurately. * learners share ideas and strategies for identifying fractions efficiently. Listen actively to the contributions of others and offer your insights as well.   Time Management: Stay focused and use your time wisely during the 20-minute challenge. Keep track of the remaining time and adjust your pace accordingly to maximize your group's performance.  Verification Round: During the verification round, actively participate in providing the correct values of the fractions displayed on your group's flashcards. Listen attentively to the explanations and clarifications provided by the teacher/facilitator. |
| ***Activity 1 (40 minutes)***   1. *In mixed gender and mixed ability groups guide learners to convert given fraction into decimal and percentage.*     *Hint: For example, conversion of ¾ to decimal is 0.75 and that of percentage is 75%.*   1. *Using talk for learning approach guide learners to discuss usefulness in different context, such as estimating item prices or calculating discounts*   ***Activity 2 (eg 40 minutes)***   1. *In mixed ability or convenience grouping, using think-ink-share, guide learners to add, subtract, multiple and divide the given fractions, decimals and percentages.*   *Hint:*   * + - 1. *1/3 + 2/4 and 4/5 -3/8.*       2. *2/5\*3/7 and 3/7 ÷ 1/3*  1. *In mixed ability and gender group guide learners to work Challenging problems.*   *Hint:*  *Encourage learners to verbalize their mental strategies like finding common denominators, simplifying fractions to reinforce connections between operations.*  *Be mindful of individual abilities in the groups, and encourage those with special ability, slow learners and higher achievers.* | ***Activity 1***   * + 1. *Learners convert each fraction into decimal and percentage.*     2. *learners apply these conversions in real-world situations such as sales, discounts [percentages] or measurement{decimal]*   ***Activity 2***  *Learners add, subtract, multiple and divide the given fractions, decimals and percentages.*  *Learners to work Challenging problems* |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | |
| ***Level 1:*** *What is 3 out of 5 expressed as a percentage?*  ***Level 2:*** *If 18 out of 30 students prefer gablee, what percentage of the students prefer gablee?*  ***Level 3:*** *A recipe calls for cup of sugar. However, you want to make only half of the recipe. How much sugar should you use in the reduced recipe?*  ***Level 4***: *Madam Fati has items on her shopping list. At the market, she realized from her list that she completed 40% of her shopping. Determine how many more items she has to buy?* | |
| **Lesson Closure**  ***In completing this part, refer to the Essential Questions to check that learning has taken place.*** | |
| ***Activity (eg: 20 minutes)***   * + - * 1. *In your Elbo partner: Using think pair ink, ask learners to write at least one use of fractions and decimals in their everyday life and share with the larger class.*         2. *Give the next lesson to be learned next week for them to read advance.* | |
| **Reflection & Remarks** | |
| 1. *What was my best moment in today’s lesson and how can I create more of such situations?* 2. *What did the learners find difficult to understand, and what activities did learners complete with ease and accuracy?* | |
| **lesson 2** | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | |
| ***Teacher Activity*** | ***Learner Activity*** |
| **Starter *Activity (10 minutes)***    Instruct learners to bring out the apple you Learners slice the apple in two and ask them to come out with the result. To bring for the lesson. | |
| ***Introductory activity (25 minutes)***  *Provide multipurpose model charts or manipulative like fraction strips or fraction circles to visually represent additive and multiplicative inverses of fractions.*  *Show how 3/5 and -3/5 cancel each other out to form zero.*  *Through collaborative learning Demonstrate how 2/3 and its multiplicative inverse 3/2 multiply to give 1.*  *Discuss the significance of these inverses in operations like division*  ***Activity 1 (eg 35minutes)***   1. *Provide scenarios where fractions can be interpreted differently by discussing how ¾ represents three out of four = part of a whole.*   *Explore how 4/5 represents the ratio of four to five.*  ***Activity 2 (30 minutes)***  *Create exercises where students practice converting between forms by*   1. *converting mixed numbers to improper fractions g e.*   *Convert improper fractions to mixed numbers e.g. .*   1. *Assign task that require converting fractions in practical situations such as recipe scaling or budget calculations* | ***Introductory activity (25 minutes)***  *Learners through experiential learning use model charts or manipulatives like fraction strips or fraction circles to explore additive and multiplicative inverses of fractions.*  *And Show how 3/5 and -3/5 cancel each other out to form zero.*  *Through collaborative learning, learners Demonstrate how 2/3 and its multiplicative inverse 3/2 multiply to give 1.*  *Guide learners to Discuss the significance of these inverses in operations like division*  ***Activity 1(eg 35 minutes)***  Learners through think pair and share   1. Identify fractions that represent part of a whole object or quantity eg pizza slices, time segments. 2. Interpret fractions as part of a group eg students in a class, marbles in a jar. 3. Present situations where fractions are used to compare quantities eg boys to girls in a class, white cars total cars in a parking lot.   ***Activity 2 (30 minutes)***  ***Learners practice*** *converting between different forms by*   1. *converting mixed numbers to improper fractions e.g.*   *Convert improper fractions to mixed numbers e.g. .*   1. *Learners convert fractions in practical situations such as recipe scaling or budget calculations* |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | |
| ***Level 3***   1. Express 5/ 8 as a decimal to two decimal places 2. . A line manager is calculating the percentage of progress for a school project, and has completed 5 out of the 8 planned tasks. How will you help him to represent the completion rate as a decimal rounded to two decimal places? 3. A fraction of students in a class have access to online learning resources. If 15 out of 32 students can access these resources, convert the fraction to a decimal simplify it to show the ratio of students with online access | |
| **Lesson Closure**  ***In completing this part, refer to the Essential Questions to check that learning has taken place.*** | |
| ***Activity (15 minutes)***   1. *Select a student from each row to mention what they have learnt.* | |
| **Reflection & Remarks** | |
| 1. *Which materials best supported the delivery of the lesson and how did learners find its use in aiding their understanding of the concept taught?* 2. *Were the different subgroups in the class catered?*   *Were the learners enthusiastic about the activities and resources employed in the delivery of the lesson?* | |