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**WEEK 1: LESSON 1**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Identify the place value of digits up to millions using place value apparatus.

2. Use the place value of digits up to millions in real-life contexts.

3. Appreciate the importance of understanding large numbers in daily life.

**Key Inquiry Question:**

- How do you identify the place value of numbers?

**Learning Resources:**

- Place value charts

- Mathematics Learner's Textbook

- Large number flashcards

- Lesson notes

- Teacher's Guide

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on whole numbers and their values.

- Discussion: Guide learners to read and discuss relevant content from the learning resources. Emphasize the understanding of place value, particularly in large numbers.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Place Value

- Begin by giving a brief explanation of place value and its significance.

- Use a place value chart to illustrate the different positions (ones, tens, hundreds, thousands, etc. up to millions).

- Highlight examples of large numbers and their place values.

**Step 2:** Group Activity with Place Value Apparatus

- Divide the class into small groups.

- Provide each group with place value apparatus (manipulatives like base-ten blocks or tokens).

- Task: Each group will represent a large number (e.g., 3,456,789) using the apparatus, clearly showing the value of each digit.

**Step 3:** Analyzing Large Numbers

- Each group will use a place value chart to write down their number and explain the value of each digit.

- Encourage learners to engage in a discussion and ask questions about each group's number representation.

**Step 4:** Real-Life Application

- Discuss how large numbers are seen in real life (e.g., population statistics, distances, money).

- As a class, brainstorm examples of where they might encounter large numbers and the importance of understanding them.

**Conclusion (5 minutes):**

- Summarize key points such as the definition of place value and how to identify the place value in large numbers.

- Engage the class in a brief interactive activity: show a large number flashcard and ask students to shout out the place value of a specified digit.

- Provide a preview of the next lesson's topic (e.g., operations with large numbers) and encourage students to think about where they see large numbers in their daily lives.

**Extended Activities:**

- Homework: Assign students to find five examples of large numbers in newspapers, books, or online, and write a short paragraph about their significance.

- Group Project: Have students create a poster showing a large number using images and illustrations that relate to the number (e.g., 1 million could be illustrated with a million small dots or images representing a million of something).

**Teacher Self-Evaluation:**

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**WEEK 1: LESSON 2**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1.Explain the total value of digits in numbers up to millions.

2. Calculate the total values of digits in given numbers.

3.Enjoy analyzing and breaking down large numbers.

**Key Inquiry Question:**

- How do we find the total value of numbers?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Lesson notes

- Charts showing total value of numbers

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson by asking students to share key points they learned.

- Introduce the concept of total value in numbers, prompting a discussion by drawing on ideas from the charts and textbooks. Ask guiding questions to engage students.

**Lesson Development (25 minutes):**

**Step 1:** Explanation of Total Value

- Introduce the concept of the total value of digits, explaining how each digit has a specific value based on its position (ones, tens, hundreds, etc.).

- Use a chart to demonstrate this visually, showing an example like the number 5,672 and breaking it down into 5,000 + 600 + 70 + 2.

**Step 2:** Group Activity - Finding Total Values

- Divide students into pairs or small groups and assign each group a set of numbers (e.g., 1,234, 9,876, 6,543, 12,345,678).

- Have them work collaboratively to find the total value of each digit and share their findings within their group.

**Step 3:** Sharing and Discussion

- Invite groups to share their calculated total values with the class.

- As each group shares, facilitate discussion by asking others to confirm the findings or offer corrections, reinforcing peer learning.

**Step 4:** Problem Solving

- Provide a few problems for students to solve individually, requiring them to calculate total values for digits in larger numbers.

- Circulate the classroom to provide support and assess understanding during this activity.

**Conclusion (5 minutes):**

- Summarize the key points of the lesson, reminding students how to find total value in numbers.

- Conduct a quick, fun quiz with a few questions about total value concepts to reinforce learning.

- Preview the next lesson on comparing and ordering large numbers, encouraging students to think of why knowing total value is important for this topic.

**Extended Activities:**

- Home Task: Have students choose a number in their home (like a phone number or street address) and write its total value, using place value breakdown.

- Number Poster: In groups, students create a poster illustrating a large number, showing each digit's total value and explaining why it is significant.

- Math Games: Introduce online or board games that focus on place value and large numbers, allowing students to practice in an engaging way.

**Teacher Self-Evaluation:**

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**WEEK 1: LESSON 3**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1.Recognize numbers up to millions in symbols.

2.Match spoken numbers with symbols in various contexts.

3. Show confidence when reading large numbers.

**Key Inquiry Question(s):**

- What should you consider when reading numbers up to millions in symbols?

**Learning Resources:**

- Number charts and cards

- Mathematics Learner's Textbook

- Teacher's Guide

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson, focusing on foundational concepts of whole numbers.

- Guide learners to read and discuss relevant content from the learning resources, emphasizing the understanding of the key concepts related to large numbers.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Large Numbers

- Demonstrate how to read large numbers, starting from thousands up to millions.

- Use a number chart to highlight the place values (units, thousands, millions).

- Encourage learners to observe differences in reading larger numbers (e.g., 1,234,567).

**Step 2:** Group Activity - Number Reading

- Divide learners into small groups.

- Provide each group with number charts and cards representing various large numbers.

- Instruct each group to take turns reading the numbers aloud and discussing their values.

**Step 3:** Pair Activity - Number Matching Game

- Distribute matching cards with spoken numbers and their symbol representations.

- Learners will work in pairs to match the spoken numbers with the correct symbol format.

- Walk around to assist and encourage learners as needed.

**Step 4:** Class Discussion and Sharing

- Reconvene as a whole class.

- Invite each group to share their experiences from the activities.

- Discuss any challenges faced while reading or matching the numbers.

**Conclusion (5 minutes):**

- Summarize key points of the lesson, reinforcing the ability to read and recognize numbers up to millions.

- Conduct a brief interactive activity, such as a quick quiz or game, to reinforce the main topics.

- Prepare learners for the next session by previewing upcoming topics or posing questions about larger numbers or different numerical systems to consider.

**Extended Activities:**

- Number Scavenger Hunt: Assign learners to find numbers in their environment (like in newspapers, books, or on products) that are in the millions and share them in the next class.

- Create Your Own Number Cards: Encourage learners to create their own cards with large numbers and practice reading them aloud with family or friends.

- Online Games: Provide links to online games or apps that focus on reading and matching large numbers for additional practice.

**Teacher Self-Evaluation:**

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**WEEK 1: LESSON 4**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Write numbers up to millions in symbols.

2. Convert written forms of numbers into symbols.

3. Enjoy writing numbers up to millions in symbols.

**Key Inquiry Question(s):**

- How do we write numbers up to millions in symbols?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Lesson notes

- Number charts

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing the previous lesson about whole numbers.

- Ask learners to share what they remember about writing numbers.

- Guide learners to read and discuss relevant content from the Mathematics Learner's Textbook that relates to writing numbers, making sure to clarify any key concepts.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Writing Large Numbers

- Explain what it means to write numbers in symbols, especially focusing on numbers up to millions.

- Show examples of large numbers (e.g., 1,000,000; 500,000; and 2,345,678) on the board.

**Step 2:** Converting Written Forms to Symbols

- Provide learners with written forms of various large numbers (e.g., “five million”, “three hundred thousand”).

- Demonstrate how to convert these written forms to symbols on the board.

- Allow students to practice this with a few examples in pairs, helping each other as needed.

**Step 3:** Individual Practice

- Distribute worksheets with a mix of written forms of numbers to convert to symbols and symbols to write in words.

- Have learners complete the worksheet independently to reinforce their understanding.

**Step 4:** Group Discussion and Sharing

- Regroup and invite a few students to share their answers and methods with the class.

- Discuss any differences in responses to facilitate deeper understanding.

**Conclusion (5 minutes):**

- Summarize the key points from the lesson: how to write numbers up to millions in symbols and convert between written and symbolic forms.

- Conduct a brief interactive activity, such as a quick quiz or "number writing race" where students demonstrate their ability to convert numbers quickly.

- Preview the next session’s topic: "Exploring Place Value in Larger Numbers" and ask students to think about how place value plays a role in what we learned today.

**Extended Activities:**

- Have students create a "Number Poster" where they showcase their favorite numbers written in both symbols and words, along with illustrations or facts about those numbers.

- Encourage students to collect large numbers from the news, books, or other media, and prepare a short presentation on how these numbers are represented in symbols.

**Teacher Self-Evaluation:**

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**WEEK 1: LESSON 5**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Explain the concept of ascending and descending order in numbers.

2. Order numbers up to 100,000 in real-life situations.

3. Enjoy sequencing numbers.

**Key Inquiry Question(s):**

- What is the difference between ascending and descending order in numbers?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Number charts

**Organisation of Learning:**

**Introduction (5 minutes):**

- Briefly review the previous lesson on number values.

- Guide learners to read and discuss relevant content about ascending and descending order in the learning resources. Discuss why order matters in everyday life (like dates, scores, etc.).

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Concepts

- Explain the definitions of ascending (numbers going from smallest to largest) and descending order (numbers going from largest to smallest).

- Use a number chart to visually demonstrate the difference.

- Provide examples: for example, list numbers like 15, 3, 42, and show how 3, 15, 42 is ascending while 42, 15, 3 is descending.

**Step 2:** Group Activity - Identifying Orders

- In small groups, give learners a set of mixed numbers up to 100,000.

- Ask them to arrange these numbers in both ascending and descending order.

- Encourage each group to share their arranged numbers and explain their thought process.

**Step 3:** Rearranging Digits

- Hand out a large number (e.g., 57,204) and ask students, either individually or in pairs, to rearrange its digits to create the largest and smallest possible numbers.

- Discuss different combinations and how they represent extreme values.

**Step 4:** Real-life Application

- Create scenarios where learners may encounter ordering numbers in real life (e.g., ranking scores in a game, sorting weights of objects).

- Prompt learners to share examples of when they’ve seen numbers ordered in real life.

**Conclusion (5 minutes):**

- Summarize key points regarding ascending vs. descending order and real-life applications.

- Conduct a quick interactive quiz: have learners sort a series of numbers on the board while the class shouts out whether it’s ascending or descending.

- Preview the next session, which will build on ordering with the introduction of decimals.

**Extended Activities:**

- Home Project: Ask students to keep track of the temperatures over a week and arrange them in ascending and descending order.

- Math Journal: Encourage learners to write daily or weekly reflections about when they encounter numbers in order (like in sports scores or weather reports).

- Number Art: Have students create a visual representation of a number line decorating it with sequences of numbers they find interesting or meaningful.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 1**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**-By the end of the lesson, the learners should be able to:**

1. State the rules for rounding off numbers up to 100,000 to the nearest thousand.

2. Round off numbers up to 100,000 to the nearest thousand in different situations.

3. Develop accuracy in rounding off numbers.

**Key Inquiry Question:**

- How do we round off numbers up to 100,000 to the nearest thousand?

**Learning Resources:**

- Number cards

- Mathematics Learner's Textbook

- Teacher’s Guide

- Lesson notes

- Charts

**Organization of Learning:**

**Introduction (5 minutes):**

- Review Previous Lesson: Start by revisiting the last lesson, focusing on the concepts of place value and how they relate to rounding.

- Discussion: Ask students what they remember about rounding numbers and then guide them to read and discuss relevant sections in the textbook.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Rounding Rules

- Explain the basic rule of rounding: if the digit to the right of the rounding place is 5 or greater, round up; if it’s less than 5, round down.

- Give examples using a chart showing numbers rounded to the nearest thousand (e.g., 23,456 rounds to 23,000; 23,678 rounds to 24,000).

**Step 2:** Group Discussion

- Divide students into small groups and provide them with number cards ranging from 1 to 100,000.

- In their groups, learners discuss and practice the rounding rules using different numbers. Encourage them to illustrate their understanding on paper by writing out their rounding process.

**Step 3:** Individual Practice

- Ask students to select 5 numbers from their number cards and round each to the nearest thousand on their own.

- After they complete their rounding, students can swap their answers with a partner for peer review.

**Step 4:** Sharing and Feedback

- In a class discussion, invite volunteers to share their rounded numbers and explain the rounding process they followed.

- Provide feedback and clarify any misunderstandings.

**Conclusion (5 minutes):**

- Summarize Key Points: Review the rounding rules and the importance of understanding place value.

- Interactive Activity: Conduct a quick game where you call out a number, and students show thumbs up for rounding up and thumbs down for rounding down.

- Preview of Next Session: Introduce the next topic on estimation and how rounding plays a key role in that.

**Extended Activities:**

- Rounding Race: Create a rounding game where students race against time to correctly round off as many numbers as possible in 3 minutes.

- Rounding Stories: Have students create a short story using at least 5 rounded numbers, incorporating them into a real-world context (e.g., a shopping trip, sports scores).

- Online Practice: Encourage students to use math websites or apps that provide interactive rounding exercises.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 2**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Explain the concept of square roots of numbers.

2. Apply square roots of perfect squares up to 10,000 in different situations.

3. Enjoy finding the square roots of numbers in different contexts.

**Key Inquiry Question(s):**

- How do we find the square root of numbers?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Lesson notes

- Charts

**Organisation of Learning:**

**Introduction (5 minutes):**

- Briefly review the previous lesson on perfect squares.

- Ask students questions to gauge their prior knowledge of square roots and encourage participation.

- Guide learners to read and discuss relevant content from the learning resources, emphasizing key concepts about square roots.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Square Roots

- Explain what a square root is: the number that, when multiplied by itself, gives the original number.

- Provide examples:

- √4 = 2 (since 2 x 2 = 4)

- √9 = 3 (since 3 x 3 = 9)

- Use a chart to illustrate how square roots are derived.

**Step 2:** Identifying Perfect Squares

- Work with students to identify perfect squares up to 10,000 (e.g., 1, 4, 9, 16, 25, ..., 10000).

- Encourage group discussions where learners share perfect squares they know.

- Use the textbook or charts for visual aids in finding perfect squares.

**Step 3:** Practicing Finding Square Roots

- Provide examples of perfect squares, and have students work individually or in pairs to calculate their square roots (e.g., √25, √36, √81).

- Discuss the methods to verify square roots by multiplying the root back by itself.

- Guide students through mixed practice problems to solidify their understanding.

**Step 4:** Applying Square Roots to Real-Life Situations (optional)

- Present scenarios where square roots are applicable, such as determining the side length of a square garden given the area.

- Encourage students to think creatively and share their ideas on where they might see square roots in real life.

**Conclusion (5 minutes):**

- Summarize the key points discussed: the definition of square roots, identifying perfect squares, and finding square roots of those numbers.

- Conduct a brief interactive activity, such as a true/false game with square roots, to reinforce main topics.

- Preview the next lesson (e.g., introducing irrational numbers or more complex square roots).

**Extended Activities:**

- Square Root Scavenger Hunt: Create a worksheet where students must find examples of perfect squares and their roots in their environment (e.g., square tiles, books).

- Math Art Project: Challenge students to design a poster illustrating square roots visually, including drawings of squares and their roots as part of a collaborative classroom display.

- Square Root Games: Introduce online math games or apps that focus on square root concepts for extra practice at home.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 3**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1.Recognize numbers in words up to 100,000.

2.Translate symbols into written words.

3.Appreciate clarity in written communication.

**Key Inquiry Question(s):**

- How do we read and write numbers in symbols and in words?

**Learning Resources:**

- Number charts and cards

- Mathematics learner's textbook

- Teacher's Guide

- Lesson notes

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on whole numbers, specifically focusing on the largest numbers encountered.

- Engage learners in a brief discussion to activate prior knowledge. Ask questions like, “What is the largest number you can think of?” and “How do we write it down?”

**Lesson Development (25 minutes):**

**Step 1:** Reading Numbers in Words

- Present learners with a number chart displaying numbers up to 100,000.

- Individually or in pairs, learners select various numbers from the chart and practice reading them aloud in words.

- Encourage learners to help each other with pronunciation and understanding.

**Step 2:** Writing Numbers in Words

- Provide learners with number cards that contain numerical representations (e.g., 25,368).

- Ask learners to write the numbers in words using their math textbooks as a reference.

- Circulate the room to assist where needed and provide feedback.

**Step 3:** Translating Symbols to Words

- Organize a group activity where learners write selected numbers on the board in symbols (e.g., 100,235).

- In groups, they will write the corresponding words next to the symbols, checking each other's work to ensure accuracy.

**Step 4:** Clarity in Written Communication

- Discuss the importance of clarity in writing, especially when it comes to numbers.

- As a class, review examples of well-written and poorly written number translations on the board to identify mistakes and encourage improvements.

**Conclusion (5 minutes):**

- Summarize the key points of the lesson, reinforcing what was learned about reading and writing numbers in both words and symbols.

- Conduct a quick interactive quiz: Show random numbers, and ask students to write them in words. Alternatively, read numbers in words and have them write down the symbols.

- Prepare learners for the next session by sparking interest in the upcoming topic, which will focus on comparing and ordering whole numbers.

**Extended Activities:**

- Number Word Search: Create a word search puzzle using number words up to 100,000 for learners to complete at home.

- Create Your Own Number Book: Have learners create a small book where each page contains a number in symbols, its written form, and an illustrated representation of the number (e.g., "Twenty-five thousand" with drawings of 25 items).

- Number Translation Relay: Set up a classroom relay where groups compete to translate symbols to words and vice versa on a whiteboard within a set time limit.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 4**

**Strand:** Numbers

**Sub Strand:** Whole Numbers

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Explain the concept of square of numbers.

2.Apply squares of whole numbers up to 100 in different situations.

3. Enjoy finding squares of whole numbers up to 100 in different situations.

**Key Inquiry Question(s):**

- How do we find squares of numbers?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Charts showing squares of numbers

- Lesson notes

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing the previous lesson on whole numbers.

- Engage the learners in a brief discussion about what they remember and ask them to share any examples of squares of numbers they might know.

- Introduce the topic of squares of numbers and provide a simple definition.

**Lesson Development (25 minutes):**

**Step 1:** Define Squares of Numbers

- Explain that the square of a number is the result of multiplying that number by itself (e.g., 4 x 4 = 16).

- Invite learners to suggest different whole numbers, and write them on the board to calculate their squares together as a class (1² = 1, 2² = 4, etc.).

**Step 2:** Group Work - Finding Squares

- Divide learners into small groups.

- Give each group a chart showing squares of numbers from 1 to 10.

- Ask them to find the squares of numbers up to 10 and discuss what they notice about the results.

- Each group will create a small presentation to share their findings with the class.

**Step 3:** Real-Life Application

- Discuss real-life situations where squares can be applied, such as calculating the area of square plots of land.

- Present a problem for learners to solve: "If one side of a square garden is 5 meters, what is the area?" (5m x 5m = 25m²).

**Step 4:** Collaborative Multiplication

- Partner learners up and give them a list of numbers.

- Have them take turns multiplying the numbers by themselves (e.g., 6 x 6, 9 x 9) and writing down the squares. Encourage sharing different multiplication strategies.

**Conclusion (5 minutes):**

- Summarize key points and the definition of square numbers introduced in the lesson.

- Conduct a quick interactive quiz (e.g., "What is the square of 7?") to reinforce the main concepts.

- Preview the next session, introducing the idea of square roots as a follow-up.

**Extended Activities:**

- Encourage learners to create a square number chart that goes up to 100, filling in all the squares.

- Assign a mini-project where students find and record square measurements of objects at home (e.g., calculating the area of a square table, using the formula A = side x side).

- Organize a fun “Square Relay Race” where teams race to solve square number problems.

**Teacher Self-Evaluation:**

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**WEEK 2: LESSON 5**

**Strand:** Numbers

**Sub Strand:** Multiplication

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Identify tools such as fact families, skip counting, multiplication charts, and digital devices used for multiplication.

2. Use a multiplication chart to solve simple multiplication problems.

3. Appreciate the usefulness of tools in solving mathematical problems.

**Key Inquiry Question(s):**

- How do we multiply numbers using the multiplication chart?

**Learning Resources:**

- Multiplication charts

- Mathematics Learner's Textbook

- Teacher's Guide

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing the previous lesson on basic multiplication and its importance.

- Guide learners to read and discuss relevant content from the multiplication chart section of their Mathematics Learner's Textbook, emphasizing the key concepts of tools used for multiplication.

**Lesson Development (30 minutes):**

**Step 1:** Introduction to Multiplication Tools

- Discuss the different tools used for multiplication:

- Fact Families: Explain how these groups show the relationship between multiplication and division.

- Skip Counting: Demonstrate how counting by multiples helps in fast multiplication.

- Multiplication Chart: Show how to read and use the multiplication chart effectively.

- Provide examples and engage students by asking if they have used any of these tools before.

**Step 2:** Pair Work with the Multiplication Chart

- Assign students to pairs and give each pair a multiplication chart.

- Have students practice finding products for simple multiplication problems (e.g., 12 x 3, 15 x 6) using the chart.

- Invite pairs to share their answers and methods, encouraging discussion on how the chart helped them.

**Step 3:** Solving 4-Digit by 2-Digit Multiplications

- Present a more complex multiplication problem (e.g., 1234 x 12) and walk through the steps together as a class using the multiplication chart.

- Emphasize step-by-step solving using skip counting and fact families as aids.

**Step 4:** Individual Practice with Problems

- Provide students with a set of multiplication problems that require them to use the multiplication chart (including some 4-digit by 2-digit problems).

- Circulate the room to offer support and check for understanding.

**Conclusion (5 minutes):**

- Summarize the key points covered in the lesson: the tools for multiplication and how to effectively use the multiplication chart.

- Conduct a quick interactive activity, such as a quiz or game, to reinforce the main topics.

- Prepare learners for the next session by previewing upcoming topics that will build on what they’ve learned today (e.g., introduction to division).

**Extended Activities:**

- Multiplication Bingo: Create bingo cards with multiplication problems. As the answers are called out, students can mark their cards.

- Multiplication Relay: Organize a team-based relay where students solve multiplication problems using charts at each station.

- Fact Family Graphic Organizer: Have students create a visual that shows the relationship between multiplication and division using fact families for a set of numbers.

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 1**

**Strand:** Numbers

**Sub-Strand:** Multiplication

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. State the steps in multiplying a 4-digit number by a 2-digit number using the expanded form.

2. Multiply up to a 4-digit number by a 2-digit number using the expanded form.

3. Develop confidence in performing multiplication with large numbers.

**Key Inquiry Question:**

- How do we multiply numbers using the expanded form?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on basic multiplication and place value.

- Guide learners to read and discuss relevant content from the learning resources, emphasizing the understanding of the expanded form and its purpose in multiplication.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Expanded Form

- Explain what expanded form is using a few examples.

- Show how to break down a 4-digit number (e.g., 2,345) into its expanded form: 2,000 + 300 + 40 + 5.

- Discuss why expanded form makes multiplication easier, especially when multiplying by larger numbers.

**Step 2:** Model Multiplication Using Expanded Form

- Illustrate how to multiply the 4-digit number by the 2-digit number using expanded form on the board.

- Example: Multiply 2,345 by 23.

- Break down 23 into 20 and 3, then show the multiplication of 2,345 by each part separately.

**Step 3:** Guided Practice

- In pairs, have students take another example (e.g., 4,678 x 15) and practice breaking down both numbers into expanded form and then multiplying.

- Circulate and provide support as they work through the exercise.

**Step 4:** Independent Practice

- Provide learners with a worksheet containing problems where they must use expanded form to multiply other 4-digit numbers by 2-digit numbers.

- Encourage students to show their working and use the method discussed.

**Conclusion (5 minutes):**

- Summarize the key points: what expanded form is, how to multiply using it, and its advantages.

- Conduct a brief interactive activity, like a quick-fire quiz on identifying expanded forms or solving a problem together.

- Preview the next session by asking, “What might we explore next about multiplication or division?”

**Extended Activities:**

- Create a Flipbook: Learners can create a flipbook where each page illustrates a step in multiplying a 4-digit number by a 2-digit number in expanded form.

- Real-Life Application: Encourage students to find instances where they might use multiplication in real life (shopping, budgeting) and create word problems based on their findings.

- Group Challenge: In groups, challenge learners to come up with the largest 4-digit number and a 2-digit number they can create, then multiply them using expanded form.

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 2**

**Strand:** Numbers

**Sub Strand:** Multiplication

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Identify real-life scenarios where multiplication is used.

2. Solve real-life multiplication problems involving 4-digit and 2-digit numbers using digital devices.

3. Value the practical applications of multiplication in everyday life.

**Key Inquiry Question(s):**

- What are the practical applications of multiplication in real life?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Digital devices

**Organization of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on basic multiplication concepts.

- Guide learners in reading and discussing relevant content from the textbook, focusing on real-life applications of multiplication.

**Lesson Development (25 minutes):**

**Step 1:** Brainstorming Real-Life Scenarios

- In small groups, learners will discuss and list at least three real-life scenarios where multiplication is applicable (e.g., calculating total cost at a grocery store, scaling a recipe, or determining distance traveled).

- Groups will then share their scenarios with the class.

**Step 2:** Working on Multiplication Problems

- Each learner will select a real-life scenario from the groups and create a multiplication problem involving a 4-digit number by a 2-digit number.

- Using digital devices (calculators, tablets), they will solve their problems showing steps in expanded form.

**Step 3:** Sharing Findings

- Learners will present their problems and solutions to the class, explaining the real-life context and how multiplication helped them arrive at their answers.

- Encourage peers to ask questions or suggest alternative solutions.

**Step 4:** Class Discussion

- Facilitate a discussion on the importance of multiplication in everyday life, asking students to reflect on how their lives would be different without multiplication.

**Conclusion (5 minutes):**

- Summarize the key points and specific learning outcomes achieved during the lesson, reinforcing the real-life applications of multiplication.

- Conduct a brief interactive activity, such as a multiplication quiz or a “think-pair-share” where students reflect on what they learned.

- Preview the next session by introducing the topic of division and how it relates to multiplication, prompting questions for students to ponder at home.

**Extended Activities:**

- Real-Life Multiplication Project: Learners can choose a topic of interest (e.g., sports, cooking, travel) and create a presentation or report on how multiplication is used in that field, incorporating visuals and real-world examples.

- Math Journals: Encourage students to keep a journal where they write about their daily encounters with multiplication, providing at least one example each week.

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 3**

**Strand:** Numbers

**Sub Strand:** Multiplication

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Explain the concept of rounding off numbers to the nearest ten.

2. Estimate products by rounding off numbers being multiplied to the nearest ten in real-life situations.

3. Appreciate estimation as a useful skill for quick problem-solving.

**Key Inquiry Question(s):**

- How do we multiply numbers?

**Learning Resources:**

- Teacher's Guide

- Chalkboard and Chalk

- Mathematics Learner's Textbook

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on multiplication and estimation.

- Guide learners to read and discuss relevant content from the Mathematics Learner's Textbook.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Rounding Off

- Explain what rounding off means and why it is important in mathematics. Use examples such as rounding numbers like 56 to 60.

- Ask students for their own examples of rounding numbers to the nearest ten.

**Step 2:** Group Discussion

- Divide learners into small groups and assign each group different sets of numbers to round off to the nearest ten.

- Allow groups to discuss and present their examples to the class.

**Step 3:** Estimating Products

- Use a chalkboard to demonstrate how to estimate the product of two numbers by rounding them off first. For example, round 48 x 36 to 50 x 40. Discuss why this method is useful.

**Step 4:** Real Life Application

- Present a few real-life scenarios (like shopping, cooking, or building) where estimation is beneficial.

- Have students estimate products based on provided situations using the concepts of rounding off.

**Conclusion (5 minutes):**

- Summarize the key points discussed about rounding off and estimating products.

- Conduct a brief quiz or interactive game to reinforce the main topics covered (e.g., quick-fire questions on rounding off).

- Preview the next lesson, which will delve deeper into multiplication with larger numbers.

**Extended Activities:**

- Rounding Off Game: Create a board game where students round off numbers and solve multiplication problems.

- Estimation Challenge: Have students estimate costs for a pretend shopping list and discuss how rounding helps in budgeting.

- Real-Life Exploration: Ask students to find examples of multiplication in their daily lives (like recipes or building projects) and present their findings in the next class.

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 4**

**Strand:** Numbers

**Sub Strand:** Multiplication

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Recognize patterns in multiplication.

2. Make patterns involving multiplication of numbers not exceeding 1,000 in different situations.

3.Enjoy discovering and creating mathematical patterns.

**Key Inquiry Question(s):**

- How do we recognize and make patterns in multiplication?

**Learning Resources:**

- Number cards

- Multiplication charts

- Mathematics Learner's Textbook

- Teacher's Guide

- Graph papers

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson by asking students to share what they learned about multiplication.

- Guide learners to read and discuss relevant content from the learning resources, focusing on multiplication patterns and how they can be applied.

**Lesson Development (25 minutes):**

**Step 1:** Explore Multiplication Patterns

- Distribute multiplication charts to each group.

- Have students find and highlight patterns (e.g., even and odd products, skip counting by 5s, etc.).

- Encourage discussion in pairs about the patterns they observe.

**Step 2:** Create Patterns with Number Cards

- Provide each group with number cards.

- Instruct them to create different multiplication patterns (e.g., 2x, 3x, 5x) using the number cards to form various products not exceeding 1,000.

- Allow groups to brainstorm and come up with their own unique patterns, such as creating a multiplication sentence or a visual pattern using graph paper.

**Step 3:** Share and Assess Patterns

- Have each group present their created patterns to the class.

- Prompt students to ask questions and provide constructive feedback. This will foster a collaborative learning environment.

**Step 4:** Reflection and Questions

- Guide a class discussion where students can reflect on the patterns they created and what they learned.

- Ask the students to think of real-life situations where these multiplication patterns might apply.

**Conclusion (5 minutes):**

- Summarize the key points of the lesson: recognizing and creating patterns in multiplication.

- Conduct a brief interactive activity, such as a "Pattern Hunt," where students find and write down examples of multiplication patterns in their classroom or textbooks.

- Preview the next session by mentioning that students will be exploring multiplication problems and real-world applications.

**Extended Activities:**

- Math Patterns Art: Have students create a poster that illustrates their favorite multiplication pattern using colors and drawings.

- Multiplication Pattern Booklet: Encourage students to create a small booklet where they write and illustrate different multiplication patterns they explore at home or in class over the next week.

- Online Pattern Games: Suggest students play interactive multiplication pattern games online to reinforce their understanding while having fun.

**Teacher Self-Evaluation:**

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**WEEK 3: LESSON 5**

**Strand:** Numbers

**Sub Strand:** Division

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Define the terms dividend, divisor, quotient, and remainder in division.

2. Divide a 4-digit number by a 3-digit number where the dividend is greater than the divisor in real situations.

3. Enjoy solving division problems.

**Key Inquiry Questions:**

- How do we divide numbers using the relationship between multiplication and division?

**Learning Resources:**

- Mathematics Learner's Textbook

- Lesson notes

- Teacher's Guide

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a quick review of the previous lesson on multiplication. Ask students how multiplication relates to division.

- Guide learners to read and discuss the definitions of dividend, divisor, quotient, and remainder from the textbook. Encourage students to share what they think these terms mean.

**Lesson Development (25 minutes):**

**Step 1:** Introduce Key Terms

- Define dividend, divisor, quotient, and remainder.

- Dividend is the number you are dividing up.

- Divisor is the number you are dividing by.

- Quotient is the result of the division.

- Remainder is what is left over after the division if the dividend doesn't divide evenly.

- Write a simple example on the board: 15 ÷ 3 = 5. Identify the dividend, divisor, quotient, and remainder if there is one.

**Step 2:** Model a Division Problem

- Demonstrate how to divide a 4-digit number (e.g., 1234) by a 3-digit number (e.g., 123).

- Show the long division process step-by-step, explaining each part as you go.

**Step 3:** Guided Practice in Pairs

- Distribute similar problems for students to solve in pairs. For example, have them divide 2456 by 124.

- Circulate the classroom to provide support as necessary.

**Step 4:** Share and Discuss Answers

- Have pairs share their answers with the class. Discuss any discrepancies in answers and reinforce the long division process.

**Conclusion (5 minutes):**

- Summarize the key points: definitions of dividend, divisor, quotient, and remainder, and how to divide a 4-digit number by a 3-digit number.

- Conduct a brief interactive activity, such as a quick quiz or a "division relay," where students solve problems on the board in teams.

- Preview the next session, mentioning that they will explore division with remainders and how it applies to real-life situations like sharing items.

**Extended Activities:**

- Homework Assignment: Assign a worksheet with a variety of division problems, including some real-world applications (e.g., dividing items among friends).

- Challenges: Encourage learners who finish early to create their own division problem for a friend to solve, including identifying all four terms.

- Math Game: Introduce a fun online division game or app that allows students to practice division in a playful context.

**Teacher Self-Evaluation:**

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**WEEK 4: LESSON 1**

**Strand:** Numbers

**Sub Strand:** Division

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Explain how to divide a 4-digit number by up to a 3-digit number using the long division method.

2. Divide up to a 4-digit number by up to a 3-digit number in real situations where the dividend is greater than the divisor.

3. Enjoy working out division problems using the long method.

**Key Inquiry Question:**

- How do we work out division using the long method?

**Learning Resources:**

- Mathematics Learner's Textbook

- Chalkboard and Chalks

- Teacher's Guide

**Organisation of Learning:**

**Introduction (5 minutes):**

1. Review the Previous Lesson:

- Start with a quick recap of the previous lesson on basic division concepts and any relevant vocabulary.

2. Discussion:

- Guide learners to read a section from the Math Learner's Textbook about long division. Facilitate a brief discussion highlighting key concepts related to division using the long method.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Long Division

- Explain the long division method using a visual example on the chalkboard.

- Break down the steps: Divide, Multiply, Subtract, and Bring down.

- Example: Using 4567 ÷ 123.

**Step 2:** Group Discussion

- In pairs or small groups, learners discuss the long division process. Encourage them to identify each step involved.

- Circulate the room to facilitate discussions and provide help as needed.

**Step 3:** Practice Problems

- Distribute a worksheet with division problems (e.g., 4321 ÷ 321, 8765 ÷ 125).

- Learners work independently or in pairs to solve the problems using the long division method.

**Step 4:** Share and Discuss Answers

- Invite groups to present their answers to the class.

- Discuss any common mistakes and address questions or difficulties experienced during the practice.

**Conclusion (5 minutes):**

- Summarize the key points learned about long division: steps involved, the importance of each step, and how to check answers.

- Conduct a quick interactive activity such as a division challenge where students work in teams to solve a problem on the board.

- Preview the next lesson topic, hinting at how division can be used in real-world scenarios like splitting bills or dividing items evenly among friends.

**Extended Activities:**

- Math Journal: Ask students to keep a math journal where they write out the steps of long division with a new problem each week.

- Real-World Applications: Instruct students to find real-life examples where they can apply long division (e.g., calculating costs, dividing groups) and present their findings to the class.

- Long Division Games: Create or use online games that reinforce long division skills.

**Teacher Self-Evaluation:**

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**WEEK 4: LESSON 2**

**Strand:** Numbers

**Sub Strand:** Division

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Explain how to round off numbers to the nearest ten.

2. Estimate quotients by rounding off the dividend and divisor to the nearest ten in real-life situations.

3. Appreciate the usefulness of estimation in real-life situations.

**Key Inquiry Question(s):**

- How do you round off numbers to the nearest ten?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Lesson notes

**Organization of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on division to refresh students' memories.

- Guide learners to read and discuss relevant content from the Mathematics Learner's Textbook to connect with rounding numbers.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Rounding Rules

- Explain the concept of rounding to the nearest ten.

- Use examples such as rounding 23 to 20 and 27 to 30.

- Have students practice rounding a few numbers independently (e.g., 34, 56, 78).

**Step 2:** Estimating Quotients

- Teach learners how to estimate quotients by rounding the dividend and divisor to the nearest ten.

- Work through a sample problem together (e.g., estimating 56 ÷ 7).

- Let pairs of students practice with their own examples (e.g., 45 ÷ 9).

**Step 3:** Real-Life Applications

- Discuss real-life situations where rounding and estimation would be useful, such as shopping or cooking.

- Encourage students to brainstorm examples from their own lives and share with the class.

**Step 4:** Group Activity

- Divide the class into small groups.

- Each group will receive a set of problems to solve using rounding and estimation and will present their findings to the class.

**Conclusion (5 minutes):**

- Summarize the key points learned about rounding and estimating.

- Engage the class in an interactive activity, such as a quick quiz on rounding numbers.

- Prepare learners for the next session by previewing topics, such as long division and its relationship with rounding.

**Extended Activities:**

- Rounding Challenge: Students can create a "Rounding Challenge" game where they round numbers quickly and compete for points in teams.

- Estimation Scavenger Hunt: Have students find real-world items with prices or quantities and estimate their totals by rounding to the nearest ten.

- Homework Assignment: Ask students to write about a time when estimation helped them in a real-life scenario, encouraging them to reflect on the importance of this skill.

**Teacher Self-Evaluation:**

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**WEEK 4: LESSON 3**

**Strand:** Numbers

**Sub Strand:** Division

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1.Identify the correct order of operations (BODMAS).

2. Perform combined operations involving addition, subtraction, multiplication, and division up to 3-digit numbers.

3. Develop a positive attitude towards multi-step problem-solving.

**Key Inquiry Question:**

- How do you work out questions involving combined operations?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Order of operations chart

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing the previous lesson on basic operations.

- Encourage students to share what they remember, focusing on any examples they enjoyed.

- Introduce the topic of BODMAS and ask students if they have heard of it before.

- Guide learners to read and discuss relevant content from the learners' textbook regarding BODMAS.

**Lesson Development (25 minutes):**

**Step 1:** Review BODMAS

- Explain what BODMAS stands for: Brackets, Order (exponents), Division, Multiplication, Addition, Subtraction.

- Show an example that applies all parts of BODMAS. For instance, solve: 3 + 6 × (5 + 4) ÷ 3 - 7.

- Make sure to visualize the operation order clearly on the board.

**Step 2:** Group Practice

- Divide learners into small groups of 3-4.

- Provide them with worksheets that include problems requiring BODMAS and involve two to four operations.

- Encourage collaborative problem-solving; they should discuss their thought process as they work through the problems.

**Step 3:** Peer Sharing

- Have each group share one or two problems they solved, explaining the steps they took and the BODMAS rules they applied.

- Allow for questions and provide feedback on their approaches.

**Step 4:** Individual Practice

- Assign a few problems for individual practice that involve 3-digit calculations using BODMAS.

- Walk around to assist learners who may be struggling.

**Conclusion (5 minutes):**

- Recap the key points discussed in the lesson: What is BODMAS? Why is it important?

- Conduct a quick interactive activity like a “BODMAS Buzz” game where you say a math operation, and learners must respond with the next operation using BODMAS.

- Preview the next session's topic, hinting that they’ll get to work on math puzzles involving real-world scenarios.

**Extended Activities:**

- Math Journals: Encourage students to keep a math journal where they can write about their problem-solving experiences throughout the week, reflecting on what strategies worked and what didn’t.

- BODMAS Challenge: Create a small classroom competition where students create their own multi-step problems incorporating BODMAS for their classmates to solve.

- Online Games: Recommend educational websites that focus on BODMAS and combined operations that can reinforce these skills outside the classroom.

**Teacher Self-Evaluation:**

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**WEEK 4: LESSON 4**

**Strand:** Numbers

**Sub Strand:** Division

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1.List examples of how division is used in daily life.

2.Solve real-life problems involving division.

3.Appreciate the use of division of whole numbers in real life.

**Key Inquiry Question:**

- Where is division used in real life?

**Learning Resources:**

- Role play materials

- Mathematics Learner's Textbook

- Teacher's Guide

**Organization of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson briefly, focusing on any foundational concepts related to division.

- Guide learners to read and discuss relevant content from the textbook related to the learning outcomes, emphasizing the importance of division in daily activities.

**Lesson Development (25 minutes):**

**Step 1:** Brainstorming Session

- In pairs, learners brainstorm examples of how division is used in daily life. Encourage them to think about scenarios like sharing food, dividing money for shopping, or splitting responsibilities at home.

- Each pair shares one example with the class.

**Step 2:** Problem-Solving

- Present a few real-life scenarios (e.g., distributing 24 cookies among 6 friends).

- In groups, learners work through the problems using division. Each group should explain their reasoning and solution to the class.

**Step 3:** Digital Exploration

- Introduce learners to a simple digital tool or calculator app that can help them with division.

- Ask them to practice dividing whole numbers using the tool with examples provided, reinforcing their understanding of the process.

**Step 4:** Role Play Scenarios

- Using the role play materials, each group enacts a scenario that involves division (e.g., dividing books or supplies).

- Encourage creativity in their presentations and ask them to explain how they decided to divide the items.

**Conclusion (5 minutes):**

- Summarize the key points discussed in the lesson, highlighting real-life applications of division.

- Conduct a quick interactive activity, such as a division quiz or a "think-pair-share," to reinforce learning and maintain engagement.

- Prepare learners for the next session by providing a preview of the upcoming topic, such as "Fractions and Division."

**Extended Activities:**

- Real-Life Division Journal: Ask students to keep a journal for a week, documenting instances where they use division in their daily lives. They should write a short description of each instance.

- Group Project: Learners can create a poster showing different ways division can be used in their community (e.g., at stores, schools, or local events).

- Math Game Night: Encourage learners to play division-related games at home using dice, cards, or board games that require dividing quantities.

**Teacher Self-Evaluation:**

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**WEEK 4: LESSON 5**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, students should be able to:**

1. Outline the steps for adding fractions using LCM by listing multiples.

2. Add fractions using LCM in different situations.

3.Enjoy adding fractions using LCM with various fractions.

**Key Inquiry Question(s):**

- How do we add fractions using LCM by listing multiples?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Chalkboard and chalks

- Charts

- Digital resources

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on fractions.

- Ask students to recall what they learned about fractions and why they are important.

- Introduce the day’s topic on adding fractions with LCM and write the key inquiry question on the board for reference.

**Lesson Development (25 minutes):**

**Step 1:** Understanding LCM

- Explain what LCM (Least Common Multiple) is and why it is needed when adding fractions.

- Demonstrate how to find LCM by listing multiples of two or more numbers using the chalkboard.

- Example: Find the LCM of 4 and 6 by listing their multiples.

- Multiples of 4: 4, 8, 12, 16, 20

- Multiples of 6: 6, 12, 18

- LCM of 4 and 6: 12

**Step 2:** Finding a Common Denominator

- Show how to use LCM to find a common denominator for given fractions.

- Use the example of adding 1/4 + 1/6.

- Identify the LCM (12) as the common denominator.

- Explain that we will convert each fraction to have this common denominator before adding.

- 1/4 = 3/12 and 1/6 = 2/12.

**Step 3:** Adding the Fractions

- Once the fractions have the same denominator, instruct students to add the fractions:

- 3/12 + 2/12 = 5/12.

- Explain that after adding, if possible, they should simplify the fraction (in this case, it’s already simplified).

**Step 4:** Practice in Pairs or Groups

- Provide students with different fractions to work on in pairs or small groups.

- Examples include:

- 1/3 + 1/5

- 2/8 + 1/4

- Circulate around the room to answer questions and ensure students apply the steps correctly.

**Conclusion (5 minutes):**

- Summarize the steps for adding fractions using LCM: find LCM, convert to common denominator, and add.

- Conduct a brief class poll to see if students enjoyed the activity (thumbs up/down).

- Preview the next session by asking students to think about what happens when we subtract fractions.

**Extended Activities:**

- Have students create their own set of problems involving adding fractions with various denominators using LCM and present their solutions to the class.

- Encourage students to use digital resources or apps that focus on fractions for additional practice at home.

- Create a fraction matching game where students match fractions with their equivalent fractions calculated using LCM.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 1**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for subtracting mixed fractions by subtracting whole numbers and fraction parts separately.

2.Subtract mixed fractions by subtracting whole numbers and fraction parts separately.

3. Enjoy subtracting mixed numbers by subtracting whole number and fraction parts separately.

**Key Inquiry Question(s):**

- How do you subtract mixed fractions by subtracting whole numbers and fractions parts separately?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Chalkboard and chalks

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review: Begin with a quick recap of the previous lesson on fractions, asking students about any new insights or questions they may have.

- Discussion: Guide learners to read a relevant section from the Mathematics Learner's Textbook, focusing on the procedure for subtracting mixed fractions. Encourage discussion about what mixed fractions are and how they differ from improper fractions.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Mixed Fractions

- Explain what mixed fractions are (a whole number and a proper fraction combined).

- Write an example on the board, such as 2 3/5, and demonstrate how to identify the whole number and the fractional part.

**Step 2:** Subtract the Whole Numbers

- Present an example of subtracting mixed fractions, such as 4 1/4 - 2 2/3.

- First, guide students to subtract the whole numbers: 4 - 2 = 2.

- Write this down step by step on the board while explaining the thought process.

**Step 3:** Subtract the Fractions

- Now, demonstrate how to subtract the fractional parts separately. Use the example from Step 2:

- Convert the fractions to a common denominator.

- For 1/4 and 2/3, the common denominator is 12.

- Convert: 1/4 = 3/12 and 2/3 = 8/12.

- Subtract the fractions: 3/12 - 8/12 = -5/12 (discuss handling negative results).

- Write these steps on the board and ensure students understand this process.

**Step 4:** Combine Results

- Finally, combine the results from Steps 2 and 3:

- Whole number part = 2 (from Step 2)

- Fractional part = -5/12

- Explain how mixed numbers can have negatives and how to express the final answer in the correct format.

- Encourage students to practice with a few additional examples, working together in pairs.

**Conclusion (5 minutes):**

- Summary: Recap the key steps for subtracting mixed fractions—subtracting the whole numbers first, then the fractions, and combining results.

- Interactive Activity: Conduct a quick quiz with a couple of subtraction problems on the board, asking students to raise their hands for answers, promoting engagement.

- Preview: Briefly introduce the upcoming topic of adding mixed fractions and ask students to think about how addition might differ from subtraction.

**Extended Activities:**

- Fraction Match Game: Create a matching game for students where they can pair mixed fractions with their equivalent improper fractions.

- Real-Life Applications: Have students come up with real-life scenarios where they might need to use mixed fractions, such as cooking or measuring ingredients.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 2**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Identify reciprocal of proper fractions up to a 2-digit number in different situations.

2. Calculate the reciprocal of a number by dividing one by the number.

3. Enjoy working out the reciprocal of proper fractions.

**Key Inquiry Question(s):**

- How do we write/calculate reciprocals?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Chalkboard and chalk

- Charts

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a quick review of the previous lesson on fractions.

- Engage learners by asking them what they know about fractions and if they have ever heard of the term "reciprocal."

- Guide learners to read a relevant section from the textbook that defines reciprocals and provides examples.

**Lesson Development (25 minutes):**

**Step 1:** Explanation of Reciprocals

- Introduce the concept of a reciprocal: Explain that the reciprocal of a number \( n \) is \( \frac{1}{n} \).

- Illustrate with examples on the chalkboard (e.g., reciprocal of 3 is \( \frac{1}{3} \)).

- Show how to find the reciprocal of a proper fraction (e.g., the reciprocal of \( \frac{2}{3} \) is \( \frac{3}{2} \)).

**Step 2:** Identifying Reciprocals in Pairs

- In pairs, learners will use their textbooks to find and write down the reciprocals of proper fractions provided in the text (limit to fractions like \( \frac{1}{2}, \frac{2}{5}, \frac{3}{4} \)).

- Encourage learners to share their findings with another pair and discuss any differences in their answers.

**Step 3:** Calculating Reciprocals

- Conduct a quick exercise on the chalkboard: ask learners to calculate the reciprocals of given whole numbers (e.g., 1, 2, 3, 4…).

- Show different ways to visualize these calculations (e.g., drawing the fractions).

**Step 4:** Discussing Real-World Applications

- Engage the class in discussing how reciprocals can be used in real-life situations (e.g., in cooking, mixing ingredients, or sharing items).

- Allow learners to come up with their own examples where reciprocals might apply.

**Conclusion (5 minutes):**

- Summarize the key points learned about reciprocals, including how to find them and why they are useful.

- Have a brief interactive activity where learners can pair up and quiz each other on finding reciprocals.

- Prepare learners for the next session by suggesting they think about how reciprocals relate to division and multiplication, inviting questions they might have.

**Extended Activities:**

- Reciprocal Art: Learners can create a visual art project representing different fractions and their reciprocals using colorful paper or digital tools.

- Reciprocal Word Problems: Create and solve word problems that involve finding the reciprocals of fractions in real-life scenarios, such as baking recipes or measuring distances.

- Online Practice: Use educational websites or apps that focus on fractions and reciprocals for additional practice at home.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 3**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for working out squares of fractions with a numerator of one digit and a denominator of a 2-digit number.

2. Work out squares of fractions with a numerator of one digit and a denominator of a 2-digit number in different situations.

3. Enjoy working out squares of fractions in different contexts.

**Key Inquiry Question(s):**

- How do you work out the square of fractions?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Chart

- Chalkboard and chalks

- Digital resources

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on basic fraction operations.

- Guide learners to read and discuss relevant sections from the learning resources, focusing on the definition and importance of squares of fractions.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Squares of Fractions

- Explain that finding the square of a fraction means multiplying the fraction by itself (e.g., \((\frac{a}{b})^2 = \frac{a \times a}{b \times b}\)).

- Use a visual on the chalkboard to demonstrate a simple example, such as \((\frac{2}{10})^2\).

**Step 2:** Identify the Components

- In groups, learners identify the numerator and denominator in given fractions and discuss how to square each.

- Example fractions to work with: \(\frac{3}{12}\), \(\frac{1}{25}\), etc.

**Step 3:** Performing the Calculation

- Learners use multiplication to calculate the squares of examples provided. For instance:

- Calculate \((\frac{4}{15})^2\).

- Walk around, assist, and ensure proper understanding as they compute.

**Step 4:** Share Findings

- Have groups share their results with the class, explaining the process they went through to achieve their answer.

- Focus on positive feedback and corrections if needed.

**Conclusion (5 minutes):**

- Summarize key points: how to identify the parts of a fraction, the squaring process, and real-life applications.

- Conduct a brief interactive quiz (e.g., name that fraction squared) to reinforce learning.

- Preview the next lesson—Introduction to Adding Fractions.

**Extended Activities:**

- Have students create their own fractions and calculate the squares of each, then present them to the class in a “Fraction Squared Fair”.

- Assign a worksheet with various fractions where students will have to illustrate their steps and work to find the squares.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 4**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for expressing fractions as percentages in different situations.

2.Work out questions on expressing fractions as percentages in various contexts.

3. Enjoy expressing fractions as percentages through practical applications.

**Key Inquiry Question:**

- How do we express fractions as percentages?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Chalkboard and chalks

- Charts

**Organisation of Learning:**

**Introduction (5 minutes):**

- Start the lesson by reviewing the previous topic on fractions, eliciting students' memories and understanding.

- Ask for volunteer inputs to discuss the relevance of fractions in real-life situations (e.g., cooking, shopping).

- Read and discuss the relevant sections from the Math Learner's Textbook to reinforce understanding, focusing on the key concepts related to fractions and percentages.

**Lesson Development (25 minutes):**

**Step 1:** Understanding the Concept

- Explain that a percentage is a fraction with a denominator of 100.

- Use the chalkboard to display examples, such as 25% = 25/100.

- Discuss why it is useful to convert fractions into percentages in everyday situations.

**Step 2:** Converting Fractions to Equivalent Fractions

- In pairs, have students practice converting fractions into equivalent fractions with a denominator of 100.

- Provide examples, such as converting ½ to 50/100.

- Allow students to share their answers with the class to promote interaction and correction.

**Step 3:** Calculating Percentages from Fractions

- Guide learners through some sample problems on converting various fractions to percentages.

- For example: Convert 3/4 to a percentage.

- Demonstrate the multiplication approach: (3/4) x (100/100) = 75%, and let them practice with other fractions.

**Step 4:** Real-life Applications

- Present real-life scenarios where conversions are necessary (e.g., discounts in shopping, test scores).

- Ask students to suggest other situations where they might need to use percentages, hence reinforcing the relevance of the concept.

**Conclusion (5 minutes):**

- Summarize the key points discussed during the lesson: the concept of percentages, the steps to convert fractions, and practical applications.

- Conduct a brief interactive activity, such as a quiz or a few rapid-fire questions on fractions and percentages to reinforce learning.

- Prepare learners for the next session by previewing an upcoming topic on ratio and proportion, encouraging them to think of situations where they encounter these concepts.

**Extended Activities:**

- Percentage Art Project: Have students create a pie chart with different percentages to represent their favorite fruits or activities. They can use actual fractions to shade in their charts.

- Shopping Challenge: Provide students with a budget and have them calculate the percentage of their budget they would spend if they bought several items with price labels. This can be presented in class.

- Interactive Games: Utilize online games or math apps focused on fractions and percentages to provide additional practice in a fun and engaging way.

**Teacher Self-Evaluation:**

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**WEEK 5: LESSON 5**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1.Identify the steps for converting percentages to fractions.

2. Convert percentages to fractions in different forms.

3. Enjoy the process of converting percentages to fractions.

**Key Inquiry Question:**

- How do we convert percentages to fractions?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Lesson notes

**Organization of Learning:**

**Introduction (5 minutes):**

- Begin the lesson by reviewing the previous topic discussed in class.

- Ask learners to share what they remember about fractions and percentages.

- Guide learners to read and discuss relevant sections from the textbook that introduce the idea of converting percentages into fractions.

**Lesson Development (25 minutes):**

**Step 1:** Understand what a percentage represents.

- Explain that a percentage is a way to express a number as a part of 100. For example, 25% means 25 out of 100.

**Step 2:** Write the percentage as a fraction.

- For example, to convert 40%, write it as 40/100.

**Step 3:** Simplify the fraction.

- Teach students how to simplify fractions if possible. For example, 40/100 can be simplified to 2/5 by dividing both the numerator and the denominator by 20.

**Step 4:** Practice with examples.

- Give learners different percentages to convert (e.g., 75%, 20%, 50%). Have them work in groups to convert these percentages to fractions and simplify them. Encourage them to share their answers with one another to receive feedback.

**Conclusion (5 minutes):**

- Summarize the key points discussed in class, emphasizing the steps involved in converting percentages into fractions.

- Conduct a quick interactive activity such as a "percentage to fraction challenge" where learners take turns converting a percentage called out by the teacher.

- Preview the next session by asking questions about how fractions can be related to decimals, sparking interest in the upcoming topic.

**Extended Activities:**

- Create a fun poster or infographic that illustrates various percentages and their equivalent fractions.

- Use online games or platforms that focus on converting percentages to fractions for further practice.

- Give students a real-life scenario, such as cooking or shopping, where they must use their fraction skills to convert percentages for practical application.

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 1**

**Strand:** Numbers

**Substrand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for subtracting fractions using LCM by listing multiples.

2. Subtract fractions using LCM in different situations by listing multiples.

3. Enjoy subtracting fractions using LCM.

**Key Inquiry Question(s):**

- How do we subtract fractions using LCM by listing multiples?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Digital devices (tablets/laptops)

- Charts (for LCM multiples)

- Chalkboard and chalks

**Organisation of Learning:**

**Introduction (5 minutes):**

- Start with a quick review of the previous lesson on fractions.

- Ask students to recall what they know about adding fractions to create a connection to subtraction.

- Guide learners to read and discuss relevant content in the textbook about subtracting fractions, focusing on finding a common denominator.

**Lesson Development (25 minutes):**

**Step 1:** Understanding LCM

- Explain what LCM (Least Common Multiple) means.

- Demonstrate how to find multiples of different numbers.

- Example: List the multiples of 4 and 6 on the chalkboard (4, 8, 12, 16, 20… and 6, 12, 18, 24…).

- Ask the class what the least common multiple is (12).

**Step 2:** Finding Common Denominator

- Show students how to use LCM as a common denominator for two fractions.

- Work through an example: Subtract \( \frac{1}{4} \) from \( \frac{3}{6} \).

- Find the LCM (12) and convert the fractions:

- \( \frac{1}{4} = \frac{3}{12} \)

- \( \frac{3}{6} = \frac{6}{12} \)

**Step 3:** Subtracting the Fractions

- Guide students through the subtraction:

- \( \frac{6}{12} - \frac{3}{12} = \frac{3}{12} \)

- Simplify \( \frac{3}{12} \) to \( \frac{1}{4} \) (if applicable).

- Ask learners to practice with similar examples in pairs, using different fractions.

**Step 4:** Class Sharing and Feedback

- After practicing, groups share their answers with the class.

- Provide feedback and correct any misconceptions.

- Encourage students to explain their thought processes for better understanding.

**Conclusion (5 minutes):**

- Recap the lesson by summarizing the steps for subtracting fractions using LCM.

- Ask students an interactive question based on the day’s content to reinforce learning. (E.g., "What is the LCM of 3 and 4, and how would you use it to subtract \( \frac{1}{3} \) from \( \frac{2}{4} \)?")

- Introduce the next topic lightly, such as adding fractions, to spark interest.

**Extended Activities:**

- Fraction Bingo: Create bingo cards with different fractions. Call out fractions, and students mark the equivalent fractions or simplified forms on their cards.

- Fraction Story Problems: Ask students to write their own story problems involving the subtraction of fractions, then swap with a partner to solve.

- Interactive Games: Use online platforms or apps focused on fractions for additional practice and engagement.

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 2**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, students will be able to:**

1. Outline the steps for adding mixed numbers in different situations.

2. Add mixed numbers in different situations.

3.Enjoy working out problems on the addition of mixed numbers.

**Key Inquiry Question:**

- How do we add mixed fractions by converting the fractions to improper fractions?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Charts

- Digital resources

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on fractions.

- Engage students in a brief discussion about mixed numbers and their components.

- Introduce the key inquiry question and explain its relevance to today’s lesson.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Mixed Numbers

- Define mixed numbers and improper fractions.

- Show examples of both types using the board or digital resources.

**Step 2:** Converting Mixed Numbers to Improper Fractions

- Demonstrate how to convert a mixed number (e.g., 2 3/4) into an improper fraction (e.g., 11/4).

- Provide practice problems for students to try on their own or in pairs: Convert 3 1/2, and 4 2/5 into improper fractions.

**Step 3:** Adding Improper Fractions

- Teach students how to add improper fractions (e.g., 11/4 + 5/4).

- Go through a few examples and the steps involved in adding fractions with like denominators.

**Step 4:** Converting Back to Mixed Numbers

- Explain how to convert the resulting improper fraction back to a mixed number after addition (e.g., 16/4 = 4).

- Have students work in groups to solve a final example, reporting back their answers to the class.

**Conclusion (5 minutes):**

- Summarize the key points about mixed numbers and improper fractions.

- Conduct a quick interactive quiz with questions based on the key concepts from the lesson.

- Preview the next topic: Subtracting mixed numbers, and ask students to think of questions they may have.

**Extended Activities:**

- Home Practice: Assign a few mixed numbers addition problems for homework.

- Fraction Bingo: Create bingo cards with different mixed numbers that students can turn into improper fractions to play bingo.

- Real-Life Application: Encourage students to create a recipe that includes mixed numbers (like 1 1/2 cups of sugar) and report back to the class on what they would make.

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 3**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for subtracting mixed numbers in different situations.

2. Subtract mixed numbers in different situations by converting the fractions to improper fractions.

3. Enjoy subtracting mixed numbers in different situations.

**Key Inquiry Question(s):**

- How do you subtract mixed fractions by converting the fractions to improper fractions?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Digital resources (e.g., interactive math websites)

- Charts (showing steps for subtracting mixed numbers)

- Chalkboard and chalks

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a review of the previous lesson on fractions and mixed numbers.

- Ask students to describe what they learned and relate it to today's topic.

- Guide learners to read and discuss relevant content from the learner's textbook, focusing on understanding mixed numbers and their components.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Mixed Numbers

- Explain what mixed numbers are (a whole number combined with a fraction).

- Provide examples (e.g., 3 1/2) and ask students to identify the whole number and the fraction.

**Step 2:** Converting Mixed Numbers to Improper Fractions

- Demonstrate how to convert a mixed number to an improper fraction using a specific example (e.g., Convert 2 3/4 to an improper fraction).

- Formula: (Whole Number × Denominator) + Numerator = Improper Fraction.

- For 2 3/4, it would be (2 × 4) + 3 = 8 + 3 = 11, so 2 3/4 = 11/4.

- Encourage students to practice with another example, guiding them if needed.

**Step 3:** Subtracting Improper Fractions

- Show how to subtract two improper fractions using a simple example (e.g., 11/4 - 5/4).

- Remind students of the need for a common denominator and demonstrate the subtraction process.

- Let students work in pairs to practice subtracting mixed numbers by converting them first.

**Step 4:** Create Your Own Problems

- Ask students to create their own mixed number subtraction problem in their groups.

- Have each group share their problem and solution with the class. This promotes discussion and peer learning.

**Conclusion (5 minutes):**

- Summarize the key points covered in the lesson: defining mixed numbers, converting to improper fractions, and subtracting them.

- Conduct a quick interactive Kahoot or classroom quiz to reinforce the main topics.

- Preview the next lesson's focus on adding mixed numbers, prompting students to think about how these operations relate.

**Extended Activities:**

- Encourage students to create a visual poster that outlines the steps for converting and subtracting mixed numbers.

- Offer practice worksheets that include a variety of mixed number subtraction problems for homework.

- Suggest online math games that reinforce fraction skills, such as "Pizza Fractions" or "Fraction Frenzy."

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 4**

**Strand:** Numbers

**Sub Strand:** Fractions

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for adding mixed fractions by adding whole numbers and fraction parts separately.

2. Add mixed fractions by adding whole numbers and fraction parts separately.

3. Enjoy adding mixed fractions through engaging activities.

**Key Inquiry Question:**

- How do we add mixed fractions by adding whole numbers and fraction parts separately?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Chalks and chalkboard

**Organization of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on fractions and their components.

- Discussion: Guide learners to read and discuss relevant content from the textbook, focusing on mixed fractions. Encourage them to share any prior knowledge they have about the topic.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Mixed Fractions

- Explain what mixed fractions are using visuals (e.g., drawings or manipulatives). For example, show 1 1/2 and discuss its components (1 whole and 1/2).

- Ask learners to identify mixed fractions in real-life contexts (e.g., in cooking).

**Step 2:** Breaking it Down

- Introduce the method of adding mixed fractions: first add the whole numbers, then add the fractions.

- Use a simple example on the board, such as:

\[

1 \frac{1}{3} + 2 \frac{2}{5}

\]

- Breakdown the addition:

- Add the whole numbers: 1 + 2 = 3

- Add the fractions: \(\frac{1}{3} + \frac{2}{5}\)

- Remind students how to find a common denominator for adding fractions.

**Step 3:** Practice in Groups

- Group students into pairs or small groups and provide them with mixed fractions to add. For example:

- \(2 \frac{1}{4} + 3 \frac{3}{8}\)

- Encourage them to discuss their methods as they work.

**Step 4:** Sharing and Feedback

- Have groups present their answers to the class, sharing their calculations and methods.

- Provide constructive feedback, clarifying any misunderstandings.

**Conclusion (5 minutes):**

- Summarize: Recap the key points on how to add mixed fractions, emphasizing the steps of adding whole numbers and fractions separately.

- Interactive Activity: Hand out a quick quiz or game where students solve more mixed fraction problems as a class, reinforcing what they learned.

- Preview: Give learners a hint about the next lesson on improper fractions, encouraging them to think of where they might encounter these in stories or real life.

**Extended Activities:**

- Word Problems: Create word problems involving mixed fractions for students to solve at home.

- Fraction Art: Have students create art pieces using mixed fractions, such as fraction pizzas or cakes, illustrating the concepts visually.

- Games: Suggest online math games that focus on adding fractions to reinforce the skill in a fun way.

**Teacher Self-Evaluation:**

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**WEEK 6: LESSON 5**

**Strand:** Numbers

**Sub Strand:** Decimals

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Identify decimals up to ten thousandths in different situations.

2. Work out the place value of decimals up to ten thousandths using place value apparatus.

3.Enjoy working out the place value of decimals up to ten thousandths.

**Key Inquiry Question(s):**

- How do we find the place value of decimals up to ten thousandths?

**Learning Resources:**

- Mathematics Learner's Textbook

- Place Value Apparatus (e.g., base ten blocks, number lines)

- Teacher's Guide

- Charts illustrating place values

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin the lesson with a quick review of the previous topic (whole numbers).

- Introduce decimals by discussing what they are and where we might see them in real life (money, measurement, etc.).

- Encourage learners to read a brief section in the textbook about decimals and discuss their understanding with the class. Highlight the importance of decimals in everyday situations.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Decimals

- Introduce decimals up to ten thousandths (e.g. 0.1234).

- Explain how to read and write decimals, emphasizing the place value positions (tenths, hundredths, thousandths, ten thousandths).

- Use a chart to visually represent each place value and its significance.

**Step 2:** Place Value Apparatus

- Distribute place value apparatus and guide learners in pairs to represent decimals up to ten thousandths.

- Show examples (e.g., 0.5678) and ask students to build the number using the apparatus, indicating each place value.

- Encourage students to discuss their representations and how they see each place value contributing to the whole number.

**Step 3:** Identifying Decimals in Different Situations

- Provide examples of real-world scenarios where decimals are used (e.g., prices, measurements).

- In groups, ask students to come up with their own examples and present them to the class.

- Discuss how these decimals are relevant in daily life.

**Step 4:** Practice Activity

- Hand out a short worksheet with different decimal numbers.

- Ask students to write the place value for the digit in a selected position (e.g., What is the place value of 7 in 0.0734?).

- Encourage students to work independently and then review the answers as a class.

**Conclusion (5 minutes):**

- Summarize the key points: definitions, place values, and real-world connections of decimals.

- Conduct a brief interactive game where students can quiz each other about place values.

- Preview the next session which will focus on comparing and ordering decimal numbers.

**Extended Activities:**

- Create a "Decimal Journal": Have students keep a journal for a week where they record prices of items they find, measurements of ingredients while cooking, or anything that involves decimals.

- Decimal Scavenger Hunt: Organize an activity where students find objects around the classroom or school that can be represented in decimal form and share them with the class.

- Interactive Decimal Games: Provide links to online games that reinforce decimal learning, such as ordering decimals or matching decimals to their written forms.

**Teacher Self-Evaluation:**

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**WEEK 7: LESSON 1**

**Strand:** Numbers

**Sub Strand:** Decimals

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Identify the steps for rounding off decimals up to 3 decimal places.

2. Round off decimals up to 3 decimal places in different situations.

3. Enjoy rounding off decimals.

**Key Inquiry Question:**

- How do we round off decimals up to 3 decimal places?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Charts

- Chalkboard and chalks

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing the previous lesson on decimals, asking students to recall the main points about decimal places.

- Guide learners to read and discuss the relevant content from the Mathematics Learner's Textbook, focusing on understanding decimal rounding concepts. Encourage students to express what they already know about rounding numbers.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Rounding Off

- Explain what rounding off means and why it is useful. Use a simple example, such as rounding 2.456 to 2.46, to illustrate the process.

- Introduce the terms you will be using: "tenths," "hundredths," and "thousandths."

**Step 2:** Identifying the Rounding Steps

- Present the steps on the chalkboard:

1. Look at the digit in the next decimal place (one place to the right).

2. If it is 5 or more, round up the digit in your target place by 1.

3. If it is less than 5, keep the target digit the same.

4. Change all digits to the right of your target place to zero or drop them.

- Have students write the steps in their notebooks.

**Step 3:** Group Work on Rounding

- Divide the class into pairs or small groups. Provide each group with a set of decimal numbers to round to three decimal places. Examples:

- 3.768

- 5.4321

- 0.12345

- In their groups, students will:

- Discuss how to apply the steps.

- Work together to round the assigned numbers.

- Write down their rounded results.

**Step 4:** Sharing Findings

- Bring the class back together and ask each group to share one decimal number they worked on and explain the rounding steps they took to arrive at their answer.

- Encourage feedback and questions from other groups to enhance learning.

**Conclusion (5 minutes):**

- Summarize the key points of the lesson, reiterating the steps for rounding off decimals and the importance of this skill.

- Conduct a brief interactive activity, such as a quick rounding quiz where students raise their hands for the answer.

- Prepare learners for the next session by discussing what they will learn about comparing and ordering decimals.

**Extended Activities:**

- Rounding Relay: Create a fun relay where students race to round off decimals on the board, working in teams.

- Real-life Rounding: Have students find examples in their daily life where rounding off decimals applies, like prices or measurements, and present them in the next class.

- Decimal Rounding Bingo: Create bingo cards with decimals that students can round, calling out numbers for them to mark their cards accordingly.

**Teacher Self-Evaluation:**

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**WEEK 7: LESSON 2**

**Strand:** Numbers

**Sub Strand:** Decimals

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline steps for converting fractions to decimals in different situations.

2.Convert fractions to decimals using a square/rectangular grid.

3. Enjoy converting fractions to decimals using a square grid.

**Key Inquiry Question:**

- How do we convert fractions to decimals using a square grid?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide Lesson Notes

- Illustration Charts

- Coloured Pencils

- Square Grids

- Chalkboard and Chalks

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on fractions and decimals.

- Ask learners what they remember about fractions.

- Introduce the topic by discussing why converting fractions to decimals is important in real life (e.g., money, measurements).

- Briefly highlight what will be learned today.

**Lesson Development (25 minutes):**

**Step 1:** Understanding the Concept

- Explain that a fraction represents part of a whole, and decimals are another way to show parts of a whole.

- Illustrate a simple fraction (like 1/2) using a square grid.

**Step 2:** Visualizing Fractions on a Square Grid

- Demonstrate how to color in parts of a square grid to represent a fraction.

- For example, for 3/4, show 3 out of 4 sections colored. This visually represents the fraction.

**Step 3:** Converting to Decimal Using Grids

- Guide learners to convert colored fractions on their own grids. For instance, ask them to find the decimal equivalent of 1/2 and 3/5 by using their grids.

- Use examples on the board and let them work collaboratively in pairs.

**Step 4:** Sharing and Assessing Answers

- After working through the examples, ask pairs to share their findings with the class.

- Conduct a brief floor discussion, allowing some pairs to present their answers and explain their thinking.

**Conclusion (5 minutes):**

- Summarize key points about converting fractions to decimals and the use of square grids.

- Reinforce the key inquiry question and ask students to reflect on how grids helped their understanding.

- Briefly discuss what will be covered in the next lesson, such as comparing decimals and fractions.

**Extended Activities:**

- Create a small project where learners collect real-life items (like fruit or candy) and convert the fractions of each type (for example, 2 apples out of 5 total fruits) into decimals using square grids.

- Encourage students to practice at home by converting different fractions seen in grocery ads to decimals using similar grids.

**Teacher Self-Evaluation:**

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**WEEK 7: LESSON 3**

**Strand:** Numbers

**Sub Strand:** Decimals

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for adding decimals up to 4 decimal places in different situations.

2.Add decimals up to 4 decimal places using shared place value apparatus.

3.Enjoy adding decimals up to 4 decimal places using shared place value apparatus.

**Key Inquiry Question:**

- How do we add decimals up to 4 decimal places using place value apparatus?

**Learning Resources:**

- Place Value Apparatus (blocks or counters)

- Decimal Place Value Chart

- Mathematics Learners Textbook

- Teacher's Guide

- Chalkboard and chalks

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on decimals, discussing their importance and their usage in real life (e.g., money, measurements).

- Briefly present the topic for today, focusing on the addition of decimals, and encourage students to share what they already know about adding decimals using place value.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Place Value

- Begin by reviewing the place value for decimals (tenths, hundredths, thousandths, ten-thousandths). Use a decimal place value chart to visualize this.

- Have students identify the place value of each digit in the decimals they will be adding.

**Step 2:** Aligning Decimals

- Show how to write decimals one under the other, ensuring decimal points are aligned vertically (e.g., when adding 2.345 and 1.678, align digits as so:

```

2.345

+ 1.678

--------

```

**Step 3:** Adding Decimals

- Teach students to start adding from the rightmost column (the smallest place value) to the left, carrying over any extra value as needed (reminding them about carrying in whole number addition). For example, in the previous example:

```

2.345

+ 1.678

--------

4.023

```

**Step 4:** Use of Place Value Apparatus

- In pairs or small groups, provide students with place value apparatus to physically model adding decimals.

- Have learners solve example problems using the apparatus, encouraging them to talk through their thought processes with their partners.

**Conclusion (5 minutes):**

- Summarize the main points of the lesson: the steps for adding decimals, the importance of aligning the decimal points, and using the place value apparatus.

- Conduct a brief interactive quiz where students can answer questions about how to add decimals, reinforcing the key concepts learned.

- Offer a preview of the next session’s topic, which may focus on decimal subtraction or real-world applications of decimals, posing questions to consider for next time.

**Extended Activities:**

- Decimal Shopping: Create a mock store with prices that include decimals. Have students create their own shopping lists, find the total cost, and add up their expenses using place value tools.

- Decimal Art: Have students create a piece of art (like a mosaic) where they use decimal values as a representation of colors or shapes, and then calculate the total value of their artwork using addition of decimals.

- Decimal Journal: Encourage students to keep a weekly journal where they record daily expenses and practice adding those amounts at the end of the week.

**Teacher Self-Evaluation:**

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**WEEK 7: LESSON 4**

**Strand:** Numbers

**Sub Strand:** Decimals

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for subtracting decimals up to 4-decimal places in different situations.

2. Subtract decimals up to 4-decimal places using place value apparatus.

3. Enjoy subtracting decimals up to 4-decimal places using place value apparatus.

**Key Inquiry Question(s):**

- How do we subtract decimals up to 4-decimal places using shared place value apparatus?

**Learning Resources:**

- Place value apparatus (base ten blocks, decimal squares).

- Mathematics Learner's Textbook.

- Teacher's Guide.

- Digital resources (interactive decimal games, videos).

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson focused on adding decimals. Ask students questions such as:

- What did we learn about decimals in our last class?

- Can anyone remind us how we added decimals?

- Guide learners to read and discuss the relevant content from the learning resources, emphasizing the understanding of subtracting decimals.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Place Value

- Introduce the concept of place value using the place value apparatus.

- Have students identify the different decimal places (tenths, hundredths, thousandths, ten-thousandths) as they examine the apparatus.

**Step 2:** The Subtraction Process

- Explain the steps for subtracting decimals:

- Line up the decimals vertically (ensuring decimal points are aligned).

- Start subtracting from the rightmost digit (the smallest place value) to the left.

- Borrow from the next higher place value if needed when the top digit is smaller than the bottom digit.

- Demonstrate this process using an example on the board.

**Step 3:** Group Practice

- In pairs/groups, let students practice subtracting decimals using place value apparatus. Provide specific problems to solve so they can apply the steps learned. Example: Subtract 12.3456 - 3.1125.

**Step 4:** Individual Practice

- Each student will independently solve a set of subtraction problems involving decimals using the apparatus.

- Encourage learners to explain each step of their process as they solve the problems.

**Conclusion (5 minutes):**

- Summarize the key points:

- The importance of lining up decimals, how to borrow, and ensuring accuracy when subtracting.

- Conduct a brief interactive activity—like a quick quiz or game where students can answer subtraction problems using a digital tool or through a hands-up method.

- Preview upcoming topics such as adding and subtracting mixed numbers to get learners interested.

**Extended Activities:**

- Decimals Shopping Activity: Have students create a shopping list with prices that include decimals. They can then practice subtracting the total price from a budget to find out how much money they would have left.

- Decimal Games: Utilize online games that focus on decimal arithmetic to reinforce skills in a fun, interactive way.

**Teacher Self-Evaluation:**

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**WEEK 7: LESSON 5**

**Strand:** Numbers

**Sub Strand:** Decimals

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for converting decimals to fractions in different situations.

2. Convert decimals to fractions in different situations.

3. Enjoy converting decimals to fractions in different situations.

**Key Inquiry Question:**

- How do we convert decimals to fractions using a square or rectangular grid?

**Learning Resources:**

- Mathematics Learner's Textbook

- Lesson notes

- Charts

- Teacher's Guide

- Square grids

- Coloured pencils

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin the lesson by reviewing what was learnt in the previous session about fractions and decimals.

- Ask students to recall any experiences they had with decimals.

- Introduce the idea of converting decimals to fractions using the square/rectangular grid. Guide students to read and discuss the relevant content from the learning resources provided.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Decimals

- Explain what decimals are and where they are commonly used.

- Use the square grid to visually represent a decimal (e.g., 0.75 as 75 out of 100 parts).

**Step 2:** Identifying the Parts of the Decimal

- Discuss how to read a decimal and split it into its numeral parts (e.g., 0.25 can be read as 25 tenths).

- Guide students to draw examples on their grids to reinforce the concept visually.

**Step 3:** Converting with Square Grids

- Demonstrate how to convert a decimal to a fraction using the square/rectangular grid.

- For instance, if the decimal is 0.5, shade half of the square/rectangular grid and discuss how it equals 1/2.

**Step 4:** Group Practice

- In pairs or small groups, assign specific decimals for students to convert into fractions using their square grids.

- Allow them to work through the problems together, discussing their methods, and write down their findings.

**Conclusion (5 minutes):**

- Summarize the key points of converting decimals to fractions using the steps learned.

- Conduct a brief interactive activity (e.g., a quick quiz or a game) to reinforce the main topics. Ask students to share their insights about the process and what they enjoyed.

- Prepare students for the next session by previewing upcoming topics related to fractions or word problems involving decimals.

**Extended Activities:**

- For homework, have students create a poster that illustrates the decimal to fraction conversion process using real-life examples (like money or measurements).

- Provide additional grid paper for them to practice converting decimals not covered in class.

- Encourage students to find examples of decimals in daily life (like prices, measurements) and convert them into fractions.

**Teacher Self-Evaluation:**

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**WEEK 9: LESSON 1**

**Strand:** Numbers

**Sub Strand:** Inequalities

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Identify and define inequality symbols.

2.Write inequalities using numbers and symbols.

3.Show enthusiasm in expressing real-life scenarios as inequalities.

**Key Inquiry Question(s):**

- What is the meaning of inequality symbols > and

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Flashcards with inequality symbols

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on basic operations with numbers.

- Guide learners to read and discuss relevant content from the learning resources, focusing on understanding inequality symbols and their meanings.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Inequality Symbols

- Start with a brief explanation of inequality symbols, emphasizing their meanings: ">" means greater than, and "<" means less than.

- Use flashcards to display each symbol and ask students to recall real-life situations where these symbols might be used (e.g., age differences, temperatures).

**Step 2:** Matching Symbols to Verbal Expressions

- In pairs, learners will match written inequality statements to their verbal expressions. For example, "5 < 10" can be matched with "5 is less than 10."

- Afterward, ask groups to share examples and explanations one symbol and its matching expression.

**Step 3:** Practicing Writing Inequalities

- Provide learners with different real-life scenarios, such as comparing scores, ages, or heights, and guide them to write the corresponding inequalities.

- Encourage learners to come up with their own examples and write them on the board.

**Step 4:** Class Discussion

- Facilitate a discussion about the importance of inequalities in everyday life. Ask students for any additional examples they can think of.

- Encourage learners to express their thoughts enthusiastically about how inequalities relate to their lives.

**Conclusion (5 minutes):**

- Summarize the key points of the lesson: the meaning of inequality symbols, how to write them, and their applications.

- Conduct a brief interactive activity, such as a quick game where students match numbers and inequality symbols on the board.

- Prepare learners for the next session by hinting at upcoming topics, such as solving inequalities.

**Extended Activities:**

- Real-Life Inequalities Project: Assign students to interview family or friends about various inequalities they encounter (e.g., age differences, scores, or prices) and present their findings in a small poster format.

- Inequality Scavenger Hunt: Create a scavenger hunt around the classroom or school where students find and document items that can be compared using inequalities (e.g., {fewer than 20 pencils, more than 5 chairs}).

**Teacher Self-Evaluation:**

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**WEEK 9: LESSON 2**

**Strand:** Numbers

**Sub-Strand:** Inequalities

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Identify variables in inequalities.

2.Form simple inequalities in one unknown involving real-life situations.

3. Develop curiosity in exploring how variables represent unknowns in inequalities.

**Key Inquiry Question(s):**

- How do we form inequalities in one unknown?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Digital resources (e.g., educational math websites)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a brief review of the previous lesson on numbers and their operations.

- Ask students to recall any real-life situations where they might need to compare quantities or make decisions based on amounts (e.g., shopping, saving money).

- Guide learners to read and discuss the relevant content on inequalities from the learning resources, emphasizing the definitions and relevance of key concepts.

**Lesson Development (25 minutes):**

**Step 1:** Analyzing Word Problems

- Break students into pairs or small groups.

- Provide them with word problems that describe scenarios using inequalities (e.g., "You want to buy X number of apples, which costs $2 each. You have $10. How many apples can you buy?" - leading to the inequality 2X ≤ 10).

- Encourage students to identify the variables in their problems (e.g., X) and discuss what they represent.

**Step 2:** Forming Inequalities

- Guide the students in their groups to translate the identified variables into inequalities in one unknown based on their word problems.

- Offer examples and ask guiding questions to help them understand how to express the situation mathematically.

- Have students write down their inequalities on a piece of paper.

**Step 3:** Sharing Findings

- Invite groups to share their inequalities with the class.

- Encourage a brief discussion about the different inequalities formed and any variations in their approaches.

**Step 4:** Class Assessment and Feedback

- Provide constructive feedback on a few examples shared.

- Ask students to reflect on the process of forming inequalities and the significance of the variables used.

**Conclusion (5 minutes):**

- Summarize the key points learned about variables and inequalities.

- Reinforce the importance of understanding inequalities in everyday life by relating back to the real-life scenarios discussed.

3. Conduct a brief interactive activity, such as a quick quiz or a “Guess My Inequality” game, to reinforce the main topics.

- Prepare learners for the next session by giving them preview questions to consider, such as, "What are other ways we can represent inequalities?"

**Extended Activities:**

- Inequality Journal: Have students maintain a journal where they write down real-life scenarios each week that could be represented as inequalities.

- Inequality Art Project: Ask students to create a poster that visually represents a word problem and its corresponding inequality.

- Online Games: Introduce students to digital resources or online games that reinforce the concept of inequalities in a fun, interactive way.

**Teacher Self-Evaluation:**

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**WEEK 9: LESSON 3**

**Strand:** Numbers

**Sub Strand:** Inequalities

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1.Outline the rules for solving inequalities.

2. Solve simple inequalities in one unknown involving real-life situations.

3.Enjoy solving inequalities accurately.

**Key Inquiry Question(s):**

- How do we solve simple inequalities?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin the lesson by reviewing previous concepts related to numbers and inequalities.

- Encourage the learners to share what they remember about inequalities and write their ideas on the board.

- Guide learners to read a few paragraphs on inequalities in their Mathematics Learner's Textbook to refresh their knowledge and discuss the important concepts with a partner.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Inequalities

- Explain what an inequality is and how it differs from an equation.

- Provide examples on the board (e.g., x + 3 < 10) and explain the symbols used (>, <, ≥, ≤).

**Step 2:** Rules for Solving Inequalities

- Outline the rules for solving inequalities, such as:

- When you add or subtract the same number from both sides of the inequality, the inequality remains the same.

- When you multiply or divide both sides by a positive number, the inequality remains the same.

- When you multiply or divide by a negative number, you must flip the inequality sign.

- Provide examples that illustrate these rules and have students practice writing down the rules in their notebooks.

**Step 3:** Guided Practice

- In groups or pairs, learners work with the teacher to solve simple inequalities using addition and subtraction.

- Provide a few examples on the board and ask pairs to solve them together. Encourage them to explain their thinking to each other.

**Step 4:** Real-Life Application

- Present a real-life scenario (e.g., "You have $50 and want to buy some books that cost $8 each. How many can you buy?") and have students formulate and solve the inequality (8x ≤ 50).

- Discuss the solution as a class and consider how inequalities can be applied in everyday life.

**Conclusion (5 minutes):**

- Summarize the key points learned about inequalities and the steps for solving them.

- Conduct a brief interactive activity, such as a "Inequality Challenge," where students quickly solve questions on the board as a team to reinforce learning.

- Preview the next session's topic on graphing inequalities and pose the question for consideration: "How can we visualize inequalities on a number line?"

**Extended Activities:**

- Assign students to create a mini-project where they find and present examples of inequalities from real life, such as budgeting or sports statistics.

- Suggest an online game or app focused on solving inequalities that learners can explore at home for extra practice.

**Teacher Self-Evaluation:**

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**WEEK 9: LESSON 4**

**Strand:** Numbers

**Sub Strand:** Inequalities

**Learning Outcomes:**

**- By the end of the lesson, students should be able to:**

1. Identify real-life scenarios where inequalities apply.

2. Form and solve inequalities from real-life problems.

3. Appreciate the practical use of inequalities in everyday life.

**Key Inquiry Question:**

- Where do we use inequalities in real-life situations?

**Learning Resources:**

- Mathematics learner's textbook

- Teacher's Guide

**Organisation of Learning:**

**Introduction (5 Minutes):**

- Begin by reviewing the previous lesson on numbers and their properties.

- Guide learners to read and discuss sections related to inequalities in their textbooks, emphasizing key concepts such as greater than, less than, and equal to.

**Lesson Development (25 Minutes):**

**Step 1:** Identify Real-Life Scenarios

- In groups or pairs, learners brainstorm and discuss different real-life situations where inequalities are applicable.

- Examples may include comparing ages, costs of items, or temperatures.

- Each group will write their scenarios on a whiteboard or chart paper, ensuring everyone contributes.

**Step 2:** Forming Inequalities

- Select a few scenarios from each group and guide students to translate these scenarios into mathematical inequalities.

- For example, if one group discusses ages, students could form an inequality like “Age of Person A > Age of Person B.”

- Scaffold students to think about how to represent different situations mathematically.

**Step 3:** Solving Inequalities

- Present a sample real-life problem that can be solved with an inequality.

- For instance, “Sarah has at least $15 to spend on snacks. If each snack costs $3, how many snacks can she buy?”

- Guide students to formulate the inequality (3x ≤ 15) and solve it together.

**Step 4:** Class Sharing

- Have each group share one of their inequalities and the solution process with the class.

- Encourage peer questions or comments to promote discussion and collaboration.

**Conclusion (5 Minutes):**

- Summarize the key points discussed during the lesson, including the importance of understanding and using inequalities in real life.

- Conduct a brief interactive activity, such as a true/false quiz on statements involving inequalities to reinforce understanding.

- Provide a preview of the next lesson, focusing on how inequalities can be represented on a number line, and suggest students think of more real-life situations involving inequalities.

**Extended Activities:**

- Real-Life Scenarios Journal: Encourage students to keep a journal for a week where they record instances of inequalities in their daily lives (e.g., in shopping, sports, or school).

- Inequality Art Project: Have students create an art piece that visually represents an inequality they came up with, using pictures, diagrams, or symbols.

- Inequality Game Creation: In pairs, students can create a simple board game where players must solve inequalities to advance, promoting collaborative learning and practical application.

**Teacher Self – Evaluation:**

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**WEEK 9: LESSON 5**

**Strand:** Numbers

**Sub Strand:** Inequalities

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for simplifying inequalities in one unknown.

2. Simplify inequalities in one unknown involving real-life situations.

3.Show confidence in simplifying inequalities.

**Key Inquiry Question(s):**

- How do we simplify inequalities in one unknown?

**Learning Resources:**

- Teacher's Guide

- Mathematics Learner's Textbook

- Cards and Charts

**Organisation of Learning:**

**Introduction (5 minutes):**

- Start with a review of the previous lesson on basic algebra and equations.

- Ask learners what they know about inequalities. Prompt a discussion using questions to guide understanding and help them connect previous knowledge to the new topic.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Inequalities

- Define inequalities and give examples (e.g., x < 5, y ≥ 3).

- Explain the symbols used in inequalities (<, >, ≤, ≥) with visuals on the board.

**Step 2:** Steps to Simplify Inequalities

- Discuss the steps for simplifying inequalities:

1. Identify the inequality symbol.

2. Treat the inequality like an equation, applying the same operations to both sides.

3. If you multiply or divide by a negative number, flip the inequality symbol.

4. Isolate the variable on one side.

- Provide a group activity in which students use cards or charts illustrating these steps.

**Step 3:** Real-Life Application

- Provide real-life scenarios involving inequalities, such as budgeting (e.g., "You can spend less than $50 on snacks").

- Have students create their own inequalities based on a situation they encounter.

**Step 4:** Peer Sharing and Discussion

- In groups or pairs, learners simplify a set of inequalities using cards or charts and share their findings and approaches with the class.

- Encourage discussions on different methods used to arrive at the simplified inequalities.

**Conclusion (5 minutes):**

- Summarize the key points covered: definition of inequalities, steps for simplification, and real-life applications.

- Conduct an interactive quiz (using thumbs up/down or a quick game) to reinforce learning.

- Preview the next lesson on combining inequalities and discuss questions they might think about at home.

**Extended Activities:**

- Homework Assignment: Provide students with a worksheet containing both practice inequalities and real-life scenarios to create their own inequalities.

- Group Project: Organize a mini-project where students can survey classmates about different interests and create inequalities based on the data collected.

- Math Journals: Have students write a short reflection on how inequalities can be useful in daily life.

**Teacher Self-Evaluation:**

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**WEEK 10: LESSON 1**

**Strand:** Numbers

**Sub Strand:** Inequalities

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Outline the steps for simplifying inequalities in one unknown.

2.Simplify inequalities in one unknown involving real-life situations.

3. Show confidence in simplifying inequalities.

**Key Inquiry Question(s):**

- How do we simplify inequalities in one unknown?

**Learning Resources:**

- Teacher's Guide

- Mathematics Learner's Textbook

- Cards and Charts

**Organisation of Learning:**

**Introduction (5 minutes):**

- Start with a review of the previous lesson on basic algebra and equations.

- Ask learners what they know about inequalities. Prompt a discussion using questions to guide understanding and help them connect previous knowledge to the new topic.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Inequalities

- Define inequalities and give examples (e.g., x < 5, y ≥ 3).

- Explain the symbols used in inequalities (<, >, ≤, ≥) with visuals on the board.

**Step 2:** Steps to Simplify Inequalities

- Discuss the steps for simplifying inequalities:

1. Identify the inequality symbol.

2. Treat the inequality like an equation, applying the same operations to both sides.

3. If you multiply or divide by a negative number, flip the inequality symbol.

4. Isolate the variable on one side.

- Provide a group activity in which students use cards or charts illustrating these steps.

**Step 3:** Real-Life Application

- Provide real-life scenarios involving inequalities, such as budgeting (e.g., "You can spend less than $50 on snacks").

- Have students create their own inequalities based on a situation they encounter.

**Step 4:** Peer Sharing and Discussion

- In groups or pairs, learners simplify a set of inequalities using cards or charts and share their findings and approaches with the class.

- Encourage discussions on different methods used to arrive at the simplified inequalities.

**Conclusion (5 minutes):**

- Summarize the key points covered: definition of inequalities, steps for simplification, and real-life applications.

- Conduct an interactive quiz (using thumbs up/down or a quick game) to reinforce learning.

- Preview the next lesson on combining inequalities and discuss questions they might think about at home.

**Extended Activities:**

- Homework Assignment: Provide students with a worksheet containing both practice inequalities and real-life scenarios to create their own inequalities.

- Group Project: Organize a mini-project where students can survey classmates about different interests and create inequalities based on the data collected.

- Math Journals: Have students write a short reflection on how inequalities can be useful in daily life.

**Teacher Self-Evaluation:**

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**WEEK 10: LESSON 2**

**Strand:** Measurements

**Sub Strand:** Length

**Specific Learning Outcomes:**

**- By the end of the lesson, the learners should be able to:**

1.Identify the relationship between millimeters (mm) and centimeters (cm) in different situations.

2. Establish the relationship between millimeters and centimeters through measurement.

3. Acknowledge the relationship between millimeters and centimeters in practical contexts.

**Key Inquiry Question(s):**

- What is the relationship between cm and mm?

**Learning Resources:**

- Mathematics Learner's Textbook

- Rulers marked in both cm and mm

- Objects of varying lengths (pencils, erasers, books, etc.)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a brief review of the previous lesson on units of measurement.

- Ask students to recall what they know about centimeters and millimeters.

- Guide learners to read and discuss relevant content from the Mathematics Learner's Textbook, emphasizing the key concepts related to cm and mm.

**Lesson Development (25 minutes):**

**Step 1:** Introduction of Measurement Units

- Explain that 1 centimeter (cm) is equal to 10 millimeters (mm) and how this is useful for measuring different objects.

- Demonstrate using the ruler how to measure an object in centimeters and convert it to millimeters.

**Step 2:** Group Activity: Measuring Objects

- Divide the class into pairs or small groups.

- Provide each group with a ruler and a selection of objects.

- Instruct them to measure the length of each object in centimeters and then convert that measurement to millimeters.

- Each group should record their measurements.

**Step 3:** Discussing Measurements

- After the measurement activity, gather students together.

- Ask each group to share their findings.

- Facilitate a discussion on the differences observed in measurements and how they relate to each other (e.g., if an object measures 5 cm, what does it measure in mm?).

**Step 4:** Reinforcing the Relationship

- Use a whiteboard to summarize the relationship between cm and mm.

- Present a few examples illustrating the conversion between the two units.

- Encourage students to ask questions and clarify any misunderstandings.

**Conclusion (5 minutes):**

- Summarize key points: the relationship between cm and mm, the conversion process, and practical applications.

- Conduct a brief interactive activity, such as matching objects to their length in cm and mm or a quick quiz.

- Prepare learners for the next session by previewing upcoming topics such as converting units and larger measurements.

**Extended Activities:**

- Home Activity: Ask students to measure different items at home (like furniture or books) and convert their measurements from cm to mm. They can create a mini-report of their findings.

- Classroom Activity: Prepare a 'measurement scavenger hunt' where students find items around the classroom or school, measure them, and report back to share their findings with the class.

- Art Integration: Have students create a "Measurement Poster" where they illustrate different lengths and their equivalents in cm and mm, enhancing their understanding through artistic expression.

**Teacher Self-Evaluation:**

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**WEEK 10: LESSON 3**

**Strand:** Measurements

**Sub Strand:** Length

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Explain how to convert centimeters to millimeters.

2. Convert centimeters to millimeters in different situations.

3. Enjoy converting centimeters to millimeters in different situations.

**Key Inquiry Question:**

- How do we convert cm to mm in different situations?

**Learning Resources:**

- Rulers marked in cm and mm

- Mathematics learner's Textbook

- Teacher's Guide

- Objects of varying lengths

- Conversion chart (1 cm = 10 mm)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing the previous lesson about measurements. Ask students questions about what they learned.

- Use the Mathematics learner's Textbook to read a section related to length measurement. Discuss the importance of converting between units, especially cm and mm.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Conversion

- Introduce the concept of converting centimeters to millimeters using the conversion chart. Explain that 1 centimeter equals 10 millimeters.

- Provide examples of simple conversions (e.g., 2 cm = 20 mm). Discuss why this conversion is useful in real-life scenarios.

**Step 2:** Hands-On Practice

- Divide students into pairs and give each pair a ruler marked in cm and mm.

- Have them measure various objects in centimeters and convert those measurements to millimeters.

- Encourage them to write both measurements down for practice.

**Step 3:** Problem Solving

- Present learners with word problems like: “If a pencil is 5 cm long, how many millimeters is that?”

- Direct each group to solve at least 3 different problems together, discussing their methods and reasoning with each other.

**Step 4:** Sharing and Discussing Results

- Have each pair share one of their problems and solutions with the class.

- Encourage discussion on the different objects they measured and how converting made them more practical or easier to understand.

**Conclusion (5 minutes):**

- Recap the key points about how to convert centimeters to millimeters and why it is important.

- Conduct a brief interactive quiz where students can respond to conversion questions using mini whiteboards, reinforcing their understanding.

- Tell students what they can look forward to in the next session, such as exploring other units of measurement like meters and inches.

**Extended Activities:**

- Measurement Scavenger Hunt: Have students find various objects around the classroom or at home, measure them in centimeters using their rulers, and then convert those measurements into millimeters. They can present their findings in a fun poster format.

- Create a Measurement Chart: Students can create a chart on a poster board that lists common objects and their lengths in both centimeters and millimeters. They can decorate it and display it in the classroom for others to see.

**Teacher Self-Evaluation:**

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**WEEK 10: LESSON 4**

**Strand:** Measurements

**Sub Strand:** Length

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Explain how to convert mm to cm in different situations.

2. Convert mm to cm in different situations.

3. Enjoy converting millimeters to centimeters in different situations.

**Key Inquiry Question:**

- How do we convert mm to cm in different situations?

**Learning Resources:**

- Mathematics learner's book

- Conversion chart

- Rulers

- Objects of varying lengths (pencils, books, etc.)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing the previous lesson on measurements, focusing on the importance of knowing different units.

- Introduce the concept of millimeters and centimeters. Ask students if they have ever seen objects measured in millimeters.

- Guide learners to read the relevant section in their math book about measurement conversions.

**Lesson Development (25 minutes):**

**Step 1:** Understanding the Conversion

- Discuss with students that 1 centimeter is equal to 10 millimeters.

- Use a conversion chart to show how millimeters relate to centimeters.

- Encourage students to think of real-life examples where they might use both measurements.

**Step 2:** Group Activity - Measuring Objects

- Organize students into small groups or pairs.

- Provide each group with rulers and various objects to measure.

- Challenge students to measure the lengths of the objects in millimeters and then convert those measurements to centimeters together.

**Step 3:** Comparing Results

- Ask each group to compare their measurements with other groups, discussing any discrepancies and confirming if they used the conversion correctly.

- Allow groups to report back, sharing their methods for conversions.

**Step 4:** Reflection and Sharing

- Invite students to reflect on how they feel about converting mm to cm.

- Each group should summarize their key findings and experiences with the conversions.

**Conclusion (5 minutes):**

- Summarize the main points discussed, reinforcing the conversion factor of 10.

- Conduct a brief interactive quiz where students convert random measurements from mm to cm and vice versa.

- Prepare students for the next session by previewing topics like converting between different units of measure or exploring additional measurement units.

**Extended Activities:**

- Measurement Scavenger Hunt: Provide students with a list of objects to find and measure in millimeters and convert to centimeters. They can take photos of each object as they find them.

- Conversion Art: Have learners create artwork or a poster that demonstrates the conversion between mm and cm, using real-world examples and bright illustrations.

- Measurement Journal: Encourage students to keep a measurement journal where they document different lengths they encounter in their daily lives, providing both mm and cm measurements.

**Teacher Self-Evaluation:**

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**WEEK 10: LESSON 5**

**Strand:** Measurements

**Sub Strand:** Length

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Explain how to add centimeters and millimeters in different situations.

2. Add millimeters and centimeters accurately in different situations.

3. Enjoy adding centimeters and millimeters through engaging activities.

**Key Inquiry Question(s):**

How do we add centimeters and millimeters?

**Learning Resources:**

- Mathematics Learner's Book

- Teacher's Guide

- Chart (for visual aids)

- Chalkboard and chalk

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin by reviewing the previous lesson on measurements.

- Ask students to share what they remember about centimeters and millimeters.

- Guide the learners to read relevant sections in the Mathematics Learner's Book and discuss the importance of understanding how to add different units of length.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Units

- Explain the difference between centimeters (cm) and millimeters (mm).

- Use a chart to show the conversion: 1 cm = 10 mm.

- Discuss why we might need to add these units in different situations (e.g., measuring objects, finding total lengths).

**Step 2:** Demonstrating Addition of Measurements

- Present a few examples of adding centimeters and millimeters on the chalkboard.

- Example 1: 3 cm + 20 mm = ? (Convert 3 cm to mm first)

- Example 2: 25 mm + 2 cm = ? (Convert 2 cm to mm first)

- Walk through the steps with the students, encouraging them to ask questions as you demonstrate.

**Step 3:** Group Activity – Collaborative Problem Solving

- Divide the class into small groups or pairs.

- Provide each group with a set of problems that involve adding centimeters and millimeters.

- E.g., 15 mm + 7 cm

- 4 cm + 25 mm

- Encourage learners to work together, discuss their thought processes, and come to a consensus on their answers.

**Step 4:** Class Sharing and Discussion

- Have each group present their answers to the class.

- Open the floor for discussion on how they calculated their totals and any challenges they faced.

- Address any misconceptions and explain the correct reasoning.

**Conclusion (5 minutes):**

- Summarize the key points learned during the lesson about adding centimeters and millimeters.

- Conduct a quick interactive quiz where students can call out answers to simple addition problems involving these units.

- Preview the next lesson’s topic, which may involve practical applications of measurements in real-world scenarios (e.g., using a ruler to measure classroom items).

**Extended Activities:**

- Measurement Hunt: Assign students to find objects at home or in the classroom that are measured in centimeters and millimeters. Have them record sizes and compare findings in the next class.

- Craft Project: Have students create a simple craft using different lengths of paper strips measured in cm and mm. They will practice addition as they combine strips of varying lengths.

**Teacher Self-Evaluation:**

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**WEEK 11: LESSON 1**

**Strand:** Measurements

**Sub Strand:** Length

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Explain how to subtract centimeters and millimeters in different situations.

2. Subtract centimeters and millimeters in different situations accurately.

3. Enjoy the process of subtracting centimeters and millimeters through engaging activities.

**Key Inquiry Question:**

- How do you subtract centimeters and millimeters in different situations?

**Learning Resources:**

- Mathematics Learner's Book

- Teacher's Guide

- Chalkboard and chalks

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review Previous Lesson: Begin by asking students to share what they remember from the previous lesson on measurements.

- Discussion: Explain how mastering subtraction of units like centimeters and millimeters is essential for real-life measurements. Encourage students to think about where they might use these skills outside of school.

**Lesson Development (25 minutes):**

**Step 1:** Understanding Units

- Explanation: Discuss the difference between centimeters (cm) and millimeters (mm).

- Activity: Use the chalkboard to demonstrate a few examples, such as 1 cm = 10 mm. Ask students to convert and write down some measurements of their choice.

**Step 2:** Guided Subtraction Practice

- Direct Instruction: Show how to perform subtraction with both units, e.g. subtracting 23 mm from 57 mm.

- Group Work: In pairs, have students practice subtracting given lengths in centimeters and millimeters using directed examples from the Mathematics Learner's Book.

**Step 3:** Real-Life Applications

- Scenario-Based Learning: Present different situations (e.g., measuring a piece of cloth, cutting wire) and ask students to determine how they would subtract measurements in those situations. For example, “If you have a 120 cm piece of rope and you cut off 35 cm, how much is left?”

- Sharing Findings: Allow students to solve these problems and share their answers with the class to encourage collaborative learning.

**Step 4:** Self-Practice

- Individual Practice: Give students a worksheet with 5 problems to solve independently, focusing on various scenarios that require subtraction of centimeters and millimeters.

- Peer Review: Once completed, students can partner up and check each other's work, discussing any discrepancies.

**Conclusion (5 minutes):**

- Summarize: Recap the key points learned in the lesson, emphasizing the steps for subtracting centimeters and millimeters.

- Interactive Activity: Play a quick game of “Measurement Bingo,” where students call out answers to problems presented on the board.

- Prepare for Next Session: Share a preview of the next topic, encouraging students to think about how addition and subtraction of longer and shorter measurements can relate to each other.

**Extended Activities:**

- Measurement Scavenger Hunt: Have students find objects in the classroom or at home that are measured in centimeters and millimeters, recording their measurements and practicing subtraction.

- Create a Measurement Journal: Encourage students to keep a journal documenting daily measurements they encounter, including any subtraction they perform (e.g., “I have a book that is 25 cm tall and I took out 5 cm of paper...how tall is the remaining book?”).

**Teacher Self-Evaluation:**

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**WEEK 11: LESSON 2**

**Strand:** Measurements

**Sub Strand:** Length

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Explain how to multiply centimeters and millimeters by whole numbers in real-life situations.

2. Multiply centimeters and millimeters by whole numbers in real-life situations.

3. Enjoy multiplying centimeters and millimeters by whole numbers.

**Key Inquiry Question(s):**

- How do we multiply centimeters and millimeters by whole numbers?

**Learning Resources:**

- Mathematics Learner's Book

- Teacher's Guide

- Digital resources

- Charts

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on the importance of measurements.

- Guide learners to read and discuss key concepts from the learning resources regarding length, focusing on centimeters and millimeters.

**Lesson Development (25 minutes):**

**Step 1:** Brainstorming

- Split the class into small groups. Ask students to brainstorm scenarios where they might need to multiply lengths measured in centimeters or millimeters (e.g., measuring fabric, pieces of paper, or pencil lengths).

**Step 2:** Teacher Illustration

- Gather students back together and illustrate a simple multiplication problem on the board, such as "What if we have 5 centimeters and we need 4 pieces of it?" Show the calculation: \(5 \text{ cm} \times 4 = 20 \text{ cm}\).

- Use a real-world example like calculating the total length of ribbon needed for 3 gift packages, each requiring 120 millimeters. Convert and multiply: \(120 \text{ mm} \times 3 = 360 \text{ mm}\).

**Step 3:** Guided Practice

- Provide several multiplication problems for the class to work through together, such as:

- If one piece of string is 8 cm long, how long would 6 pieces be?

- If a board is 150 mm, how long would 5 boards be?

- Encourage participation and help them through any confusing parts.

**Step 4:** Group Sharing

- Ask each group to share one multiplication problem they worked on and their solutions with the class. This could include some of their brainstorming scenarios.

**Conclusion (5 minutes):**

- Summarize key points:

- Multiplying centimeters and millimeters can help solve many real-life problems.

- Practicing multiplication reinforces our understanding of measurements.

- Conduct a brief interactive activity where students work independently to create a short word problem involving multiplication of length. Have a few volunteers share their problems with the class.

- Prepare students for the next session by briefly touching on converting between centimeters and millimeters.

**Extended Activities:**

- Field Activity: Take students outside or to a larger space where they can measure objects in centimeters and millimeters, then calculate the total lengths they measure.

- Creative Project: Have students create a mini-project where they have to measure and construct something using paper or material, applying what they learned about multiplication of lengths.

- Technology Integration: Use digital resources or online math games focused on multiplying measurements to help reinforce the concept in an engaging manner.

**Teacher Self-Evaluation:**

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**WEEK 11: LESSON 3**

**Strand:** Measurements

**Sub Strand:** Length

**Specific Learning Outcomes:**

**- By the end of the lesson, the learner should be able to:**

1. Explain how to divide centimeters and millimeters by whole numbers in real life situations.

2. Divide centimeters and millimeters by whole numbers in real life situations.

3. Enjoy dividing centimeters and millimeters by whole numbers in real life situations.

**Key Inquiry Question(s):**

- How do we divide centimeters and millimeters by whole numbers?

**Learning Resources:**

- Mathematics Learner's Textbook

- Teacher's Guide

- Charts

- Digital resources (e.g., educational videos, interactive quizzes)

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review the previous lesson on measurement concepts and introduce the day's topic.

- Ask students to share any real-life examples where they have divided lengths in centimeters or millimeters.

- Guide learners to read and discuss relevant content from the learning resources, emphasizing the understanding of the key concepts.

**Lesson Development (25 minutes):**

**Step 1:** Introduction to Division of Lengths

- Explain the concept of dividing centimeters and millimeters. Use visual aids such as charts or the board to illustrate examples (e.g., if a ribbon is 30 cm long and you want to cut it into 3 equal parts, each part is 10 cm).

- Emphasize the importance of understanding division in real-life scenarios.

**Step 2:** Group Brainstorming

- Divide students into pairs or small groups.

- Ask them to brainstorm situations in which they might need to divide centimeters and millimeters (e.g., measuring for crafts, dividing ingredients in a recipe).

- Encourage groups to share their ideas with the class after brainstorming.

**Step 3:** Guided Practice

- Work through several problems as a class. Write examples on the board, and allow students to provide solutions.

- Examples could include: “Anna has a 45 mm pencil and she wants to divide it into 5 pieces. How long is each piece?”

- Offer support and clarification to any students who may struggle with the concept.

**Step 4:** Independent Practice

- Give students a brief worksheet with real-life problems involving division of lengths.

- Circulate the room to provide assistance as needed and ensure students are applying the division concept accurately.

**Conclusion (5 minutes):**

- Summarize key points and the learning objectives achieved during the lesson.

- Highlight the importance of skills learned in practical situations.

- Conduct a brief interactive activity, such as a quick quiz or game to reinforce the main topics discussed.

- Prepare learners for the next session by previewing upcoming topics or questions to consider, such as converting between different units of length.

**Extended Activities:**

- Real-World Measurement Project: Ask students to measure items in their house in centimeters and millimeters, and then report back how they divided those measurements for specific purposes (like cutting paper, fabric, etc.).

- Interactive Measurement Game: Use digital resources to play an online game focused on dividing lengths. Encourage collaboration and discussion during the game to reinforce learning.

**Teacher Self-Evaluation:**

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**WEEK 11: LESSON 4**

**Strand:** Measurements

**Sub Strand:** Length

**Specific Learning Outcomes:**

**- By the end of the lesson, learners should be able to:**

1. Define the term circumference in length.

2. Determine the circumference of a circle practically.

3. Enjoy finding the circumference of circles practically.

**Key Inquiry Questions:**

- What is circumference?

- How do we find the circumference of circles practically?

**Learning Resources:**

- Mathematics Learner's Textbook.

- Circular objects (e.g., lids, wheels).

- Strings.

- Rulers.

**Organisation of Learning:**

**Introduction (5 minutes):**

- Begin with a quick review of the previous lesson on basic geometric shapes.

- Ask students to share what they remember about circles.

- Introduce the term “circumference” by reading it from the textbook and discuss its meaning. Ensure students understand it refers to the distance around a circle.

**Lesson Development (25 minutes):**

**Step 1:** Brainstorming About Circumference

- In pairs, learners brainstorm definitions and ideas related to the term "circumference."

- Each pair shares their thoughts with the class. Encourage contributions to enrich the understanding of the term.

**Step 2:** Circle Components Sketching

- Guide students to sketch a circle, labeling important components: circumference, diameter, and radius.

- Discuss how these components are related, emphasizing that the diameter is twice the radius and that the circumference is related to both.

**Step 3:** Practical Measurement Activity

- Divide the class into small groups and distribute circular objects, strings, and rulers.

- Instruct groups to use strings to measure the circumference of their chosen objects; they will then compare their findings with the circumference formulas (C = πd or C = 2πr).

- Encourage students to take turns measuring and recording the circumference and comparing their findings within their group.

**Step 4:** Class Sharing

- Have each group present one of the circular objects they measured and discuss their methodology.

- Invite questions and observations from other groups to engage all students actively.

**Conclusion (5 minutes):**

- Summarize the lesson by revisiting key definitions, emphasizing what circumference is and how to find it.

- Conduct a quick interactive quiz using simple questions to reinforce the lesson's main topics (for example, “What is the circumference?” and “How do we calculate it?”).

- Preview the next session by hinting at exploring more geometric shapes and their properties.

**Extended Activities:**

- Circumference Scavenger Hunt: Have students find circular objects around their homes or outside and measure their circumferences, documenting their findings.

- Circumference Art Project: Students can create a piece of art using different-sized circles, calculating and labeling the circumference of each.

- Mathematical Journaling: Encourage students to write a short paragraph about what they learned about circumference, including any interesting observations or questions they still have.

**Teacher Self-Evaluation:**

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**WEEK 11: LESSON 5**

**Strand:** Measurements

**Sub-Strand:** Length

**Specific Learning Outcomes**

**- By the end of this lesson, learners should be able to:**

1. Identify the relationship between circumference and diameter in different situations.

2.Carry out practical activities to determine the relationship between circumference and diameter.

3.Appreciate the use of lengths in real-life situations.

**Key Inquiry Question(s):**

- How do we determine the relationship between the circumference and diameter of circular objects?

**Learning Resources:**

- Strings

- Rulers

- Circular objects (such as cans, lids, or wheels)

- Mathematics Learner’s Textbook

**Organisation of Learning:**

**Introduction (5 minutes):**

- Review what learners learned in the previous lesson about measuring lengths and explore the concept of circumference and diameter briefly.

- Encourage learners to read and discuss relevant sections from their Mathematics Learner's Textbook in pairs, concentrating on definitions and examples of circumference and diameter.

**Lesson Development (25 minutes):**

**Step 1:** Measurement of Diameter

- In groups or pairs, learners select a circular object and measure its diameter using a ruler.

- They should record their measurements carefully in a table format, noting the name of the object and the size of the diameter.

**Step 2:** Measurement of Circumference

- Using strings or measuring tapes, learners will measure the circumference of the same circular objects.

- When using the string, learners should wrap the string around the object, mark where it overlaps, and then measure the length of the string with a ruler. Again, they will record these measurements.

**Step 3:** Calculating the Ratio

- Next, each group will calculate the ratio of circumference to diameter by dividing the circumference measurement by the diameter measurement (Circumference ÷ Diameter).

- This will help them to discover the value of π (pi) in their findings. Groups should record their calculated ratios.

**Step 4:** Sharing Findings

- Groups share their findings with the class, discussing any variations they found and how close their calculations were to the value of π (approximately 3.14).

- Encourage learners to think about why these relationships exist and how they are observed in real-life situations.

**Conclusion (5 minutes):**

- Summarize the key points covered in the lesson, ensuring that learners understand the relationship between circumference and diameter.

- Conduct a quick interactive quiz or ask questions to reinforce the concepts discussed, such as “What is π?” and “Can you find it around your home?”

- Prepare learners for the next session by previewing topics such as applications of π in real life and how it relates to area and volume in circles.

**Extended Activities:**

- Activity 1: Have learners find circular objects at home, measure their diameters and circumferences, and present their findings in class.

- Activity 2: Challenge students to create their own circular objects using arts and crafts and then measure them, recording their findings.

- Activity 3: Introduce a simple project where students calculate the circumference of different wheels used in bicycles or vehicles and discuss why the relationship between circumference and diameter is essential in those contexts.

**Teacher Self-Evaluation:**