

RATIONALIZED MATHEMATICS TERM 1

WEEK 1: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers - Place Value

Specific Learning Outcomes:

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

1. Identify the place value of digits up to hundreds of millions.
2. Use a place value chart to find the place value of each digit.
3. Appreciate the use of place value in real-life situations.

Key Inquiry Questions:

- What is place value?
- How do you find the place value of different digits?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pages 1-2
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin by reviewing the previous lesson on whole numbers.
- Ask students to recall and discuss the concepts of digits and their meanings.
- Introduce the topic of place value, highlighting its importance in understanding large numbers.

Lesson Development (30 minutes):

Step 1: Introduction to Place Value

- Explain what place value means and how it assigns a value to a digit based on its position in a number.
- Use examples to illustrate the concept (e.g., in 345, the 3 is in the hundreds place).

Step 2: Using a Place Value Chart

- Distribute place value charts and large numbers to each pair/group.
- Demonstrate how to fill in the place value chart using a sample number (e.g., 56,789,123).
- Ask each group to fill in the chart for their assigned number.

Step 3: Identifying Place Values

- Guide learners to identify and write the place value of each digit in the large number they worked with.
- Discuss the significance of each digit in relation to the overall value of the number.

Step 4: Real-Life Application

- Engage students in a discussion about where they see large numbers in real life (e.g., population counts, prices, distances).
- Prompt students to create scenarios where understanding place value is essential, such as banking or shopping.

Conclusion (5 minutes):

- Summarize the key points learned about place value and its significance.
- Conduct a brief interactive quiz where students call out the place value of digits from various numbers.
- Prepare students for the next lesson by giving a sneak peek into the concept of rounding and estimating large numbers.

Extended Activities:

- Homework Assignment: Have students find and write down three examples of large numbers they encounter at home, such as phone numbers or prices, and identify the place values of digits in those numbers.
- Creative Activity: Ask students to create a large poster that visually represents a number and includes the place value chart filled in for that number, incorporating illustrations related to their examples.
- Math Games: Introduce digital or board games that focus on place value concepts to reinforce their understanding in a fun way.

Teacher Self-Evaluation:

WEEK 1: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers Total Value

Specific Learning Outcomes:

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

1. Identify the total value of digits up to hundreds of thousands.
2. Use a place value chart to find the total value of each digit.
3. Appreciate the use of total value in real-life situations.

Key Inquiry Questions:

- 1.What is total value?
- 2.How do you work out the total value of digits?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 3-4)
- Place value apparatus

- Number charts
- Multiplication tables
- Digital devices for interactive games

Organization of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson, touching on key concepts of numbers and place value.
- Engage learners in a discussion using the relevant content from the learner's book, focusing on the definition of total value.

Lesson Development (30 minutes):

Step 1: Introduction to Total Value

- Explain the concept of total value and its significance in numbers.
- Illustrate how each digit in a number has a value determined by its place (units, tens, hundreds, etc.).
- Use a large place value chart displayed on the board to demonstrate with a five or six-digit number.

Step 2: Identifying Total Values using a Place Value Chart

- Divide learners into pairs and provide them with place value charts.
- Give them numbers (e.g., 245,678) and ask them to fill in the charts, identifying the total value of each digit.
- Circulate and provide support as necessary.

Step 3: Real-life Application of Total Value

- Lead a brief discussion on how total value is used in everyday life, such as currency, measurements, and data analysis.
- Ask learners to share examples they encounter in their daily lives.

Step 4: Interactive Activity

- Introduce a digital game or online quiz related to total value.
- Allow learners to compete against one another in pairs or small groups to enhance engagement and reinforce concepts.

Conclusion (5 minutes):

- Summarize the key points discussed: the definition of total value, how to identify it using a place value chart, and its real-life applications.
- Conduct a quick interactive activity, such as a "Total Value Challenge," where learners shout out the total value of given digits in a fun and competitive format.
- Preview the next lesson by posing questions that will be explored further, such as "What happens when we add more digits?"

Extended Activities:

1. Place Value Investigation: Have students create a small project where they find examples of large numbers (like phone numbers, population statistics, etc.) and break them down into their total values using a place value chart.
2. Total Value Story Problems: Encourage students to write simple word problems that involve calculating the total value of digits, which they can then swap with peers for solving.
3. Digital Games Exploration: Encourage students to explore other online resources or apps that focus on numbers and total value, guiding them to create a presentation on their favorite game.

Teacher Self-Evaluation:

WEEK 1: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers - Reading and Writing Numbers in Symbols

Specific Learning Outcomes:

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

1. Read numbers in symbols.
2. Make a number chart and write numbers in symbols.
3. Appreciate the use of numbers in symbols.

Key Inquiry Question(s):

- When do we use numbers in symbols in real life?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 4-5)
- Place value apparatus
- Number charts

- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on whole numbers and their importance.
- Guide learners to read and discuss the relevant content from the learning resources, emphasizing their understanding of what numbers in symbols represent.

Lesson Development (30 minutes):

Step 1:

- Reading Numbers in Symbols:

Introduce various whole numbers and demonstrate reading them in symbols. Ask students to practice by reading numbers from the textbook.

Step 2:

- Creating a Number Chart:

Guide learners in pairs to create their own number charts. Provide templates or examples to show how numbers can be organized in a chart.

Step 3:

- Writing Numbers in Symbols:

In their groups, have learners practice writing both written and symbolic forms of various numbers. For instance, write "forty-five" as "45."

Step 4:

- Appreciating the Use of Numbers:

Discuss real-life applications of numbers in symbols. Engage students in a conversation about where they see numbers used in symbols every day, such as addresses, prices, or measurements.

Conclusion (5 minutes):

- Summarize the key points covered in the lesson, reinforcing the learning objectives achieved.
- Conduct an interactive quick quiz where learners can volunteer to read a number in symbols or give examples from their lives where they see numbers used.
- Prepare learners for the next session by previewing the concepts of addition and subtraction of whole numbers.

Extended Activities:

1. Number Hunt:

Have students go on a number hunt around the school to find real-life examples of numbers in symbols (e.g., door numbers, signs) and report back in class.

2. Create a Math Journal:

Encourage students to maintain a math journal where they write down new numbers they encounter during the week, along with their symbolic representations.

3. Classroom Number Line:

Create a large number line in the classroom with students' contributions of numbers in both written and symbolic forms.

Teacher Self-Evaluation:

WEEK 1: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers - Reading and Writing Numbers in Words

Specific Learning Outcomes:

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

1. Make number cards, read, write, and relate numbers up to millions in words.
2. Read and write numbers up to millions in real-life contexts.
3. Appreciate the importance of writing numbers in words.

Key Inquiry Question:

- Why is it important to read and write numbers in words?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pages 5-7
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on number values and their significance.
- Guide learners to read and discuss relevant content from pages 5-7 of the Smart Minds Mathematics book, emphasizing key concepts such as place value and the representation of numbers.

Lesson Development (30 minutes):

Step 1: Making Number Cards

- In pairs, learners will create number cards for numbers from 1 to 1,000,000.
- Each card should display the number on one side and the written form on the other (e.g., "1,000" – "One thousand").

Step 2: Reading and Writing Numbers

- Learners will practice reading the numbers aloud and converting them from numeral to words using their cards and the number charts.
- Guide them to read specific examples from real-life contexts, such as prices, distances, or populations, and ask them how to express these in words.

Step 3: Relating Numbers in Real-Life Situations

- Discuss scenarios where writing numbers in words is essential (checks, formal letters).
- Engage learners in an activity where they need to write numbers they encounter in daily life in word form, like amounts of money or statistics.

Step 4: Reflection on Importance

- Lead a class discussion on why reading and writing numbers in words is important.

- Encourage learners to reflect on situations where they might need this skill.

Conclusion (5 minutes):

- Summarize key points covered in the lesson: creating number cards, reading and writing numbers in words, and real-life applications.
- Conduct a brief interactive activity by having learners quiz each other with their number cards.
- Preview the next session's topic: Introduction to decimals and their relation to whole numbers.

Extended Activities:

- Home Connection: Ask learners to keep a log of numbers they encounter in the week (advertisements, receipts, etc.) and write them in word form.
- Creative Writing: Encourage students to write a short paragraph using at least five different numbers written in word form, relating them to a personal experience or story.
- Games: Introduce a matching game where students match numbers to their word forms using the cards they created.

Teacher Self-Evaluation:

WEEK 1: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole numbers - Rounding off numbers to the nearest hundreds of millions

Specific Learning Outcomes:

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

1. Make a number card and round off numbers to the nearest hundreds of millions.
2. Use a place value chart and round off numbers to the nearest hundreds of millions.
3. Appreciate the importance of rounding off numbers.

Key Inquiry Questions:

- How do you round off numbers?
- What is the importance of rounding off numbers?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 7-9
- Place value apparatus
- Number charts

- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson's main points with the students.
- Guide learners to read relevant content from the learning resources. Discuss the key concepts of rounding off numbers, explicitly focusing on the nearest hundreds of millions.

Lesson Development (30 minutes):

Step 1: Introduction to Rounding Off

- Explain the concept of rounding numbers and its purpose. Use a simple example to demonstrate how to round a number to the nearest hundreds of millions, such as rounding 5,462,000,000.
- Show learners how to identify which digit to look at when rounding (the digit to the right of the hundreds of millions place).

Step 2: Create Number Cards

- Assign learners to create number cards using various whole numbers, ensuring that some numbers are above and some below the halfway mark.
- Encourage learners to write down their numbers and the rounded number next to it on the card.

Step 3: Using Place Value Charts

- Distribute place value charts to learners.
- Have learners use the charts to round some provided whole numbers to the nearest hundreds of millions. Guide them in identifying the rounding rules again as they work through this.

Step 4: Collaborative Rounding Activity

- Form small groups and ask each group to come up with their own example of a number and demonstrate how to round it on their chart to the class. Encourage discussion on their thought processes and findings with rounding off.

Conclusion (5 minutes):

- Summarize key points covered during the lesson, such as the rounding process and its importance in everyday calculations.
- Conduct a quick interactive activity where students take turns rounding off a number and explaining their reasoning.
- Preview the next session by posing questions about how rounding might be important in different real-world contexts (e.g., finance, measurements).

Extended Activities:

- Have students create a mini-project where they round various real-world data (like populations or distances) and present their findings, showcasing their number cards and explaining their rounding reasoning.
- Encourage students to find examples of large numbers in the news or on the internet, round them off, and discuss why rounding was necessary or beneficial in those situations.

Teacher Self-Evaluation:

WEEK 2: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers - Natural Numbers - Even Numbers

Specific Learning Outcomes:

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

1. Explain the meaning of even numbers.
2. Create number cards and identify even numbers.
3. Have fun identifying and forming even numbers.

Key Inquiry Questions:

- What do we call numbers that are divisible by 2?
- What is the sum of the first 10 even numbers?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pages 9-10
- Place value apparatus
- Number charts

- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson on whole numbers.
- Ask students to share what they remember about even and odd numbers.
- Guide learners to read and discuss relevant content from pages 9-10 of the learning resource, emphasizing the definition and characteristics of even numbers.

Lesson Development (30 minutes):

Step 1: Explain the Meaning of Even Numbers

- Engage learners in a discussion about even numbers.
- Define even numbers as those integers that can be divided by 2 without a remainder.
- Provide examples (e.g., 2, 4, 6, 8, etc.) and ask students to identify the pattern (adding 2 each time).

Step 2: Make Number Cards

- Provide learners with materials to create their number cards (index cards or paper).
- Instruct them to create cards for numbers 1 to 20 (or higher).
- Once completed, ask the learners to work in pairs to sort their cards into even and odd numbers.

Step 3: Identify Even Numbers Up to a Million

- Present a large number chart visually on the board or projector.
- Ask learners to identify examples of even numbers from the chart up to a million.
- As a class, confirm if identified numbers are even by checking their divisibility by 2.

Step 4: Fun Activity - Even Number Game

- Play a quick interactive game where students call out numbers in turns.
- If a student calls an even number, they receive a point.
- If they call an odd number, they lose a point.

Conclusion (5 minutes):

- Summarize key points discussed in the lesson: the definition of even numbers and how to identify them using number cards.
- Conduct a brief interactive activity where students can shout out even numbers they've created and visible in the chart.
- Preview the next lesson topic, which will focus on odd numbers, and pose the question: "What do we notice about odd numbers compared to even numbers?"

Extended Activities:

- Even Number Hunt: Assign learners to find even numbers in their daily lives (e.g., on street signs, buildings, etc.) and report back in the next class.
- Even Numbers Poster: Create a poster showing even numbers, their characteristics, and examples of where they occur in real life (like even numbered items or pairs).

Teacher Self-Evaluation:

WEEK 2: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers (Natural Numbers - Odd Numbers)

Specific Learning Outcomes:

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

1. Explain the meaning of odd numbers.
2. Make number cards and identify odd numbers.
3. Have fun identifying and forming odd numbers.

Key Inquiry Questions:

- What is an odd number?
- What is the sum of the first 10 odd numbers?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 11
- Place value apparatus
- Number charts

- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin by reviewing the previous lesson on natural numbers.
- Ask the learners to summarize what they remember and ensure all students contribute.
- Guide learners to read and discuss relevant content from the Smart Minds Mathematics Learner's Book, focusing on odd numbers.

Lesson Development (30 minutes):

Step 1: Introduction to Odd Numbers

- Explain the definition of odd numbers, highlighting that they are integers that cannot be evenly divided by 2.
- Provide examples of odd numbers (e.g., 1, 3, 5, 7, etc.) and ask students to identify the pattern.

Step 2: Making Number Cards

- In pairs, learners create number cards from 1 to 20 (or up to a million as an extension).
- Instruct students to color or mark the odd numbers on their cards to visually distinguish them.

Step 3: Identifying Odd Numbers

- Have learners use their number cards and number charts to identify all odd numbers from 1 to a designated limit (e.g., 1 to 100).
- Encourage students to shout out or write down odd numbers as they identify them, reinforcing the concept with peer feedback.

Step 4: Exploring the Sum of Odd Numbers

- Ask the learners to calculate the sum of the first 10 odd numbers ($1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19$).
- Discuss the pattern they notice in the sums and how they relate to odd numbers.

Conclusion (5 minutes):

- Summarize the key points covered in the lesson: understanding odd numbers, identifying them, making connections through patterns, and summing the first 10 odd numbers.
- Conduct a brief interactive quiz where learners have to quickly state an odd number or raise their cards when they hear an odd number called out.
- Provide a brief preview of the next session: "Next time, we will dive into even numbers and their similarities and differences with odd numbers."

Extended Activities:

- Odd Number Hunt: Have learners conduct a "number hunt" at home or around the school where they find and document 10 odd numbers they see in everyday contexts (e.g., address numbers, page numbers).
- Odd Numbers in Art: Encourage students to create a colorful poster that represents odd numbers through art, using odd numbers to create patterns or shapes.

Teacher Self-Evaluation:

WEEK 2: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub-Strand: Whole Numbers & Natural Numbers - Prime Numbers

Specific Learning Outcomes:

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

1. Explain the meaning of prime numbers.
2. Identify prime numbers between one up to 100.
3. Appreciate prime numbers.

Key Inquiry Questions:

- What is a prime number?
- What is the sum of the first 10 prime numbers?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 12
- Place value apparatus
- Number charts

- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Quickly review the previous lesson on natural numbers.
- Ask learners to share what they know about prime numbers and provide opportunities for discussion on those insights.
- Encourage students to look at relevant content in their learner's book regarding prime numbers.

Lesson Development (30 minutes):

Step 1: Understanding Prime Numbers

- Begin with a definition: "A prime number is a natural number greater than 1 that cannot be formed by multiplying two smaller natural numbers."
- Discuss examples of prime numbers (2, 3, 5, 7, etc.) and non-prime numbers.
- Encourage learners to list more examples from their number charts.

Step 2: Identifying Prime Numbers

- Provide learners with a list of numbers from 1 to 100.
- In pairs, challenge students to circle the prime numbers and explain their reasoning.
- Walk around to facilitate discussion and check for understanding, reiterating the definition as needed.

Step 3: Sum of Prime Numbers

- Guide students to find the sum of the first 10 prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29.
- Encourage groups to add these numbers together and discuss their findings.

Step 4: Exploration of Prime Numbers between 30 and 40

- Have learners identify prime numbers specifically between 30 and 40 (31, 37).
- In pairs, ask them to take turns explaining the significance of the identified prime numbers within this range.

Conclusion (5 minutes):

- Summarize key points covered: definition of prime numbers, identifying prime numbers up to 100, and the sum of the first 10 prime numbers.
- Conduct an interactive game: "Prime or Not?" where students hold up cards to indicate if a number called out is prime or not.
- Preview the next session by hinting at composite numbers and asking, "How do composite numbers relate to prime numbers?"

Extended Activities:

1. Prime Number Hunt: Create a scavenger hunt where learners find prime numbers in various contexts around the classroom or school.
2. Prime Number Trivia: Organize a trivia game where students research and present fun facts about prime numbers.
3. Number Charts Creation: Have students create their own number charts up to 100, marking prime numbers in a distinctive way, such as coloring or stickers.

Teacher Self-Evaluation:

WEEK 2: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole numbers - Operations on whole numbers (addition)

Specific Learning Outcomes:

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

1. Explain how to add whole numbers.
2. Use a place value chart to add whole numbers.
3. Enjoy working out addition of whole numbers.

Key Inquiry Question:

- What is the total number of males and females in your class?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 13-14
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Conduct a quick review of the previous lesson on whole numbers.
- Guide learners to discuss the importance of addition in everyday contexts, incorporating the key inquiry question to engage them.

Lesson Development (30 minutes):

Step 1: Explanation of Addition

- Introduce the concept of addition. Explain that addition combines quantities to find a total.
- Ask students to share examples of when they use addition outside of school.

Step 2: Using Number Cards

- Distribute number cards to each student.
- In pairs, students will practice creating simple addition problems using their cards. Guide them to present their problems to the class.

Step 3: Place Value Chart

- Introduce the place value chart. Show how to use it when adding numbers, focusing on aligning place values.
- Provide a couple of examples on the board for the class to solve together.

Step 4: Practice and Application

- Group students to solve addition problems using number cards and place value charts.
- Circulate among the groups, offering help and ensuring that students understand the process.

Conclusion (5 minutes):

- Summarize key points from the lesson, revisiting how to add whole numbers and the importance of place value.
- Conduct a brief interactive quiz (e.g., each student answers a question about adding two numbers on the board).
- Preview the next lesson, hinting at more complex operations (like subtraction).

Extended Activities:

1. Home Assignment: Create three addition problems and solve them using the place value chart. Bring to the next class.
2. Class Survey: Conduct a class survey to find out how many students have pets. Add the total number of students with pets versus those without, then share your findings with the class.
3. Math Games: Create or play a math game online or with peers that focuses on addition to strengthen skills in a fun way.

Teacher Self-Evaluation:

WEEK 2: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers - Operation on Whole Numbers – Subtraction

Specific Learning Outcomes:

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

1. Explain how to subtract whole numbers.
2. Use a place value chart to subtract whole numbers.
3. Have fun working out subtraction of whole numbers.

Key Inquiry Question:

What is the difference between the number of male and female students in your class?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 14-15
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

1. Review: Begin the lesson by briefly reviewing the previous lesson on addition of whole numbers, relating it to subtraction.
2. Discussion: Allow learners to read and discuss the relevant content from the Smart Minds Mathematics Learner's Book, particularly focusing on subtraction and key concepts related to it.

Lesson Development (30 minutes):

Step 1: Understanding Subtraction

- Discuss the concept of subtraction as finding the difference between two numbers.
- Use a number line to visually demonstrate how subtraction works.

Step 2: Place Value Chart

- Introduce the place value chart. Explain each place value (units, tens, hundreds, etc.).
- Illustrate how to set up subtraction problems using the chart.

Step 3: Guided Practice

- Ask learners to form pairs and work on sample subtraction problems, using the place value chart for guidance. Provide a worksheet with equations that require differing strategies based on place value.

Step 4: Group Activity

- Divide learners into small groups and present them with a subtraction problem related to the key inquiry question. For example, ask them to use subtraction to find out how many more males or females are in their class based on numbers provided.
- Each group will present their method of solving the problem and how they applied subtraction using the place value chart.

Conclusion (5 minutes):

- Summarization: Recap the key points discussed: the process of subtraction, using the place value chart, and the significance of these methods in real-life contexts.
- Interactive Activity: Conduct a quick quiz or fun activity where learners solve more subtraction problems individually or in pairs.
- Preview: Provide a sneak peek into the next lesson on the addition of decimals, asking learners to think about how subtracting whole numbers can relate to subtracting decimals.

Extended Activities:

1. Real-Life Application: Have learners create a simple shopping list with prices, calculate total costs, and then determine how much money they would save by subtracting discounts.
2. Peer Teaching: Pair learners with different skill levels to teach subtraction methods to each other, enhancing their understanding in a collaborative way.
3. Games: Use online math games that reinforce subtraction skills in a fun way, allowing learners to practice while competing in a friendly environment.

Teacher Self-Evaluation:

WEEK 3: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers – Operation on Whole Numbers: Multiplication

Specific Learning Outcomes:

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

1. Explain how to multiply whole numbers.
2. Make a number wheel and use it to multiply whole numbers.
3. Have fun working out multiplication of whole numbers.

Key Inquiry Question:

- What is the product of 35,384 by 128?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 15-16
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on whole numbers and their operations.
- Guide learners to read and discuss content from the relevant pages in their mathematics book, emphasizing the key concepts of multiplication.

Lesson Development (30 minutes):

Step 1: Explanation of Multiplication

- Discuss the concept of multiplication as repeated addition.
- Use visual aids (number charts or place value apparatus) to illustrate how multiplication works.
- Example: "If we multiply 4 by 3, we are adding 4 three times ($4 + 4 + 4 = 12$)."

Step 2: Making a Number Wheel

- In pairs, learners will create a number wheel with the numbers 1-12.
- Demonstrate how to label the wheel and explain its purpose in multiplying numbers.
- Allow learners time to finish their wheels and illustrate multiplication facts using them.

Step 3: Applying Multiplication to Solve Problems

- Hand out word problems that involve the multiplication of two whole numbers.
- Each pair will work together to solve one problem, such as "If a box contains 12 cookies and there are 4 boxes, how many cookies are there in total?"
- Discuss strategies for approaching problems.

Step 4: Interactive Practice

- Challenge students to use the number wheel to calculate the product of 35,384 by 128 using multiplication breakdown strategies.

- Encourage them to share their findings and any challenges they faced during calculations.

Conclusion (5 minutes):

- Summarize key points learned about multiplication of whole numbers, the creation and use of number wheels, and real-world applications through word problems.
- Conduct a brief interactive quiz where learners take turns solving a few multiplication problems using the number wheel.
- Preview the next session's topic: "Division of Whole Numbers – Finding Quotients".

Extended Activities:

1. Multiplication Challenges: Students can create their own multiplication quiz for classmates, including problems of varying difficulty levels.
2. Real-Life Applications: Learners can bring in examples from grocery shopping, such as calculating the total cost of multiple items, and solve them.
3. Math Games: Encourage learners to create and play math games that use multiplication facts (such as bingo, card games, etc.) to reinforce their skills.

Teacher Self-Evaluation:

WEEK 3: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole numbers Operation on whole numbers – division

Specific Learning Outcomes:

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

1. Explain how to divide whole numbers.
2. Use long division to work out the division of whole numbers.
3. Enjoy working out division of whole numbers.

Key Inquiry Question(s):

- What is the quotient in $623,808 \div 684$?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 16-17
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on multiplication and how it relates to division.
- Guide learners to read and discuss relevant content from pages 16-17 of the learning resource, emphasizing the concepts of division and its importance.

Lesson Development (30 minutes):

Step 1: Understanding Division

- Explain the basic concept of division as sharing or grouping. Use visual aids such as number charts and place value apparatus to demonstrate simple division problems.
- Ask students to share examples where they have used division in real life (e.g., sharing candies).

Step 2: Introduction to Long Division

- Introduce the long division process using the example of $623,808 \div 684$. Write it on the board and break it down step by step:
 1. Divide the first numbers.
 2. Multiply and subtract.
 3. Bring down the next number.
 4. Repeat the process until complete.
- Provide practice problems for students to attempt in their seats.

Step 3: Guided Practice in Pairs

- Pair students to work on long division problems from the textbook (task 12) collaboratively.
- Walk around to provide support and guidance as needed.

Step 4: Independent Practice

- Give students an additional long division problem to solve independently. Encourage them to write out each step clearly to reinforce their understanding.

Conclusion (5 minutes):

- Summarize the key points of division and long division covered in the lesson.
- Conduct a brief quiz or interactive activity where students can practice saying the quotient of example problems out loud or using flashcards.
- Preview the next session by introducing the topic of multiplying whole numbers and how it relates to division (inverse operations).

Extended Activities:

- Encourage students to find real-world examples where division is used (e.g., recipes, budgeting) and share them in the next class.
- Assign additional long division practice problems for homework to further solidify their skills and understanding.

Teacher Self-Evaluation:

WEEK 3: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers – Operations on Whole Numbers – Combined Operations

Specific Learning Outcomes:

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

1. Explain the meaning of BODMAS.
2. Work out combined operations of whole numbers using BODMAS.
3. Appreciate the use of BODMAS in combined operations.

Key Inquiry Questions:

- What does BODMAS stand for?
- In which order do you perform the operations?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 17-19
- Place value apparatus
- Number charts

- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson, perhaps using a question or two to assess understanding.
- Introduce the key concepts of BODMAS by discussing the meaning and importance of order in operations. Read and summarize relevant text from the Smart Minds Mathematics Learner's Book.

Lesson Development (30 minutes):

Step 1: Introduction to BODMAS

- Explain BODMAS: Brackets, Orders (i.e., powers and roots, etc.), Division, Multiplication, Addition, Subtraction.
- Emphasize that BODMAS helps us know the order in which to solve operations.
- Use a number chart to illustrate examples.

Step 2: Working Out Operations

- Present several combined operations using whole numbers on the board (e.g., $8 + 2 \times 5$).
- Work through the first example as a class, applying BODMAS to find the answer.
- Ask learners to independently practice solving two similar problems using BODMAS.

Step 3: Pair Work

- Have learners pair up and quiz each other on their BODMAS operations.
- Provide additional mixed operation problems for pairs to solve collaboratively, encouraging discussions.

Step 4: Applications of BODMAS in Real Life

- Discuss scenarios where BODMAS is important, like calculating expenses, budgeting, or measurement conversions.
- Encourage learners to share other real-life examples or where they might apply BODMAS.

Conclusion (5 minutes):

- Summarize the main points: the meaning of BODMAS, how to apply it in combined operations, and its relevance in everyday situations.
- Conduct a brief interactive activity where learners call out their favorite BODMAS problem and explain their solution.
- Preview the next session focusing on the upcoming operations within decimals and their applications.

Extended Activities:

1. BODMAS Challenge: Create a set of BODMAS-themed homework problems for the learners to solve. Offer extra credit for creativity in finding real-life scenarios where they can apply BODMAS.
2. Group Project: Form groups to explore a specific real-life situation where they can demonstrate the use of combined operations, then present their findings to the class.
3. Math Games: Suggest online or classroom-based math games that reinforce BODMAS and combined operations.

Teacher Self-Evaluation:

WEEK 3: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Whole Numbers - Creating Number Sequences

Specific Learning Outcomes:

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

1. Identify the rule that relates one number to the next in a sequence.
2. Create number sequences through addition and subtraction starting from 1 to 1000.
3. Appreciate forming number sequences using number cards.

Key Inquiry Question:

- What is a number sequence?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pages 19-20
- Place value apparatus
- Number charts
- Multiplication tables

Organization of Learning:

Introduction (5 minutes):

1. Review the Previous Lesson:

- Begin with a brief recap of the last lesson. Ask students for examples of sequences they may have encountered.

2. Discussion of Key Concepts:

- Guide learners to read pages 19-20 from their textbooks. Discuss what a number sequence is and why it's important in mathematics, focusing on the rules that determine how sequences are formed.

Lesson Development (30 minutes):

Step 1: Identify the Rule in Number Sequences

- Provide examples of simple number sequences (e.g., 2, 4, 6, 8...). Ask students to identify the rule (adding 2).
- In pairs, have students identify rules from other given sequences. Ask: "What do you notice about these numbers?"

Step 2: Create Addition Number Sequences

- Instruct learners to create their own addition sequences starting from 1. Examples include:
- Start from 1 and add 3: 1, 4, 7, 10, ... up to 1000.
- Facilitate sharing of their sequences with the class.

Step 3: Create Subtraction Number Sequences

- Transition to creating subtraction sequences in a similar manner. For example:
- Start from 1000 and subtract 5: 1000, 995, 990, ... until you can no longer subtract.
- Allow students time to create and share their subtraction sequences.

Step 4: Number Card Activity

- Distribute number cards to each student.
- Organize an activity where students arrange the cards to form their number sequences based on rules discussed.
- Encourage creativity by allowing them to form patterns or unique sequences.

Conclusion (5 minutes):**1. Summarize Key Points:**

- Review the main concepts learned during the lesson: identification of rules, creation of addition, and subtraction sequences.

2. Interactive Activity:

- Conduct a quick game where students quiz each other on parts of number sequences.
- Use a bell or signal to indicate correct answers.

3. Preview Next Session:

- Briefly discuss what the upcoming lesson will focus on, perhaps exploring complex sequences or real-life applications for sequences.

Extended Activities:**- Homework Assignment:**

- Ask students to create a number sequence that relates to a real-life context (e.g. a pattern in nature or in their daily lives).

- Group Project:

- Have groups develop a poster showing different types of number sequences (arithmetic, geometric) and present it in class.

- Math Games:

- Suggest online math games that focus on number sequences to reinforce learning in a fun, engaging way.

Teacher Self-Evaluation:

WEEK 3: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors: Divisibility Test for 2

Specific Learning Outcomes:

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

1. Identify the numbers that are divisible by 2.
2. Recognize numbers that are divisible by 2 from different sets of numbers.
3. Appreciate the importance of numbers that are divisible by 2.

Key Inquiry Question(s):

- Which numbers are divisible by 2?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 20-21
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review last lesson by asking students to share what they remember about factors.
- Guide students to read and discuss the relevant content from the mathematics book, focusing on divisibility rules, particularly for the number 2.

Lesson Development (30 minutes):

Step 1: Introduction to Divisibility by 2

- Explain the rule for divisibility by 2: A number is divisible by 2 if its last digit is 0, 2, 4, 6, or 8.
- Display examples on the board and ask students to identify whether each example is divisible by 2.

Step 2: Group Activity - Create Number Cards

- In pairs, students create number cards with numbers from 1 to 20.
- Have them work together to determine which numbers are divisible by 2 and mark those on the cards.

Step 3: Recognition and Discussion

- Groups present their number cards to the class.
- Facilitate a discussion about their findings, reinforcing the concept of divisibility by 2. Ask questions like, "Why do you think some numbers are divisible by 2 and others are not?"

Step 4: Finding Divisible Numbers in Sets

- Present different sets of numbers on the board (e.g., 1-10, 11-20).
- Have students identify and circle the numbers that are divisible by 2 from each set, discussing their answers as a class.

Conclusion (5 minutes):

- Summarize the key points about the divisibility rule for 2.
- Conduct a quick interactive quiz using a few examples and ask students to show thumbs up for 'divisible by 2' and thumbs down for 'not divisible by 2'.
- Preview the next session, which will cover numbers divisible by 3.

Extended Activities:

- Homework: Ask students to create a list of 20 random numbers and categorize them into two groups: divisible by 2 and not divisible by 2.
- Group Project: Have students create a colorful poster that illustrates the rule for divisibility by 2, including examples and visuals.

Teacher Self-Evaluation:

WEEK 4: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors - Divisibility Test of 3

Specific Learning Outcomes:

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

1. List numbers that are divisible by 3.
2. Determine numbers that are divisible by 3 from different sets of numbers.
3. Appreciate the significance of numbers that are divisible by 3.

Key Inquiry Questions:

- Which numbers have their sum divisible by 3?
- How do you tell if a number is divisible by 3?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 21-22
- Number cards
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson: Briefly discuss what learners learned about factors and divisibility.
- Discussion: Guide learners to read and discuss the relevant content from the learner's book, emphasizing the understanding of numbers divisible by 3.

Lesson Development (30 minutes):

Step 1: Introduction to Divisibility by 3

- Explain that a number is divisible by 3 if the sum of its digits is divisible by 3.
- Provide examples (e.g., 123: $1 + 2 + 3 = 6$, which is divisible by 3).

Step 2: Making Number Cards

- Learners create number cards with the numbers 1-30.
- They can work in pairs or small groups to help each other and discuss their understanding while creating these cards.

Step 3: Listing Numbers Divisible by 3

- Using their number cards, learners will identify and list all the numbers between 1 and 30 that are divisible by 3.
- Encourage them to check their sums of digits to determine divisibility.

Step 4: Group Activity - Determine from Different Sets

- Present different sets of numbers (e.g., 15, 22, 33, 47) and have learners work in groups to determine which numbers are divisible by 3.
- Facilitate a discussion on their findings and the reasoning behind their answers.

Conclusion (5 minutes):

- Summarize Key Points: Review what it means for a number to be divisible by 3 and discuss the sums of digits technique.
- Interactive Activity: Play a quick game where learners call out a number, and the class determines if it is divisible by 3.
- Preview of Next Session: Introduce the topic of factors and multiples to pique their interest for the upcoming lesson.

Extended Activities:

- Group Project: Create a large chart that lists all multiples of 3 up to 100, illustrating patterns noticed.
- Home Activity: Ask learners to find and document 10 real-world examples of quantities that are divisible by 3 (e.g., packs of 3 candies, pages in a book, etc.).

Teacher Self-Evaluation:

WEEK 4: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors: Divisibility Test (Divisibility Test of 4)

Specific Learning Outcomes:

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

1. List the numbers that are divisible by 4
2. Determine numbers that are divisible by 4
3. Appreciate the significance of numbers that are divisible by 4

Key Inquiry Question:

- Which numbers are divisible by 4?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 23-24)
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson. Ask students questions to gauge their understanding of factors and divisibility.
- Introduce the concept of divisibility specifically for the number 4. Use excerpts from the learning resource to engage students in a discussion about divisibility.

Lesson Development (30 minutes):

Step 1: Understanding Divisibility by 4

- Explain the rule for a number to be divisible by 4: "A number is divisible by 4 if the number formed by its last two digits is divisible by 4."
- Provide examples (e.g., 12, 16, 24). Use number charts to visually show the numbers.

Step 2: Creating Number Cards

- In pairs, learners will create number cards for the first 50 whole numbers (1-50).
- Each card should have the number on one side and a blank space for notes on the other side to write whether each number is divisible by 4 or not.

Step 3: Listing and Determining Divisible Numbers

- Guide learners to work together to examine their number cards and list the numbers that are divisible by 4.
- Use a whiteboard to compile a list of the numbers they find. Discuss and verify as a class.

Step 4: Reflection and Appreciation

- Encourage students to think about where they see divisibility by 4 in real life (e.g., in groupings, in times).
- Discuss why knowing about divisibility might be helpful in practical scenarios.

Conclusion (5 minutes):

- Summarize the key points learned from the lesson, emphasizing the rule of divisibility by 4 and the numbers identified as divisible.
- Conduct a quick class quiz where you call out numbers, and students respond with “Yes” or “No” to indicate if they are divisible by 4.
- Preview the next lesson, considering introducing multiple types of divisibility rules.

Extended Activities:

1. Divisibility Game: Create a game where students must categorize numbers into groups: divisible by 4, not divisible by 4. Award points for correct answers.
2. Estimation Activity: Have students find numbers in their environment (e.g., on house numbers, car plates) and determine if they are divisible by 4.
3. Creative Expression: Ask learners to create a short story or a comic that includes numbers divisible by 4 to highlight their importance and utility.

Teacher Self-Evaluation:

WEEK 4: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors – Divisibility Test: Divisibility Test of 5

Specific Learning Outcomes:

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

1. List numbers that are divisible by 5.
2. Determine numbers that are divisible by 5 from different sets of numbers.
3. Appreciate how numbers that are divisible by 5 serve a purpose in mathematics and real-life applications.

Key Inquiry Question(s):

- Which numbers are divisible by 5?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 24-25)
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson on factors.
- Engage learners in a discussion about what they already know about the number 5.
- Encourage students to read and discuss the relevant sections from their Learner's Book, highlighting the significance of divisibility by 5.

Lesson Development (30 minutes):

Step 1: Introduction to Divisibility by 5

- Explain the rule for determining if a number is divisible by 5 (i.e., a number is divisible by 5 if it ends in 0 or 5).
- Provide examples (e.g., 10, 15, 20) and non-examples (e.g., 13, 22).

Step 2: Practicing with Number Cards

- Divide learners into pairs and provide them with number cards (e.g., numbers from 1 to 50).
- Instruct them to identify and sort these numbers into two groups: divisible by 5 and not divisible by 5.

Step 3: Collaborative List Creation

- Have groups share their findings and compile a list on the board of all numbers they identified as divisible by 5.
- Discuss any patterns they notice in the list (e.g., what digits these numbers end with).

Step 4: Real-Life Application

- Discuss how numbers divisible by 5 appear in everyday contexts (money, time, etc.).

- Have learners brainstorm examples of where they might encounter these numbers outside the classroom.

Conclusion (5 minutes):

- Summarize key points: rules of divisibility by 5, importance, and applications.
- Conduct a brief interactive quiz where students can shout out answers to questions about divisibility by 5.
- Preview the next lesson on divisibility by other numbers to spark curiosity.

Extended Activities:

- Create a Divisibility Chart: Students can design a classroom chart displaying numbers divisible by 5 contrasting them with numbers that are not, decorating it with examples from their lives (like prices or ages).
- Number Hunt: Encourage learners to find real-life objects in their environment that come in amounts divisible by 5 (e.g., packs of gum, coins) and report back in the next class.
- Homework Assignment: Find 10 items at home or in their neighborhood that can be grouped into sets of 5, and write a brief explanation of each item.

Teacher Self-Evaluation:

WEEK 4: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors – Divisibility Test: Divisibility Test of 5

Specific Learning Outcomes:

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

1. List numbers that are divisible by 5.
2. Determine numbers that are divisible by 5 from different sets of numbers.
3. Appreciate how numbers that are divisible by 5 serve a purpose in mathematics and real-life applications.

Key Inquiry Question(s):

- Which numbers are divisible by 5?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 24-25)
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson on factors.
- Engage learners in a discussion about what they already know about the number 5.
- Encourage students to read and discuss the relevant sections from their Learner's Book, highlighting the significance of divisibility by 5.

Lesson Development (30 minutes):

Step 1: Introduction to Divisibility by 5

- Explain the rule for determining if a number is divisible by 5 (i.e., a number is divisible by 5 if it ends in 0 or 5).
- Provide examples (e.g., 10, 15, 20) and non-examples (e.g., 13, 22).

Step 2: Practicing with Number Cards

- Divide learners into pairs and provide them with number cards (e.g., numbers from 1 to 50).
- Instruct them to identify and sort these numbers into two groups: divisible by 5 and not divisible by 5.

Step 3: Collaborative List Creation

- Have groups share their findings and compile a list on the board of all numbers they identified as divisible by 5.
- Discuss any patterns they notice in the list (e.g., what digits these numbers end with).

Step 4: Real-Life Application

- Discuss how numbers divisible by 5 appear in everyday contexts (money, time, etc.).
- Have learners brainstorm examples of where they might encounter these numbers outside the classroom.

Conclusion (5 minutes):

- Summarize key points: rules of divisibility by 5, importance, and applications.
- Conduct a brief interactive quiz where students can shout out answers to questions about divisibility by 5.
- Preview the next lesson on divisibility by other numbers to spark curiosity.

Extended Activities:

- Create a Divisibility Chart: Students can design a classroom chart displaying numbers divisible by 5 contrasting them with numbers that are not, decorating it with examples from their lives (like prices or ages).
- Number Hunt: Encourage learners to find real-life objects in their environment that come in amounts divisible by 5 (e.g., packs of gum, coins) and report back in the next class.
- Homework Assignment: Find 10 items at home or in their neighborhood that can be grouped into sets of 5, and write a brief explanation of each item.

Teacher Self-Evaluation:

WEEK 4: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors: Divisibility Test of 8

Specific Learning Outcomes:

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

1. List the numbers that are divisible by 8.
2. Determine numbers that are divisible by 8 from different sets of numbers.
3. Appreciate the significance of numbers that are divisible by 8.

Key Inquiry Question:

- Which numbers are divisible by 8?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pp. 26-27
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson on basic divisibility concepts. Engage with the learners by asking them to define what it means for a number to be divisible by another.
- Guide learners to read and discuss relevant sections from pages 26-27 of their math books, emphasizing the concept of divisibility by 8 and its applications.

Lesson Development (30 minutes):

Step 1:

- Make Number Cards: Provide each student with a set of blank index cards. Instruct them to write different numbers (e.g., 1 to 100) on individual cards.

Step 2:

- Listing Divisible Numbers: Ask learners to work with their number cards and list any numbers that they believe are divisible by 8, discussing their thought processes as they work together.

Step 3:

- Divisibility Test: Introduce the divisibility rule for 8: A number is divisible by 8 if the last three digits of the number form a number that is divisible by 8 (for numbers greater than 1000). For numbers less than 1000, they can check if the number can be divided by 8 without a remainder. Have them practice testing numbers using their cards.

Step 4:

- Group Activity: Provide a mixed set of numbers (some divisible by 8, others not) to small groups. Instruct them to sort the numbers into two categories: divisible by 8 and not divisible by 8. Encourage them to justify their reasoning while sorting.

Conclusion (5 minutes):

- Summarize key points from the lesson and revisit the specific learning outcomes achieved.
- Conduct a brief interactive activity where each group presents one number they found to be divisible by 8 and one they found that is not, explaining why.
- Prepare learners for the next session by previewing topics such as multiples of numbers or extending their understanding of factors.

Extended Activities:

- Research Project: Assign learners to research and present real-world applications or occurrences of numbers divisible by 8 (e.g., coding, architecture) in the next class.
- Online Quiz: Encourage students to use online platforms such as Kahoot or Quizizz to take quizzes about divisibility rules, focusing on 8 and other numbers.
- Creative Games: Create a board game where players roll a dice and move spaces based on whether the number rolled is divisible by 8.

Teacher Self-Evaluation:

WEEK 5: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors - Divisibility Test

Specific Learning Outcomes:

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

1. List the numbers that are divisible by 9.
2. Determine numbers that are divisible by 9 from different sets of numbers.
3. Appreciate numbers that are divisible by 9.

Key Inquiry Question:

- Which numbers are divisible by 9?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 27-28
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review Previous Lesson:
- Ask students to recall what they learned in the last lesson about factors and divisibility.
- Discussion:
- Guide learners to read and discuss the relevant content in the learner's book, focusing on divisibility tests, particularly that of 9.

Lesson Development (30 minutes):

Step 1:

- Making Number Cards: Each student creates cards with numbers from 1 to 100.

Step 2:

- Listing Divisible Numbers: In their groups, students sort the number cards to identify and list all numbers that are divisible by 9.

Step 3:

- Determining Divisibility: Students will use their multiplication tables to check divisibility for a new set of numbers (e.g., 45, 72, 18, 55) and write down which of these are divisible by 9.

Step 4:

- Sharing and Discussing Findings: Each group shares their lists and findings with the class. Discuss why some numbers are divisible by 9 and others are not, emphasizing the significance of the divisibility rule (the sum of the digits in a number is divisible by 9).

Conclusion (5 minutes):

- Summarization:

- Highlight key points learned about numbers divisible by 9.
- Interactive Activity:
 - Engage students in a quick round of a game, like “Divisibility Bingo,” where they use their previous work to identify numbers divisible by 9.
- Preview of Next Session:
 - Give a brief insight into the next topic, possibly about other divisibility rules (e.g., divisibility by 3 or 6) to spark curiosity.

Extended Activities:

- Exploration Activity: Have students research and create a small poster about the significance of the number 9 in culture or mathematics (e.g., 9 planets, 9 lives of a cat) to deepen their appreciation for numbers.
- Real-world Application: Challenge students to find examples of divisible numbers in their everyday lives (such as in receipts, sports scores, etc.) to relate math to real-world scenarios.

Teacher Self-Evaluation:

WEEK 5: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors: Divisibility test of 10

Specific Learning Outcomes:

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

1. List the numbers that are divisible by 10.
2. Determine numbers that are divisible by 10 from different sets of numbers.
3. Appreciate the significance of numbers that are divisible by 10.

Key Inquiry Question:

- Which numbers are divisible by 10?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 28
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin by reviewing the previous lesson on factors and multiples. Ask students to share their thoughts or any questions they might have.
- Introduce the key concepts regarding divisibility, focusing on the rule for 10. Discuss why understanding divisibility is useful in mathematics.

Lesson Development (30 minutes):

Step 1: Understanding Divisibility by 10

- Explain the rule of divisibility by 10: A number is divisible by 10 if it ends in a 0.
- Provide examples on the board and ask students to identify the pattern.
- Use the number chart to highlight various numbers and their ending digits.

Step 2: Creating Number Cards

- In pairs, have students create number cards with numbers ranging from 1 to 100.
- Ask them to sort these cards into two groups: divisible by 10 and not divisible by 10.
- Monitor their discussions and assist where necessary.

Step 3: Listing Divisible Numbers

- Have each pair present their group of numbers that are divisible by 10.
- As a class, compile a master list on the board, reinforcing the rule that governs divisibility by 10.

Step 4: Working on Task 8

- Introduce Task 8 from the learner's book related to finding numbers divisible by 10.
- Guide students as they complete the task, either independently or in small groups.

Conclusion (5 minutes):

- Summarize the key points covered: the rule for determining divisibility by 10, the process of identifying numbers that meet this rule, and the practical applications of this knowledge.
- Conduct a brief interactive activity, such as a quick quiz where students shout out numbers and others determine if they are divisible by 10.
- Preview the next session's topics, encouraging students to think about how divisibility by 10 might relate to other numbers and concepts they will study.

Extended Activities:

- Encourage students to research and present on real-world applications of divisibility by 10 (e.g., money, measurements).
- Assign a worksheet where students find and categorize various numbers from 1 to 200 into 'Divisible by 10' and 'Not Divisible by 10' columns.
- Organize a game where students have to guess a number and determine if it is divisible by 10 within a set time limit.

Teacher Self-Evaluation:

WEEK 5: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Factors: Divisibility test of 11

Specific Learning Outcomes:

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

1. List the numbers that are divisible by 11.
2. Determine numbers that are divisible by 11 from different sets of numbers.
3. Appreciate numbers that are divisible by 11.

Key Inquiry Question:

- Which numbers are divisible by 11?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 29-30
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson focusing on factors and divisibility.
- Guide learners to read and discuss relevant content from the mathematics learner's book, particularly emphasizing the key concept of divisibility by 11, and ask some probing questions to engage students.

Lesson Development (30 minutes):

Step 1: Introduction to Divisibility by 11

- Explain the rule for determining if a number is divisible by 11 (the difference between the sum of the digits at odd positions and the sum of the digits at even positions should be either 0 or a multiple of 11).
- Provide examples (e.g., check if 121 is divisible by 11).

Step 2: Creating Number Cards

- In pairs, have learners create number cards from 1 to 100.
- They will take turns to select a card and apply the divisibility rule, determining if the number is divisible by 11.

Step 3: Exploring Sets of Numbers

- Provide different sets of numbers (e.g. 33, 45, 55, 121, 200) for learners to analyze.
- In groups, students will discuss and identify which numbers in the sets are divisible by 11, documenting their findings.

Step 4: Recitation of the Poem

- Introduce a fun poem related to numbers and divisibility (can be a short rhyme about 11s).
- Have students recite the poem aloud together to reinforce the concept in a creative way.

Conclusion (5 minutes):

- Summarize key points: what makes a number divisible by 11 and examples discussed in the lesson.
- Conduct a quick interactive quiz: call out a number, and students respond if it is divisible by 11 with a thumbs-up or thumbs-down.
- Preview the next session, which will cover greater factors and an introduction to prime numbers.

Extended Activities:

1. Divisibility Challenge: Create a divisibility game where students can test each other's number cards with different divisibility rules, including 2, 3, 5, and 11.
2. What's the Pattern?: Encourage students to explore the patterns in the multiples of 11 (e.g., 11, 22, 33...) and discuss what they notice.
3. Create Your Own Test: Have students come up with their own divisibility tests for a number of their choice and present it to the class.

Teacher Self-Evaluation:

WEEK 5: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Expressing composite numbers as a product of prime factors

Specific Learning Outcomes:

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

1. Identify different methods of factorization.
2. Use a factor tree to find factors of composite numbers.
3. Appreciate factors of composite numbers.

Key Inquiry Question:

- What are composite numbers?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 30-31)
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on prime numbers and their characteristics.
- Introduce composite numbers by guiding learners to read and discuss relevant content from the learning resources, emphasizing the definition and characteristics of composite numbers.

Lesson Development (30 minutes):

Step 1: Introduction to Composite Numbers

- Define composite numbers and discuss how they differ from prime numbers.
- Ask learners to brainstorm examples of composite numbers and record them on the board.

Step 2: Methods of Factorization

- Explain various methods of factorization: listing factors, using the division method, and the factor tree method.
- Demonstrate how to find factors of a given composite number using these methods.
- Have learners practice finding factors of a few sample composite numbers in pairs.

Step 3: Using Factor Trees

- Introduce the factor tree method in detail.
- Walk through an example together with the class, creating a factor tree for a composite number (e.g., 24).
- Encourage learners to create their own factor trees for different composite numbers using collaborative group work.

Step 4: Discussion and Appreciation of Factors

- Facilitate a discussion on why understanding factors, especially prime factors, is important in mathematics.

- Relate the concept to real-life applications, such as simplifying fractions or understanding common multiples.

Conclusion (5 minutes):

- Summarize key points discussed: definition of composite numbers, factorization methods, and construction of factor trees.
- Conduct a brief interactive quiz where learners can identify whether a number is composite and apply factorization methods.
- Preview the next session on greatest common factors and least common multiples, encouraging students to think about how factorization plays a role in those topics.

Extended Activities:

- Homework Assignment: Have learners find the prime factorization of 10 different composite numbers at home and create a poster presenting their findings.
- Class Project: Organize a “Factorization Challenge” where learners work in teams to solve factorization problems, earning points for correct answers.
- Online Practice: Recommend educational websites or apps where students can engage in interactive activities about factors and primes.

Teacher Self-Evaluation:

WEEK 5: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Expressing composite numbers as a product of prime factors

Specific Learning Outcomes:

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

1. Explain the meaning of prime factors.
2. Express composite numbers as a product of prime factors.
3. Appreciate the significance of prime factors in composite numbers.

Key Inquiry Question(s):

- What is a prime factor? Give examples.

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 32
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review: Recap the previous lesson focused on numbers and their classifications (e.g., whole numbers, natural numbers).
- Discussion: Read aloud from Smart Minds Mathematics and facilitate a conversation about number types, highlighting prime numbers and composite numbers.

Lesson Development (30 minutes):

Step 1: Introduction to Prime Factors

- Activity: Explain what prime factors are. A prime factor is a factor of a number that is itself a prime number (e.g., 2, 3, 5).
- Examples: Use small composite numbers like 6 (factors are 1, 2, 3, 6) to identify that 2 and 3 are the prime factors.

Step 2: Identifying Prime Factors

- Activity: Hand out multiplication tables and prime number charts.
- Guided Practice: In pairs, learners will select different composite numbers and list their factors.
- Discussion: Have learners identify and circle the prime factors from their lists.

Step 3: Expressing Composite Numbers as Products of Prime Factors

- Direct Practice: Introduce the method of factor trees. Show how to break down a composite number (e.g., $12 \rightarrow 2 \times 6 \rightarrow 2 \times 2 \times 3$) into its prime factors.
- Peer Activity: In groups, learners create factor trees for composite numbers (e.g., 18, 30) and present to the class.

Step 4: Application and Appreciation of Prime Factors

- Discussion: Discuss why prime factors are important, such as their role in finding the greatest common divisor (GCD) or least common multiple (LCM).
- Example: Provide a real-world scenario for context, such as explaining how prime factorization helps in packaging items efficiently.

Conclusion (5 minutes):

- Summarize: Recap the definition of prime factors and how to express composite numbers as products of prime factors.
- Interactive Activity: Conduct a quick quiz or game with questions about identifying prime factors from given composite numbers.
- Preview: Briefly explain what will be covered in the next lesson, which might focus on GCD and LCM using prime factors.

Extended Activities:

- Homework Assignment: Have learners find the prime factors of their ages or the ages of family members and express them as products.
- Creative Task: Create a poster showing the prime factorization of different composite numbers and include images or drawings reflecting real-life examples (e.g., grouping items).

Teacher Self-Evaluation:

WEEK 6: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Greatest Common Divisor (GCD)

Specific Learning Outcomes:

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

1. Explain the meaning of the Greatest Common Divisor (GCD).
2. Determine the factors that are common in various numbers.
3. Appreciate the use of GCD in problem-solving.

Key Inquiry Question(s):

- What is the GCD?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 33-34
- Place value apparatus
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on factors and multiples.
- Guide learners to discuss the relevant content from the learning resources. Highlight key concepts and terms related to GCD.

Lesson Development (30 minutes):

Step 1: Introduction to GCD

- Define the Greatest Common Divisor (GCD) through examples.
- Ask learners to brainstorm pairs of numbers and identify their factors.
- Elicit responses to lead into the concept of common factors.

Step 2: Identifying Common Factors

- In pairs, learners will select two different numbers and list out all of their factors.
- Facilitate a discussion on how to determine which factors are common to both numbers.
- Guide them to find the GCD using their lists of factors.

Step 3: Application of GCD

- Present a word problem that requires finding the GCD to solve (e.g., "If two pieces of ribbon are 24 cm and 36 cm long, what is the longest length that can cut both ribbons evenly?").
- Show learners how to apply what they've learned to find the solution.

Step 4: Group Activity

- Form small groups and assign each group a set of three different numbers.
- Have them identify the GCD of their numbers and prepare to share their findings with the class.

Conclusion (5 minutes):

- Summarize key points on GCD, common factors, and their applications.
- Conduct a brief interactive quiz where learners answer questions about the GCD of different number pairs.
- Preview the next lesson, hinting at how GCD can be applied in solving real-life problems involving ratios.

Extended Activities:

- Have learners create a small poster illustrating the GCD of various sets of numbers including a short explanation of why knowing the GCD is useful.
- Assign a homework task where students find examples of GCD in real-life scenarios, such as dividing things evenly (e.g., candies among friends).

Teacher Self-Evaluation:

WEEK 6: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Least Common Multiple (LCM)

Specific Learning Outcomes:

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

1. Explain the meaning of Least Common Multiple (LCM).
2. Calculate the LCM of different numbers.
3. Appreciate the use of LCM.

Key Inquiry Questions:

- What is LCM?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 34-35
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on multiples and factors.
- Guide learners to read and discuss relevant content from the learning resources (pg. 34-35), focusing on the definition of LCM.

Lesson Development (30 minutes):

Step 1: Introduction to LCM

- Begin with a clear definition of LCM. Explain that it is the smallest multiple that two or more numbers share.
- Use a simple example with smaller numbers (e.g., finding the LCM of 4 and 6) and illustrate it using the multiplication tables.

Step 2: Finding the LCM

- Guide students on how to calculate LCM using two methods: listing multiples and prime factorization.
- Listing Multiples: Start with small numbers, show the multiples, and identify the least common one.
- Prime Factorization: Demonstrate finding prime factors and constructing the LCM based on the highest powers of these factors.

Step 3: Practice Calculating LCM

- Divide learners into pairs or small groups to practice calculating the LCM of selected numbers. Provide them with different sets of numbers (e.g., 3 & 5, 12 & 15).
- Monitor their progress, offering help when needed.

Step 4: Play Digital Games

- Introduce an interactive digital game that focuses on LCM in a fun way. Allow students to engage and apply their understanding in a gamified environment.

Conclusion (5 minutes):

- Summarize the key points discussed: the definition of LCM, methods of calculating it, and examples practiced.
- Conduct a brief interactive quiz, asking questions about what they've learned. Encourage learners to share their thoughts on the importance of LCM in real-life scenarios, such as scheduling.

Extended Activities:

1. LCM Scavenger Hunt: Have learners find real-life instances where they can apply LCM, such as in planning events or activities.
2. Create a Poster: Ask students to create a poster outlining the steps for calculating the LCM, with examples. Display these in the classroom.
3. Math Journals: Encourage learners to keep a math journal where they can write definitions, methods, and problems about LCM.

Teacher Self-Evaluation:

WEEK 6: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Comparing fractions and Arranging fractions in ascending order

Specific Learning Outcomes:

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

1. Define ascending order.
2. Arrange fractions in ascending order.
3. Enjoy arranging fractions in ascending order.

Key Inquiry Questions:

- What does ascending order mean?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pages 36-38
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on fractions. Start a brief discussion to recall prior knowledge.
- Ask learners to share what they remember about fractions.
- Introduce the focus of today's lesson: arranging fractions in ascending order, ensuring to highlight the term "ascending order."

Lesson Development (30 minutes):

Step 1: Define Ascending Order

- Explain the concept of ascending order in simple terms.
- Engage learners in a discussion. Ask guiding questions:
 - What happens when we arrange numbers from the smallest to the largest?
 - Can anyone provide real-life examples of arranging items?
- Write down key definitions on the board, emphasizing clarity.

Step 2: Understanding Fractions

- Briefly review what fractions are and how to compare them. Discuss numerators and denominators in relation to value.
- Use visual aids (e.g., number line or pie charts) to illustrate different fractions.

Step 3: Practice Arranging Fractions

- Provide learners with a set of fractions to arrange in ascending order (e.g., $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{3}$).
- In pairs, learners will discuss and arrange the fractions using their previous knowledge and the multiplication tables for assistance before sharing their answers with the class.

Step 4: Class Sharing

- Invite pairs to present their arrangements and clarify their thought processes.
- Discuss as a class why some arrangements may differ. Reinforce correct concepts and adjust any misunderstandings.

Conclusion (5 minutes):

- Summarize the key points: what ascending order means and how to arrange fractions.
- Conduct a quick interactive quiz or game where learners must shout out fractions or examples that would go in an ascending order.
- Preview the next session: "Next time, we will explore how to compare fractions with different denominators."

Extended Activities:

1. Fraction Art: Have learners create a visual art piece using different fractions and colors, then write a brief description of the fractions in ascending order.
2. Fraction Scavenger Hunt: Create a scavenger hunt where learners find everyday objects that can represent specific fractions and arrange them at the end based on their fractional values.
3. Online Games: Encourage the use of educational math websites or apps that focus on fractions, allowing learners to practice at home.

Teacher Self-Evaluation:

WEEK 6: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Comparing Fractions

Specific Learning Outcomes:

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

1. Define descending order.
2. Arrange fractions in descending order.
3. Enjoy arranging fractions in descending order.

Key Inquiry Question(s):

- What does descending order mean?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 38-40)
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on fractions and their comparisons.
- Guide learners to read and discuss the relevant content about descending order from the learning resources. Emphasize their understanding of what descending order means.

Lesson Development (30 minutes):

Step 1: Define Descending Order

- Discuss the meaning of "descending order" as a class.
- Write the definition on the board: "Descending order means arranging numbers or items from largest to smallest."
- Ask learners to give examples of other items that can be arranged in descending order (e.g., heights of students, scores in a game).

Step 2: Explore Fractions

- Introduce the concept of arranging fractions, reinforcing the idea of comparing their sizes.
- Display various fractions on the board (e.g., $\frac{1}{2}$, $\frac{3}{4}$, $\frac{2}{5}$, $\frac{5}{6}$) and remind students how to determine which fractions are larger or smaller.
- Use number charts to help visualize the fractions and find a common denominator if necessary.

Step 3: Model Arranging Fractions in Descending Order

- As a class, select several fractions and model how to arrange them in descending order on the board.
- Engage learners by asking leading questions, such as, "Which fraction is the largest? How do we know?"

Step 4: Independent or Group Practice

- Provide pairs or groups of students with sets of fractions to arrange in descending order on their own.
- Circulate the room to provide support and guidance as needed, encouraging collaboration and discussion among students.

Conclusion (5 minutes):

- Summarize key points from the lesson: the definition of descending order and the process of arranging fractions.
- Conduct a flash card activity where learners quickly state the fractions in descending order, to reinforce the main topic.
- Provide a preview of the next lesson, such as the introduction of mixed numbers or comparing fractions with unlike denominators.

Extended Activities:

- Create a “Fraction Poster” where learners illustrate and arrange different fractions in descending order using pictures or colored segments of circles to represent each fraction.
- Challenge students to create a short real-life scenario involving fractions that they can arrange in descending order, encouraging practical applications of the concept.

Teacher Self-Evaluation:

WEEK 6: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Adding Proper and Mixed Fractions

Specific Learning Outcomes:

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

1. Make fraction cards and use them to add fractions.
2. Add proper and mixed fractions accordingly.
3. Enjoy adding different fractions.

Key Inquiry Questions:

- Which formula do you use to add fractions?
- How do you convert a mixed fraction into an improper fraction?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 40-42)
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on the basics of fractions.
- Guide learners to read and discuss relevant content from pages 40-42 of the learner's book, focusing on the process of adding fractions, including necessary conversions.

Lesson Development (30 minutes):

Step 1: Making Fraction Cards

- Provide learners with materials (cardstock or paper) to create fraction cards. Each card can depict different proper and mixed fractions.
- Each learner should make at least five cards with various fractions. Encourage creativity in design and clarity in fraction representation.

Step 2: Introducing the Formula

- Explain the formula for adding fractions:
- For proper fractions with like denominators: $\left(\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c} \right)$
- For unlike denominators: Find a common denominator first.
- Convert a mixed fraction (e.g., $\left(2 \frac{1}{3} \right)$) into an improper fraction (e.g., $\left(\frac{7}{3} \right)$).
- Demonstrate examples on the board while inviting learners to contribute.

Step 3: Guided Practice with Fraction Cards

- In pairs, learners will use their fraction cards to practice adding fractions.
- Encourage them to verbally explain their process to their partner, specifically referencing the formula used.

Step 4: Independent Practice

- Give learners a set of problems that involve adding proper and mixed fractions. They will use their fraction cards to assist them in calculating answers.
- Monitor and provide support as necessary.

Conclusion (5 minutes):

- Summarize key points: the process of creating and using fraction cards, the formulas for adding fractions, and the steps for converting mixed fractions to improper.
- Conduct an interactive activity, such as a quick quiz game, where learners can answer questions using the fraction cards.
- Prepare learners for the next session by hinting towards subtracting fractions and how it relates to addition.

Extended Activities:

- Create a Fraction Recipe: Have students come up with a 'recipe' that requires adding different fractions (e.g., for a smoothie, requiring $\frac{1}{2}$ cup of milk and $\frac{1}{3}$ cup of yogurt). They can share these with the class.
- Fraction Art: Students can create artwork using fractions, showcasing different fraction combinations and explaining their addition.

Teacher Self-Evaluation:

WEEK 7: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Subtracting Proper and Mixed Fractions

Specific Learning Outcomes:

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

1. Make fraction cards and use them to subtract fractions.
2. Subtract proper and mixed fractions accordingly.
3. Have fun subtracting different fractions.

Key Inquiry Question(s):

- Which formula do you use to subtract fractions?
- How do you convert mixed fractions into improper fractions?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 42-44
- Number charts
- Multiplication tables

- Fraction cards (materials for making)

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on the basics of fractions, ensuring all students have a clear understanding.
- Guide learners to read and discuss the relevant sections in the Smart Minds Mathematics Learner's Book, specifically focusing on the subtraction of fractions. Highlight the importance of understanding both proper and mixed fractions.

Lesson Development (30 minutes):

Step 1: Make Fraction Cards

- In pairs, students will create their own fraction cards using paper. Each card should show a different proper fraction and mixed fraction. Encourage them to use colorful drawings and to ensure clarity in their fractions.

Step 2: Understanding the Formula for Subtracting Fractions

- Once the cards are made, guide the class through the formula for subtracting fractions. Use visuals on the board to demonstrate the steps in subtraction. Discuss finding a common denominator and how to apply it to both proper and mixed fractions.

Step 3: Subtracting Proper Fractions

- Ask students to select two proper fractions from their cards and demonstrate the subtraction process on the board, explaining each step to the class. Ensure that they can identify the lowest common denominator and check their work for accuracy.

Step 4: Subtracting Mixed Fractions

- Transition to mixed fractions. Show how to convert mixed fractions to improper fractions before subtracting. Use the fraction cards again for this step, and allow pairs to practice subtracting mixed fractions using their own cards. Provide guidance and ensure each pair explains their thought process as they work.

Conclusion (5 minutes):

- Summarize key points and learning objectives achieved during the lesson, revisiting the formulas and steps discussed.
- Conduct a quick interactive game where students can shout out correct answers to subtraction problems using their fraction cards.
- Prepare learners for the next session by introducing the concept of adding fractions and suggesting they think of practical situations where they might add or subtract fractions in daily life.

Extended Activities:

- Fraction Bingo: Create a bingo game featuring fraction problems, where students can match the answers to their cards. This can be done as homework or in the following lesson.
- Real-Life Fraction Problems: Encourage students to find real-life scenarios where fractions are used, such as in cooking or measuring. They can present their findings in the next class.
- Interactive Online Games: Recommend educational websites that offer practice on subtracting fractions for students who need additional support or want to practice at home.

Teacher Self-Evaluation:

WEEK 7: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Multiplying a Fraction by a Whole Number

Specific Learning Outcomes:

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

1. Explain how to multiply a fraction by a whole number.
2. Multiply fractions by whole numbers and give their answer in a simplified form.
3. Appreciate the importance of the multiplication table.

Key Inquiry Question(s):

- What is the simplified answer of $\frac{4}{10}$ by 20?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 44-45
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review previous lesson about fractions.
- Facilitate a discussion on the importance of understanding fractions, particularly in multiplication. Encourage students to share what they remember about multiplying fractions from the last lesson.

Lesson Development (30 minutes):

Step 1: Understanding the Concept

- Introduce the concept of multiplying a fraction by a whole number.
- Explain: "When multiplying a fraction by a whole number, you multiply the numerator by the whole number while keeping the denominator the same."
- Example: Multiply $\left(\frac{3}{4}\right)$ by 2. (Show how $(3 \times 2 = 6)$ and the denominator remains 4, giving $\left(\frac{6}{4}\right)$, which simplifies to $\left(\frac{3}{2}\right)$).

Step 2: Guided Practice

- Work through a few examples as a class, using the multiplication table and number charts.
- Example problems: Multiply $\left(\frac{5}{6}\right)$ by 3, $\left(\frac{1}{2}\right)$ by 4, and $\left(\frac{2}{5}\right)$ by 5.
- Discuss results and how to simplify each answer.

Step 3: Independent Practice

- Provide learners with worksheets containing a set of different fractions to multiply by whole numbers.
- Encourage them to work independently or in pairs and to simplify their answers.

Step 4: Group Discussion

- Bring the class back together and discuss the answers to the worksheet.

- Encourage students to explain how they arrived at their answers, promoting peer teaching.

Conclusion (5 minutes):

- Summarize key points covered in the lesson: the steps to multiply fractions by whole numbers and the significance of simplifying answers.
- Conduct a brief interactive quiz (using the inquiry question, "What is the simplified answer of $(\frac{4}{10})$ by 20?") to reinforce learning.
- Preview the next session, highlighting that they will explore dividing fractions next, and encourage them to think about how division relates to multiplication.

Extended Activities:

- Have learners create a poster that illustrates the steps for multiplying a fraction by a whole number with examples.
- Assign a project where students must find real-life examples where multiplying fractions is applicable, such as in cooking or construction.
- Encourage learners to practice multiplication tables with peer groups for enhancing their understanding of multiplying fractions more efficiently.

Teacher Self-Evaluation:

WEEK 7: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Multiplying a Fraction by a Fraction

Specific Learning Outcomes

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

1. Explain how to multiply a fraction by a fraction.
2. Multiply fractions by fractions and provide their answers in a simplified form.
3. Enjoy the process of multiplying fractions by fractions.

Key Inquiry Question

- What is the product of $\frac{7}{8}$ and $\frac{12}{14}$?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources

- Smart Minds Mathematics Learner's Book Grade 7 pg. 46
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Briefly review the previous lesson on fraction fundamentals, particularly focusing on the definition of fractions and their parts (numerator and denominator).
- Ask learners to share any insights from their reading of the relevant content from the learning resources, particularly emphasizing how fractions are multiplied.

Lesson Development (30 minutes):

Step 1: Explain the Concept

- Introduce the concept of multiplying fractions. Write the following on the board:

$\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$

$$\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$$

- Discuss this method using simple examples to illustrate how to multiply numerators together and denominators together.

Step 2: Guided Practice

- In pairs, have students multiply the fractions $\frac{3}{5} \times \frac{4}{7}$.
- Walk around the classroom to assist and provide feedback as needed.
- Ask a few pairs to share their procedure and answer with the class, ensuring they explain the simplification of their answers.

Step 3: Independent Practice

- Provide learners with several fraction pairs to multiply individually, including:
 - $\frac{1}{2} \times \frac{3}{4}$
 - $\frac{5}{6} \times \frac{2}{3}$

- $\left(\frac{7}{8} \times \frac{12}{14}\right)$
- Encourage them to simplify their answers where possible.

Step 4: Class Discussion

- After completing their individual work, bring the class together to discuss their answers.
- Focus on the product of $\left(\frac{7}{8}\right)$ and $\left(\frac{12}{14}\right)$, guiding them to find the answer together and simplify it (i.e., $\left(\frac{7 \times 12}{8 \times 14} = \frac{84}{112} = \frac{3}{4}\right)$).
- Reinforce the multiplication process and answer simplification with the class.

Conclusion (5 minutes):

- Summarize the key points covered in the lesson and relate back to the specific learning outcomes.
- Have a brief interactive quiz where students can participate by raising hands to answer quick questions about multiplying fractions.
- Preview the next lesson topic on dividing fractions and ask them to think about how this might relate to what they learned today.

Extended Activities:

1. Fraction Story Problems: Create word problems involving multiplication of fractions, encouraging learners to write their scenarios.
2. Recipe Adjustments: Ask students to modify a recipe by multiplying the fractions used in the ingredient list for different servings (e.g., doubling or halving the amounts).
3. Fraction Art: Use fractions to design a piece of art. Each color used can represent a fraction of the total area, and students can calculate the area for each color used.

Teacher Self-Evaluation:

WEEK 7: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Multiplying a Fraction by a Mixed Number

Specific Learning Outcomes:

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

1. Explain how to multiply a fraction by a mixed number.
2. Multiply fractions by mixed numbers and provide answers in simplified form.
3. Have fun multiplying fractions by mixed numbers.

Key Inquiry Question(s):

- What is the product of $\frac{2}{3}$ by $2\frac{1}{7}$?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 47
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Begin the lesson with a quick review of fractions from the previous class.
- Ask students what they recall about mixed numbers to activate prior knowledge.
- Guide learners to read and discuss the relevant content from the learning resources, encouraging them to identify key concepts related to multiplying fractions by mixed numbers.

Lesson Development (30 minutes):

Step 1: Understanding Mixed Numbers

- Introduce mixed numbers.
- Explain how to convert a mixed number into an improper fraction.
- Example: $2\frac{1}{7} = \frac{(2 \times 7) + 1}{7} = \frac{15}{7}$
- Use visual aids (like number lines) to make the concept clearer.

Step 2: Multiplying the Fractions

- Present the multiplication of a fraction by an improper fraction.
- Walk through the multiplication of $\frac{2}{3}$ by $\frac{15}{7}$ using the formula:

[

text{Multiply the numerators: } 2 \times 15

text{Multiply the denominators: } 3 \times 7

]

Step 3: Simplifying the Result

- Once students arrive at the product $\frac{30}{21}$, show how to simplify it.
- Discuss finding the greatest common divisor (GCD) to simplify $\frac{30}{21}$ to $\frac{10}{7}$.

Step 4: Practicing with Number Cards

- Provide learners with number cards for practice.
- In pairs, have them create their own mixed numbers and fractions, multiply them, and simplify their answers as demonstrated.

Conclusion (5 minutes):

- Summarize the key points: converting mixed numbers, multiplying fractions, and simplifying results.
- Conduct a brief interactive quiz where students share their answers and methods.
- Prepare learners for the next session by previewing upcoming topics, such as dividing fractions or real-world applications of fractions.

Extended Activities:

1. Fraction Hunt: Have students find examples of fractions and mixed numbers in their home environment (e.g., cooking measurements, shopping prices) and practice converting or multiplying them.
2. Fraction Art: Let students create a poster that visually represents fractions and mixed numbers, including examples of multiplication and illustrations.
3. Fraction Races: Set up a classroom race where students solve multiple fraction multiplication problems on the board in teams, promoting both competition and collaboration.

Teacher Self-Evaluation:

WEEK 7: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Reciprocal of Fractions

Specific Learning Outcomes:

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

1. Explain the meaning of reciprocal of fractions.
2. Work out the reciprocal of fractions.
3. Have fun working out reciprocal of fractions.

Key Inquiry Question:

- What is a reciprocal?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 48-49
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on fractions and their properties.
- Guide learners to read pages 48-49 in the Smart Minds Mathematics Learner's Book, concentrating on the content related to reciprocals. Facilitate a brief discussion to clarify understanding of key concepts.

Lesson Development (30 minutes):

Step 1: Understanding Reciprocals

- Define the term "reciprocal" using simple language (the reciprocal of a number is 1 divided by that number).
- Explain the reciprocal of a fraction (e.g., for the fraction $\frac{2}{3}$, the reciprocal is $\frac{3}{2}$).
- Use visual aids like number charts to show examples of fractions and their reciprocals.

Step 2: Working Out Reciprocals

- Provide learners with fractions and ask them to compute the reciprocals individually or in pairs.
- Circulate around the room to offer assistance and ensure understanding.
- Share answers as a class to promote collective learning and address misconceptions.

Step 3: Fun Activity

- Engage learners in a quiz or a matching game where they match fractions with their reciprocals. This can be done on the board or using digital tools if available.

Step 4: Real-life Application

- Discuss scenarios in real life where understanding reciprocals is beneficial (like recipes, dividing items among groups, etc.).
- Encourage learners to come up with their own examples.

Conclusion (5 minutes):

- Summarize the key points: the definition of a reciprocal, how to find the reciprocal of a fraction, and why it is useful.
- Conduct a brief interactive activity like a quick review quiz or a group discussion on what they learned.
- Preview the next session, introducing the concept of adding and subtracting fractions with different denominators and how reciprocals might come into play.

Extended Activities:

- Reciprocal Practice Worksheets: Distribute worksheets with a variety of fractions for students to find reciprocals, including both proper and improper fractions.
- Reciprocal Bingo: Create bingo cards with fractions, and call out their reciprocals for students to mark on their cards.
- Fraction Stories: Ask students to write a short story or a scenario where they would need to use reciprocals in real-life situations, enhancing both writing and mathematical skills.

Teacher Self-Evaluation:

WEEK 9: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Division of a fraction by a whole number

Specific Learning Outcomes:

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

1. Explain how to divide a fraction by a whole number.
2. Divide fractions by whole numbers and provide answers in simplified form.
3. Appreciate the importance of division in mathematics.

Key Inquiry Question:

- Which formula do you use to work out division involving fractions?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pages 49-50
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Start with a brief review of the previous lesson on fractions.
- Engage learners in reading and discussing the relevant content from the Smart Minds Mathematics book, focusing on understanding the key concepts of dividing fractions.

Lesson Development (30 minutes):

Step 1: Understand the Concept

- Explain the process of dividing a fraction by a whole number using the formula:

$$\left[\text{a/b} \div c = \text{a/b} \times \frac{1}{c} \right]$$

- Discuss why it is important to multiply by the reciprocal of the whole number.

Step 2: Modeling the Process

- Demonstrate an example on the board:

For example, to divide $\left(\frac{3}{4} \div 2 \right)$, show:

$$\left[\frac{3}{4} \div 2 = \frac{3}{4} \times \frac{1}{2} = \frac{3 \times 1}{4 \times 2} = \frac{3}{8} \right]$$

- Discuss the steps taken and highlight any pitfalls to avoid.

Step 3: Hands-On Practice

- Provide learners with fraction cards (e.g., $\left(\frac{5}{6} \right)$, $\left(\frac{7}{8} \right)$, $\left(\frac{2}{3} \right)$) and ask them to divide each by a whole number of their choosing.
- Encourage learners to work in pairs or small groups to discuss their findings.

Step 4: Simplification of Answers

- Once learners have computed their answers, guide them in simplifying their answers where necessary.

- Provide examples that require simplification, such as $\left(\frac{4}{8}\right)$ becoming $\left(\frac{1}{2}\right)$.

Conclusion (5 minutes):

- Summarize the key points discussed in the lesson, reinforcing the significance of understanding the division of fractions.
- Conduct a brief interactive activity (such as a quick quiz or a fraction relay game) to reinforce the main topics learned during the lesson.
- Prepare learners for the next session by previewing upcoming topics, encouraging them to think about questions related to fractions they might have.

Extended Activities:

- Assign learners to create a mini-project where they find real-life situations that involve dividing fractions (e.g., cooking, measuring).
- Encourage them to present their findings to the class in the next lesson.
- Provide worksheets with additional practice problems that require dividing fractions by whole numbers.

Teacher Self-Evaluation:

WEEK 9: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Division of a whole number by a fraction

Specific Learning Outcomes:

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

1. Explain how to divide a whole number by a fraction.
2. Divide whole numbers by fractions and give their answers in simplified form.
3. Appreciate the importance of division.

Key Inquiry Question:

How do we divide a whole number by a fraction?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 53
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on fractions and their properties.
- Ask students to share what they recall about fractions to activate prior knowledge.
- Guide learners to read relevant content from the learner's book, highlighting key concepts related to dividing whole numbers by fractions.

Lesson Development (30 minutes):

Step 1: Understanding Division by a Fraction

- Explain the concept that dividing by a fraction is the same as multiplying by its reciprocal.
- Provide an example: To solve $8 \div (1/2)$, demonstrate converting it to $8 \times (2/1)$.
- Engage students by doing an example together as a class.

Step 2: Demonstrating with Whole Numbers

- Present additional examples on the board:
- $6 \div (1/3) = 6 \times (3/1) = 18$.
- $12 \div (1/4) = 12 \times (4/1) = 48$.
- Guide learners to practice with a few examples in pairs, ensuring they simplify their answers.

Step 3: Group Practice

- Split the class into small groups.
- Provide each group with different whole numbers and fractions to divide and simplify.
- Circulate among the groups to provide support and ensure understanding.

Step 4: Class Discussion

- Bring the class back together to discuss the results of their group work.
- Encourage groups to share their answers and methods for solving the problems.
- Clarify any common misunderstandings.

Conclusion (5 minutes):

- Summarize the key points discussed in the lesson, emphasizing the method of dividing whole numbers by fractions.
- Conduct a brief interactive quiz where students can volunteer answers based on examples from the lesson.
- Preview the next lesson by hinting at real-world applications of fractions and division.

Extended Activities:

1. Fraction Story Problems: Create story problems where learners must apply division by fractions in contexts such as cooking, construction, or budgeting.
2. Online Fraction Games: Suggest learners use online resources or math games that focus on fraction operations to reinforce their understanding.
3. Fraction Projects: Assign a project where students must research and present a topic related to fractions in real life, demonstrating their importance and use in daily situations.

Teacher Self-Evaluation:

WEEK 9: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Fractions - Division of a Whole Number by a Fraction

Specific Learning Outcomes:

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

- 1.Explain how to divide a whole number by a fraction.
2. Divide whole numbers by fractions and give their answer in a simplified form.
3. Appreciate the importance of division.

Key Inquiry Question:

- How do we divide a whole number by a fraction?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 53
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on fractions.
- Guide learners to read and discuss relevant content from the learning resources, focusing on how to divide a whole number by a fraction.

Lesson Development (30 minutes):

Step 1: Understanding the Concept

- Start with a real-world example to explain the concept. For instance, "If you have 3 whole pizzas and you want to share them among $\frac{1}{2}$ of a group, how many pizzas does each half receive?"

- Introduce the rule: Dividing by a fraction is the same as multiplying by its reciprocal.

(If dividing by $\frac{1}{2}$, multiply by 2.)

Step 2: Demonstration

- Solve a few examples on the board:

1. $6 \div \frac{1}{3} = 6 * \frac{3}{1} = 18$

2. $8 \div \frac{1}{4} = 8 * \frac{4}{1} = 32$

- Show how to simplify the final answer when necessary.
- Discuss why multiplying by the reciprocal works.

Step 3: Guided Practice

- Have learners work in pairs to practice dividing whole numbers by fractions from examples given in the textbook.
- Encourage them to explain each step to their partner as they do the calculations.

Step 4: Independent Practice

- Assign practice problems for learners to complete individually.
- Monitor and provide support as needed for learners who may be struggling.

Conclusion (5 minutes):

- Summarize key points: The method of dividing a whole number by a fraction by using its reciprocal.
- Conduct a quick interactive quiz (e.g., raise hands for answers or use whiteboards) to reinforce the main topics covered in the lesson.
- Preview the next session, which will cover the application of division in real-life problem-solving scenarios involving fractions.

Extended Activities:**1. Real-life Application Assignment:**

- Have learners create their own word problems that involve dividing whole numbers by fractions and exchange them with classmates to solve.

2. Online Practice:

- Introduce educational websites or apps where students can practice dividing whole numbers by fractions through interactive games or problems.

3. Art Connection:

- Encourage students to create posters that visualize the concept of dividing a whole number by a fraction, reflecting on real-life scenarios.

Teacher Self-Evaluation:

WEEK 9: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Number sequence involving fractions

Specific Learning Outcomes:

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

1. Identify the rule that relates one number to the next consecutive numbers.
2. Determine the common difference to identify the rule of a sequence.
3. Appreciate the use of fractions in real-life situations.

Key Inquiry Question(s):

- What are the next two numbers in the sequence below: $4\frac{1}{2}$, 4, $3\frac{1}{2}$, 3, --, --?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 54-56
- Number charts
- Multiplication tables

Organisation of Learning:

Introduction (5 minutes):

- Briefly review the previous lesson on basic fractions.
- Guide learners to read and discuss relevant content from the learning resources, particularly focusing on identifying sequences and rules.

Lesson Development (30 minutes):

Step 1: Identify the Sequence

- Present the sequence: $4\frac{1}{2}$, 4, $3\frac{1}{2}$, 3.
- Ask students to observe the changes from one number to the next.
- In pairs, have them discuss what they notice and share their thoughts with the class.

Step 2: Determine the Common Difference

- Explain that the difference between the numbers is what keeps the sequence going.
- Guide students to calculate the difference between each number:
 - $4\frac{1}{2} - 4 = \frac{1}{2}$
 - $4 - 3\frac{1}{2} = \frac{1}{2}$
 - $3\frac{1}{2} - 3 = \frac{1}{2}$
- Facilitate a conversation about what this means for predicting the next numbers in the sequence.

Step 3: Predicting the Next Numbers

- Challenge students to use the common difference to find the next two numbers in the sequence.
- Ask them to calculate $3 - \frac{1}{2}$ and then $2\frac{1}{2}$.
- Facilitate a group discussion on their predictions.

Step 4: Real-Life Applications of Fractions

- Discuss some situations in daily life where fractions are typically used, such as cooking, measuring, or dividing items.
- Ask students to share examples and how understanding fractions can help in those scenarios.

Conclusion (5 minutes):

- Summarize the key points: identifying rules in sequences, the common difference, and the importance of fractions.
- Conduct a quick interactive quiz where students raise their hands for true or false questions based on the lesson.
- Prepare learners for the next session by introducing the idea of comparing and ordering fractions.

Extended Activities:

- Fraction Game: Create a game where students match fractions to real-life scenarios (like $\frac{1}{2}$ cup of sugar in a recipe).
- Creative Story: Ask students to write a short story involving at least three fractions, explaining their importance in the context of the story.
- Fraction Sequence Challenge: Provide students with different sequences and ask them to find the common difference and predict the next numbers.

Teacher Self-Evaluation:

WEEK 10: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Decimals - Place values of digits in decimals

Specific Learning Outcomes:

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

1. Copy and complete the table in the learner's book.
2. Determine the place value of different decimals.
3. Appreciate the use of decimals.

Key Inquiry Question:

- What is the place value of the digit in brackets 365.876 (7)?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 56-57
- Equivalent fraction board
- Circular and rectangular cut-outs

Organisation of Learning:

Introduction (5 minutes):

- Review the previous lesson on whole numbers and their place values.
- Engage learners in a brief discussion about where they encounter decimals in real life (e.g., money, measurements).
- Use the key inquiry question to prompt thinking: "What is the place value of the digit in brackets 365.876 (7)?" Allow a few learners to respond.

Lesson Development (30 minutes):

Step 1: Introduction to Decimal Place Values

- Explain the concept of place values in decimals using visual aids.
- Illustrate how the decimal point separates whole numbers from decimals and how each digit after the decimal point has a specific place value (tenths, hundredths, thousandths).
- Write examples on the board for the class to see.

Step 2: Guided Practice

- Instruct learners to copy the table from their learner's book. It should have columns for the digit, its place value, and its decimal representation.
- Work through a couple of examples together on the board, filling out the table with the learners' assistance.

Step 3: Pair/Group Activity

- Learners will work in pairs to determine the place value of the decimals provided in their books, including the focus number from the inquiry question. Encourage discussion and reasoning in pairs.

Step 4: Individual Practice

- Ask learners to select three different decimal numbers not discussed in class and record the place values in their tables.
- Circulate around the classroom to provide support where needed.

Conclusion (5 minutes):

- Summarize the key points about the place value of digits in decimals.
- Reinforce learning by asking students to share one thing they learned about decimals.
- Preview the next session: "Next time, we'll explore how to add and subtract decimals!"

Extended Activities:

- Decimal Games: Create a game where students must race to match decimal cards with their correct place value.
- Real-life Application: Have students find examples of decimals in advertisements or online shopping sites, then create a presentation on how decimals are used in pricing and measurements.

Teacher Self-Evaluation:

WEEK 10: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Decimals - Total Values of Digits in Decimals

Specific Learning Outcomes:

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

1. Identify the total value of decimals.
2. Determine the total value of different digits in different numbers.
3. Appreciate the total value of decimals.

Key Inquiry Question(s):

- What is the total value of each digit in the number 7.68231?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 58-59
- Equivalent fraction board
- Circular and rectangular cut-outs

Organisation of Learning:

Introduction (5 minutes):

- Begin by reviewing the previous lesson on basic decimal concepts.
- Encourage learners to read and discuss the relevant sections from the mathematics learner's book, highlighting the importance of understanding the value of each digit in decimals.

Lesson Development (30 minutes):

Step 1: Introduction to Decimal Values

- Activity: Explain the concept of decimal places (tenths, hundredths, thousandths, etc.).
- Demonstration: Use the number 7.68231 to identify the total value of each digit. For example, discuss how '6' represents $\frac{6}{10}$ (or 0.6), '8' represents $\frac{8}{100}$ (or 0.08), and so on.

Step 2: Hands-On Group Work

- Activity: In pairs, learners will use circular and rectangular cut-outs to visually represent decimal values.
- Task: Given the number 3.471, have each group determine the value of each digit and represent it using the cut-outs (e.g., using 3 whole units for '3', 4 segments for ' $\frac{4}{10}$ ', etc.).

Step 3: Practice Problems

- Activity: Individually, learners will complete practice exercises from the learner's book on pages 58-59.
- Tasks: Identify and calculate the total values of different digits from provided decimal numbers.

Step 4: Class Discussion and Sharing

- Activity: Bring the class back together and allow groups to share their findings.
- Discussion Questions: Ask, "What challenges did you face in determining the decimal values?" and "How can we ensure we correctly identify the total value in future exercises?"

Conclusion (5 minutes):

- Summarize the key points learned regarding the total value of decimal digits.
- Conduct a brief interactive activity, such as a quiz game, to reinforce the topic covered.
- Preview the next session by introducing the topic of rounding decimals and pose questions for learners to consider, like “Why is rounding important in our daily lives?”

Extended Activities:

1. Decimal Value Art: Have learners create artwork using decimals. For example, they can represent various decimal values through drawings or visual art projects, explaining the value of each digit in their creation.
2. Real-Life Decimal Applications: Learners can research and present examples of how decimals are used in real life, such as in finance, measurement, or statistics.
3. Decimal Bingo: Create a bingo game where learners must match decimal values to their corresponding representations or descriptions.

Teacher Self-Evaluation:

WEEK 10: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Decimals - Multiplying Decimals by a Whole Number

Specific Learning Outcomes:

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

1. Explain how to multiply a decimal by a whole number.
2. Multiply decimals by whole numbers and provide their answers in a simplified form.
3. Appreciate the importance of decimals in real-life contexts.

Key Inquiry Question(s):

- What is 0.3×6 ?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pages 59-60
- Equivalent fraction board
- Circular and Rectangular cutouts

Organisation of Learning:

Introduction (5 minutes):

- Review Previous Lesson: Recap previous discussions on fractions and decimals.
- Discussion: Guide learners in a group to read and discuss pages 59-60 from the Smart Minds Mathematics book. Focus on highlighting keywords and essential concepts of multiplying decimals.

Lesson Development (30 minutes):

Step 1: Understanding Decimals

- Activity: Start with a brief explanation of what decimals are and their place value. Use a number line or cutouts to visualize decimal placement.
- Discuss examples of decimals used in everyday situations (e.g., money, measurements).

Step 2: Explaining the Multiplication Process

- Interactive Instruction: Explain the steps to multiply a decimal by a whole number. Use the example of 0.3×6 , showing the difference if we write it as $(3 \times 6)/10$.
- Emphasize that after multiplying, adjust the decimal place back to its proper position.

Step 3: Guided Practice

- Group Work: In pairs, learners will solve a set of problems where they multiply various decimals by whole numbers (e.g., 0.5×4 , 0.7×3).
- Circulate to assist and ensure understanding, allowing students to explain their reasoning to each other.

Step 4: Independent Practice

- Individual Task: Distribute a worksheet with multiplication problems involving decimals. Students should complete the worksheet independently, ensuring they also simplify their answers.

- Encourage learners to show their work for clarity.

Conclusion (5 minutes):

- Summarize Key Points: Recap the steps learned today and address common challenges faced during the exercises.
- Interactive Activity: Conduct a quick game or quiz using a digital platform or hand signals to reinforce the learned concepts. Ask questions like, "What is 0.4×5 ?" and have students respond.
- Preview Next Lesson: Provide a brief introduction to the topic of dividing decimals, encouraging students to think about what challenges they may encounter in that area.

Extended Activities:

- Home Activity: Ask learners to write down instances where they encounter decimals in their daily lives (e.g., shopping, measurements) and create a short presentation to share with the class in the next lesson.
- Group Project: Organize a marketplace simulation where learners price items using decimals. They can then 'buy' and 'sell' items to practice multiplication of decimals using real-world scenarios.

Teacher Self-Evaluation:

WEEK 10: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Decimals

Specific Learning Outcomes:

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

- 1.Explain how to multiply decimals by decimals.
- 2.Multiply decimals by decimals and give their answer in a simplified form.
- 3.Have fun multiplying decimals by decimals.

Key Inquiry Question(s):

- What is 0.3×0.6 ?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 60-61
- Equivalent fraction board
- Circular and rectangular cut outs

Organisation of Learning:

Introduction (5 minutes):

1. Review the Previous Lesson: Begin by asking students to recall what they learned in the last lesson about decimals.
2. Discussion: Guide learners to read and discuss relevant content from the learning resources, focusing on what multiplication of decimals involves. Introduce the key inquiry question.

Lesson Development (30 minutes):

Step 1: Understanding Decimal Place Values

- Discuss the place values of decimals (tenths, hundredths, etc.) with cut-out circles and rectangles to visually represent decimals.
- Example: Show the value of 0.3 and 0.6 using these cut-outs.

Step 2: Setting Up the Multiplication

- Demonstrate how to set up a multiplication problem with decimals, without using the decimal point initially.
- Example: Multiply 3 by 6 first ($3 \times 6 = 18$).

Step 3: Placing the Decimal

- Explain how to count the total number of decimal places in the numbers being multiplied (e.g., 0.3 has 1 decimal place, 0.6 has 1 decimal place; total = 2).
- Show how to place the decimal in the answer (18 becomes 0.18).

Step 4: Practice Together

- In pairs, let students practice multiplying various decimal numbers by providing examples such as:
 - 0.4×0.5

- 0.2×0.7

- Encourage learners to explain their thought processes aloud to reinforce understanding.

Conclusion (5 minutes):

1. Summarize Key Points: Reiterate the main concepts discussed during the lesson, specifically how to multiply decimals and where to place the decimal point.
2. Interactive Activity: Conduct a quick game where students shout out answers to decimal multiplications (e.g., 0.4×0.8) to reinforce learning and promote engagement.
3. Preview Next Session: Briefly introduce what will be covered in the next lesson, piquing interest with more complex decimal operations or real-world applications.

Extended Activities:

1. Real-Life Applications: Ask students to calculate prices of items with decimals when shopping. For example, "If one pencil costs \$0.45, how much do 3 pencils cost?"
2. Decimal Art: Create art using cut-outs where students can color or design patterns that involve decimal values, discussing the decimal values used during the process.
3. Online Decimal Games: Encourage learners to explore interactive multiplication games online that focus on decimal operations to practice at home.

Teacher Self-Evaluation:

WEEK 10: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Decimals - Division of a Decimal by Whole Number

Specific Learning Outcomes:

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

1. Explain how to divide a decimal by a whole number.
2. Divide decimals by whole numbers and give their answers in simplified form.
3. Appreciate the importance of decimals in everyday life.

Key Inquiry Questions:

- Where are decimals applicable in real life?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 (pg. 61-62)
- Equivalent fraction board
- Circular and rectangular cut-outs

Organisation of Learning:

Introduction (5 minutes):

- Begin with a brief review of the previous lesson on decimals.
- Invite learners to read and discuss content from the Smart Minds Mathematics Learner's Book regarding the division of decimals.
- Guide a discussion that focuses on the importance of understanding decimals, emphasizing real-life applications (e.g., money, measurements).

Lesson Development (30 minutes):

Step 1: Understanding the Concept of Division with Decimals

- Explain the concept of dividing a decimal by a whole number using a simple example (e.g., $2.5 \div 5$).
- Demonstrate how to set up the division on the board.

Step 2: Division Procedure

- Walk learners through the step-by-step process:
 1. Move the decimal in the dividend (the number being divided) to the right to make it a whole number. Count how many places you moved the decimal.
 2. Divide the new whole number by the whole number divisor.
 3. Place the decimal in the quotient (the result) in the same position as in the original dividend.
 4. Simplify the answer, if necessary.
- Provide examples for students to solve independently or in pairs.

Step 3: Practice Problems

- Provide a few practice problems for learners to solve in pairs using circular and rectangular cut-outs as visual aids (e.g., $3.6 \div 4$, $7.2 \div 3$).

- Encourage learners to explain their thought processes as they work through the problems together.

Step 4: Real-Life Application

- Conduct a brief discussion on where decimals are used in real life (e.g., shopping, budgeting, cooking).
- Ask students to share examples related to their own experiences.

Conclusion (5 minutes):

- Summarize the key points discussed in the lesson:
- How to divide decimals.
- The significance of decimals in everyday life.
- Conduct a brief interactive quiz (e.g., using hand signals) to reinforce main topics.
- Preview the next session, hinting at how fractions relate to decimals.

Extended Activities:

- Create a real-life budgeting project where students must use decimal division to determine how much money they can allocate for different categories (e.g., savings, spending, donations).
- Use a cooking recipe to challenge students to adjust measurements using decimals (e.g., halving or doubling a recipe).
- Develop and solve story problems that require dividing decimals in practical scenarios.

Teacher Self-Evaluation:

WEEK 11: LESSON 1

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Decimals - Division of a Decimal by a Decimal

Specific Learning Outcomes:

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

1. Explain how to divide a decimal by a decimal.
2. Divide decimals by decimals and express their answers in a simplified form.
3. Appreciate the importance of decimals in everyday life.

Key Inquiry Question:

- Which formula do you use to work out division involving decimals?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 62-63
- Equivalent fraction board
- Circular and Rectangular cut outs

Organization of Learning:

Introduction (5 minutes):

- Begin with a quick review of the previous lesson on basic division.
- Ask learners to share examples of where they have encountered decimals in real life (e.g., shopping, measuring).
- Introduce the new topic by discussing how understanding decimal division can help in daily activities.

Lesson Development (30 minutes):

Step 1: Explaining the Concept

- Introduce the method of dividing decimals. Write the formula on the board: "To divide a decimal by a decimal, turn the divisor (the second number) into a whole number by moving the decimal point to the right. Move the decimal point in the dividend (the first number) the same number of places."
- Provide examples, showing the step-by-step process of converting decimals and performing the calculation.

Step 2: Guided Practice

- Divide learners into pairs or small groups. Give each group a set of decimal division problems to solve collaboratively using the method discussed.
- Circulate around the classroom to provide support and clarify concepts as necessary. Encourage students to explain their reasoning to one another.

Step 3: Independent Practice

- Distribute a worksheet with decimal division problems for learners to solve independently.
- Include a mix of problems that require them to simplify their answers.

Step 4: Digital Games

- Allow learners to use digital devices to access interactive games focused on dividing decimals.
- Recommend specific online resources that reinforce the skills learned in class.

Conclusion (5 minutes):

- Summarize key points covered in the lesson, emphasizing the process of decimal division.
- Conduct a quick interactive activity where students volunteer to share their answers from the worksheet and explain their approach.
- Preview the next lesson topic: "Decimal Fractions and Their Applications."

Extended Activities:

- Practical Application Project: Ask learners to bring in examples of prices from a grocery store or online shop that includes decimals. They can calculate the total costs, dividing by the number of items, and present their findings to the class.
- Create Your Own Game: Learners create a simple board game that requires players to solve decimal division problems to advance. They can bring it to class for others to play.

Teachers Self- Evaluation:

WEEK 11: LESSON 2

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Squares of Whole Numbers

Specific Learning Outcomes:

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

1. Identify squares of whole numbers.
2. Work out squares of numbers using long multiplication.
3. Enjoy working out squares of whole numbers.

Key Inquiry Question(s):

- What is the area of a square plot of land with length 130m?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7 pg. 64-65
- Place value charts
- Number cards

Organisation of Learning:

Introduction (5 minutes):

- Briefly review the previous lesson on multiplication.
- Guide learners to read relevant content from the learning resources and discuss what they understand about squares and how they relate to area, encouraging participation in understanding key concepts.

Lesson Development (30 minutes):

Step 1: Identify Squares of Whole Numbers

- Activity: Display a list of whole numbers up to 15 on the board. Ask learners to identify their squares (e.g., 1, 4, 9, 16, etc.).
- Discussion: Facilitate a conversation on what it means to find the square of a number and its significance in geometry (e.g., calculating area).

Step 2: Work Out Squares Using Long Multiplication

- Activity: Demonstrate the long multiplication method to calculate the square of a two-digit number (e.g., 12×12).
- Guided Practice: Allow learners to practice calculating squares of different numbers in pairs using long multiplication.

Step 3: Use a Calculator

- Activity: Introduce the calculator. Show learners how to use it to find squares of larger numbers (e.g., 25, 30, etc.) after discussing concepts for verification.
- Individual Practice: Each student finds squares of chosen numbers using calculators.

Step 4: Real-life Application

- Activity: Return to the key inquiry question: "What is the area of a square plot of land with length 130m?"

- Discussion: Explain how to find the area ($\text{Area} = \text{length} \times \text{width}$, and since it's a square, length equals width). Discuss the practical implications of calculating areas.

Conclusion (5 minutes):

- Summarize the key points: definition of squares, methods of calculation, and real-world applications.
- Conduct a brief interactive quiz (using number cards) to reinforce learning—ask learners to state squares of numbers called out by the teacher.
- Preview the next session which will involve exploring square roots and their relationships with squares.

Extended Activities:

- Square Art: Create a poster showing at least ten whole numbers and their squares, providing color illustrations to represent the squares mathematically (with grid squares).
- Real-life Measurement: Have students measure square spaces in their homes or schoolyard (like classroom dimensions) and calculate the area in square meters using the square of the lengths.
- Math Journal: Encourage learners to keep a math journal documenting interesting patterns they notice with squares and square roots.

Teacher Self-Evaluation:

WEEK 11: LESSON 3

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Squares of Fractions

Specific Learning Outcomes:

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

1. Identify the perfect square of fractions.
2. Work out the squares of different fractions.
3. Enjoy working out squares of different fractions.

Key Inquiry Question(s):

- What is the square of $\frac{2}{7}$?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 65-66
- Place value charts
- Number cards

Organisation of Learning:

Introduction (5 minutes):

- Begin with a quick recap of the previous lesson focused on basic fractions.
- Ask students if they remember how to find squares of whole numbers.
- Transition by introducing the topic of squares of fractions, directing learners to the relevant pages in the Learner's Book for a brief group reading and discussion.

Lesson Development (30 minutes):

Step 1: Understanding Perfect Squares

- Discuss what a perfect square is and provide examples (e.g., 1, 4, 9, 16).
- Explain the concept using fractions by showing examples such as $(1/2)^2 = 1/4$.
- Encourage students to think about what the perfect square of a fraction means.

Step 2: Identifying the Perfect Squares of Common Fractions

- Guide students to copy the chart on pages 65-66 from their books.
- In pairs, have students identify and list perfect squares for simple fractions (e.g., $(1/2)^2$, $(3/4)^2$).
- Ask groups to share their findings with the class, fostering peer learning.

Step 3: Working Out the Squares of Different Fractions

- Provide each student with number cards for fractions.
- Give them time to work independently on squaring various fractions, such as $2/3$, $3/5$, and $4/7$.
- Walk around to offer assistance as needed.

Step 4: Application and Practice

- Present the key inquiry question, "What is the square of $2/7$?" and ask students to solve this on their own or in pairs.

- After a few minutes, review the answer as a class and discuss different methods they used to arrive at the solution.

Conclusion (5 minutes):

- Summarize key points covered in the lesson, highlighting the steps taken to square fractions.
- Conduct a brief interactive activity, such as a quick quiz with fraction squares, to reinforce learned concepts.
- Provide a preview of the next lesson which will focus on the cube of fractions and their applications.

Extended Activities:

- Fraction Bingo: Create a bingo game where students find squares of fractions to cover numbers on their cards.
- Real-World Application: Ask students to research and present a real-life scenario where fractions and their squares are relevant (e.g., in cooking, construction).
- Online Practice: Suggest some online math platforms where students can practice squaring fractions in a fun and engaging way.

Teacher Self-Evaluation:

WEEK 11: LESSON 4

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Squares and Square Roots - Squares of Decimals

Specific Learning Outcomes:

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

1. Identify the perfect squares of decimals.
2. Calculate the square of different decimals.
3. Enjoy working out squares of various decimals.

Key Inquiry Question:

- What is the square of 1.24?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 67-68
- Place value charts
- Number cards

Organisation of Learning:

Introduction (5 minutes):

- Briefly review the previous lesson on square numbers, discussing the definition of perfect squares and how they relate to decimals.
- Guide learners to skim through the relevant sections of the Learner's Book (pg. 67-68) in pairs, encouraging discussion to strengthen understanding of the key concepts.

Lesson Development (30 minutes):

Step 1: Identify Perfect Squares of Decimals

- Introduce the concept of perfect squares by showing examples: 0.1 ($0.1^2 = 0.01$), 0.4 ($0.4^2 = 0.16$), 1.0 ($1.0^2 = 1.0$).
- Ask pairs to work together to identify other perfect squares of decimals from a given list (e.g., 0.2, 0.5, 0.8) and write down their findings.

Step 2: Calculating Squares of Different Decimals

- Explain how to square a decimal by using direct multiplication (e.g., 1.5×1.5).
- Provide practice problems on the board (e.g., What is $(1.2)^2$, $(0.7)^2$?). Students will work independently or with a partner to solve these examples.

Step 3: Group Activity: Square it Up!

- Divide learners into small groups and give each group a set of number cards with decimals.
- Each group will randomly pick a card, calculate the square of that decimal, and present their answer to the class.

Step 4: Interactive Questions

- Encourage students to ask questions and share techniques used in their calculations.
- Facilitate a class discussion around any challenges faced when calculating squares of decimals.

Conclusion (5 minutes):

- Summarize the main points of the lesson, highlighting the methods to identify and calculate squares of decimals.
- Conduct a quick quiz or a fun game where students can call out the squares of decimals as you present them.
- Provide a brief preview of the next session, which will cover square roots and how they relate to squares.

Extended Activities:

- Encourage learners to create a "Square Chart" as homework where they find and illustrate the squares of at least ten different decimals.
- Suggest online games or math apps focused on squares and square roots to reinforce their learning in a fun, interactive way.
- Organize a small competition where students square different decimals within a time limit, fostering a playful learning environment.

Teacher Self-Evaluation:

WEEK 11: LESSON 5

SCHOOL	LEVEL	LEARNING AREA	DATE	TIME	ROLL
	GRADE 7	MATHEMATICS			

Strand: Numbers

Sub Strand: Square roots of whole numbers

Specific Learning Outcomes:

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

1. Identify the square root of whole numbers.
2. Work out square roots of numbers using long multiplication.
3. Enjoy working out square roots of whole numbers.

Key Inquiry Question:

- What is the square root of 450, 241?

Core competencies	Values	PCIs
• Critical thinking and Problem solving • Digital literacy • Creativity and Imagination • Communication and Collaboration	• Respect • Unity • Peace • Social justice • Responsibility	• Social cohesion • Self- awareness • Citizenship • Safety • Self- esteem • Financial literacy

Learning Resources:

- Smart Minds Mathematics Learner's Book Grade 7, pg. 68-69
- Place value charts
- Number cards

Organisation of Learning:

Introduction (5 minutes):

- Begin by reviewing the previous lesson on basic number operations.
- Guide learners to read and discuss the relevant content from the Smart Minds Mathematics book, focusing on square roots and their significance.

Lesson Development (30 minutes):

Step 1: Introduction to Square Roots

- Explain the concept of square roots using simple definitions and examples.
- Ask the students to define what they think a square root is, providing examples like $\sqrt{4} = 2$, $\sqrt{9} = 3$.
- Use place value charts to visually represent square roots.

Step 2: Identifying Square Roots

- Provide a few whole numbers and ask learners to find the square roots (e.g., 1, 4, 9, 16, etc.).
- Use number cards to facilitate hands-on learning. Students can pick numbers and identify their square roots in pairs.

Step 3: Long Multiplication Method

- Introduce the long multiplication method for calculating square roots.
- Demonstrate the process by calculating $\sqrt{144}$ step-by-step using long multiplication.
- Have learners practice with numbers such as $\sqrt{225}$ and $\sqrt{361}$ using the same method.

Step 4: Using Calculators

- Teach learners how to use calculators to find square roots of larger numbers accurately.

- Show the calculation for $\sqrt{450}$ and $\sqrt{241}$ and allow learners to practice these calculations in pairs using calculators.

Conclusion (5 minutes):

- Summarize the key points learned during the lesson, including what a square root is, how to identify it, and the long multiplication method.
- Conduct a brief interactive quiz asking questions like "What is the square root of 64?"
- Preview the next session's topic on perfect squares and non-perfect squares, encouraging students to think about how many square roots they can identify in real life.

Extended Activities:

- Square Root Scavenger Hunt: Have students search for whole numbers in their environment and calculate their square roots.
- Root Estimation Game: Provide a list of whole numbers, and have students estimate their square roots, then check with calculations.
- Challenge Project: Ask learners to choose a number greater than 500 and explore its factors and the square root, preparing a brief presentation.

Teacher Self-Evaluation: