Year 4

Term 1

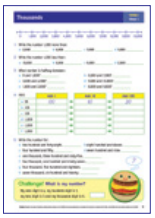
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Term 1 Teaching Overview

Week & Unit	High-Level Curriculum Focus	Student Book and Online lessons	Resources
Week 1 **Number: Number structures: Numbers to 10,000**	**Number** Number structures Reading, writing, comparing, and ordering whole numbers up to 10,000 and representing them using base-10 structure	**Pages 2–6** **Mathletics: New Courses, Skill Quests: Number structures**	Mini whiteboards, large classroom number line (marked in thousands), place value charts, base-10 materials, digit cards (0–9), number cards, place value clue cards, laminated price tags, play money
Week 2 **Number: Number structures: Four-digit numbers**	**Number** Number structures Reading, writing, comparing, and ordering whole numbers up to 10,000 and representing them using base-10 structure Rounding is based on identifying the nearest place value or unit (ten, hundred, thousand) for a given number; a number line supports this.	**Pages 7–11** **Mathletics: New Courses, Skill Quests: Number structures**	Place value charts, base-10 blocks, digit cards, number, mini whiteboards, place value cards, large number lines, numeral expander strips, arrow cards, open number lines
Week 3 **Number: Operations: Addition**	**Number** Operations Addition can be carried out mentally, using known facts, place value and partitioning, or column methods.	**Pages 12–16** **Mathletics: New Courses, Activities: Operations**	Place value charts, base-10 blocks, open number lines, large floor number cards, addition strategy/ challenge cards, mini whiteboards
Week 4 **Number: Operations: Subtraction**	**Number** Operations Subtraction can be carried out mentally, using known facts, place value and partitioning, or column methods.	**Pages 17–21** **Mathletics: New Courses, Skill Quests: Operations**	Place value charts, open number lines, base-10 blocks, number lines, subtraction strategy/challenge cards, digit cards, play money and price cards, mini whiteboards
Week 5 **Algebra: Equations and relationships: Patterns**	**Algebra** Equations and relationships Recognising, continuing, creating, and describing growing patterns that change by adding, subtracting, or multiplying by a constant whole number	**Pages 22–25** **Mathletics: New Courses, Activities: Patterns and equivalence**	Connecting cubes, number pattern cards, number lines, pattern challenge cards, counters, pattern blocks, large floor number line, hundred charts
Checkpoint 1 **Mid-term review**	**Assessment and Review** Review numbers to 10,000, operations and patterns.	**Pages 26–27**	
Week 6 **Number: Operations: More subtraction**	**Number** Operations, Financial mathematics Subtraction can be carried out mentally, using known facts, place value and partitioning, or column methods. Calculating the total cost of several items costing whole-dollar amounts including giving change	**Pages 28–32** **Mathletics: New Courses, Skill Quests: Operations**	Open number lines, place value charts, play money and coins, fact family cards, subtraction strategy cards, mini whiteboards, base-10 blocks, coin combination cards
Week 7 **Number: Operations: More addition**	**Number** Operations, Financial mathematics Addition can be carried out mentally, using known facts, place value and partitioning, or column methods. Calculating the total cost of several items costing whole-dollar amounts including giving change	**Pages 33–37** **Mathletics: New Courses, Skill Quests, Activities: Operations**	Play money and coins, place value charts, base-10 blocks, number lines, bar model templates, number cards, price cards, challenge/strategy cards, hundred charts
Week 8 **Geometry: Spatial reasoning: 3D shapes**	**Geometry** Spatial reasoning Visualising 3D shapes and connecting them with 2D diagrams, verbal descriptions, and the same shapes drawn from different perspectives	**Pages 38–42** **Mathletics: Activites, Skill Quests, Challenge: Geometry**	3D shape models, connecting cubes, straws and modelling clay, nets, shape property cards, pattern blocks, photographs of 3D shapes, stickers or markers
Week 9 **Measurement: Measuring: Length**	**Measurement** Measuring Different measurement tools and scales use different-sized units; the unit must be recorded with the measurement amount. Using the appropriate tool for measuring length	**Pages 43–47** **Mathletics: Activites, Skill Quests, Challenge: Measuring**	Metre rulers, tape measures, rulers, metre strips, trundle wheels, number lines, conversion charts
Checkpoint 2 **End-of-term review**	**Assessment and Review** Review numbers to 10,000, addition and subtraction, as well as patterns, 3D shapes and length.	**Pages 48–49**	

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Term 1 Week 1 Overview Number: Number structures: Numbers to 10,000

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Dollar amounts**	Compare and order whole dollar amounts to $10,000 using place value knowledge.	✓ Compare whole dollar amounts using place value ✓ Order dollar amounts from least to greatest ✓ Identify the greatest and smallest amounts ✓ Add and subtract whole dollar amounts mentally ✓ Explain reasoning using place value and money vocabulary	– Compare and order money amounts using place value – Identify the greatest and smallest values – Mentally add and subtract $10 and $100 – Solve simple financial reasoning problems – **Mathletics Online Practice** **New Courses: Whole number** **Are you ready?**	**Page 2:** Compare and order whole dollar amounts, add and subtract $10 and $100 mentally, identify amounts closest to given values and solve simple money problems. 
2 **Thousands**	Represent and describe whole numbers to 10,000 by counting and using place value.	✓ Identify numbers that are 1,000 more or 1,000 less ✓ Find halfway points between multiples of 1,000 ✓ Add 1, 10 and 100 to whole numbers ✓ Read and write whole numbers to 10,000 ✓ Explain how place value changes when numbers increase or decrease	– Count forwards and backwards in thousands – Find numbers that are 1,000 more or less – Identify halfway points between thousands – Read, write and represent numbers to 10,000 – **Skill Quests: Number structures: Count 10s 100 & 1,000** **Counting in 1,000s**	**Page 3:** Find numbers that are 1,000 more and 1,000 less, add 1, 10 and 100 to whole numbers, write numerals from number words and apply place value knowledge. 
3 **Numbers to 10,000**	Represent, read and write whole numbers to 10,000 using place value.	✓ Identify the value of each digit in a four-digit number ✓ Represent whole numbers using place value materials ✓ Write numerals and number words correctly ✓ Compare two whole numbers using place value ✓ Explain how place value helps to read large numbers	– Represent four-digit numbers using place value – Read and write numbers in numerals and words – Compare and explain the value of digits – Apply place value knowledge to numbers to 10,000 – **New Courses: Whole number** **Numbers to 10,000**	**Page 4:** Identify numbers represented with base-10 materials, write numerals as number words, compare four-digit numbers. 
4 **Place value**	Partition and represent four-digit numbers using place value knowledge.	✓ Partition four-digit numbers into thousands, hundreds, tens and ones ✓ Identify the value of individual digits ✓ Compose a number from its place value parts ✓ Order four-digit numbers using place value ✓ Explain how place value helps to describe numbers	– Partition and compose four-digit numbers – Identify the value of individual digits – Compare and order numbers using place value – Explain how digit position affects value – **New Courses: Whole number** **Place value**	**Page 5:** Partition four-digit numbers, compose numbers from expanded notation, order four-digit numbers and apply place value understanding. 
5 **Problem solving: Count by 25s and 50s**	Solve money problems by counting in 25s and 50s.	✓ Count forwards in 25s ✓ Count forwards in 50s ✓ Solve money problems using skip counting ✓ Choose an efficient strategy to solve a problem ✓ Explain how answer was found	– Skip count in 25s and 50s – Apply skip counting to money problems – Compare different solving strategies – Explain mathematical reasoning – **Skill Quests: Count multiples** **Counting in 25s and 50s**	**Page 6:** Solve real-life money problems by counting forwards in 25s and 50s, explain efficient strategies and justify solutions using mathematical reasoning. 

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Unit: Number: Number structures: Numbers to 10,000

Focus: Reading, writing, representing, comparing and partitioning whole numbers to 10,000 using place value knowledge and applying skip-counting strategies in money contexts

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Place value	Understand that four-digit numbers are made up of thousands, hundreds, tens and ones.	Correctly partitions numbers and explains the value of each digit.
Comparing numbers	Compare and order whole numbers using place value rather than counting.	Uses place value language to justify comparisons and ordering.
Reading and writing numbers	Read, write and represent whole numbers to 10,000 using numerals, number words and place value representations.	Accurately converts between representations and records numbers correctly.
Number patterns	Recognise patterns when counting by 1, 10, 100, 1,000, 25 and 50.	Continues skip-counting sequences accurately and identifies number patterns.
Financial mathematics	Apply place value and skip counting to solve money problems.	Selects efficient strategies and explains reasoning when solving money problems.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students comparing and ordering four-digit numbers during class discussions.	Are students using place value rather than counting digit by digit?
Oral Check	Ask students to explain the value of specific digits within four-digit numbers.	Can students explain why the same digit has different values in different positions?
Practical Task	Build and partition numbers using place value materials or digit cards.	Can students accurately represent, compose and decompose four-digit numbers?
Written Work	Review workbook pages 2–6.	Accuracy when comparing, partitioning, writing and ordering numbers and solving money problems.
Exit Ticket	Quick comparing and partitioning numbers questions.	Can students independently apply the weeks key concepts?

Quick Quiz / Exit Ticket (5 Questions)

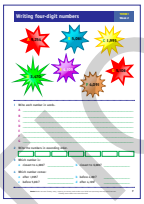
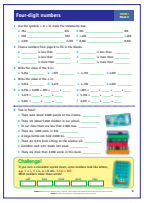
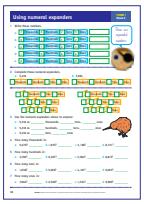
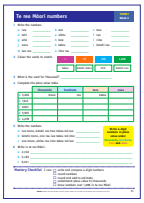
1. Which number is greater: 6,408 or 6,480?
2. Write 5,307 in expanded form.
3. What is 1,000 more than 4,000?
4. What is the value of the 7 in 7,254?
5. Harry earns $25 each hour. How much does he earn after 8 hours?

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
Which students are confidently reading, writing and representing numbers to 10,000?	
Which students are accurately identifying the value of digits using place value?	
Which students are confidently comparing and ordering numbers using place value strategies?	
Which students are confidently counting by 25s, 50s and 1,000s?	
What misconceptions were noticed (e.g. confusing the digit with its value or comparing numbers from left to right incorrectly)?	
What mathematical vocabulary requires further reinforcement (e.g. place value, thousands, hundreds, tens, ones, partition, numeral, value, skip count)?	
What adjustments should be made for future lessons (e.g. more place value investigations, digit reasoning activities, skip-counting practice or financial mathematics tasks)?	

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Term 1 Week 2 Overview Number: Number structures: Four-digit numbers

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Writing four-digit numbers**	Read, write and order four-digit numbers using place value knowledge.	✓ Write four-digit numbers in words ✓ Order four-digit numbers ✓ Identify benchmark numbers ✓ Find numbers before and after ✓ Explain place value	– Read and write numbers – Order numbers – Identify benchmark numbers – Find numbers before and after – **Mathletics Online Practice** **New Courses: Whole number** **Number Lines**	**Page 7:** Read and write four-digit numbers in words, order numbers, identify benchmark numbers and determine the numbers before and after a given number. 
2 **Rounding numbers**	Round whole numbers to the nearest 10, 100 and 1,000 using place value knowledge.	✓ Round to the nearest 10 ✓ Round to the nearest 100 ✓ Round to the nearest 1,000 ✓ Estimate using rounding ✓ Explain rounding decisions	– Round numbers – Estimate calculations – Explain rounding – Apply rounding in context – **New Courses: Whole number** **Rounding**	**Page 8:** Round whole numbers to the nearest 10, 100 and 1,000, estimate answers and apply rounding strategies. 
3 **Four-digit numbers**	Compare, partition and explain four-digit numbers using place value knowledge.	✓ Compare four-digit numbers ✓ Identify digit values ✓ Partition numbers ✓ Evaluate statements ✓ Justify answers	– Compare numbers – Identify digit values – Partition numbers – Evaluate true and false statements – **New Courses: Whole number** **Compare Numbers**	**Page 9:** Compare four-digit numbers, identify digit values, partition numbers into expanded form and determine whether place value statements are true or false. 
4 **Using numeral expanders**	Represent and regroup four-digit numbers using numeral expanders and place value knowledge.	✓ Use numeral expanders ✓ Partition numbers ✓ Regroup place value units ✓ Compare representations ✓ Explain regrouping	– Build numbers – Regroup place value units – Compare representations – Explain place value relationships – **New Courses: Whole number** **Partitioning**	**Page 10:** Represent four-digit numbers using numeral expanders, regroup place value units and express numbers in different place value forms. 
5 **Te reo Māori numbers**	Read, write and represent four-digit numbers using te reo Māori place value language.	✓ Read te reo Māori number words ✓ Match words to numerals ✓ Identify place value vocabulary ✓ Write four-digit numbers ✓ Explain place value	– Learn te reo Māori vocabulary – Match words and numerals – Apply place value – Read and write numbers – **New Courses: Whole number** **Number Words**	**Page 11:** Match te reo Māori number words to numerals, identify place value vocabulary and translate four-digit numbers between numerals and te reo Māori. 

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Unit: Number: Number structures: Four-digit numbers

Focus: Reading, writing, comparing, rounding, partitioning and representing four-digit numbers to 10,000 using place value knowledge, including numeral expanders and te reo Māori number vocabulary

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Reading and writing numbers	Accurately read and write four-digit numbers in numerals and words.	Correctly records numerals and number words and explains the value of each digit.
Comparing and ordering numbers	Compare and order four-digit numbers using place value knowledge.	Uses the > and < symbols correctly and justifies comparisons using thousands, hundreds, tens and ones.
Rounding and estimating	Round numbers to the nearest 10, 100 and 1,000 and use estimates appropriately.	Correctly identifies the digit used for rounding and explains why numbers round up or down.
Place value and regrouping	Partition, regroup and represent numbers using numeral expanders and expanded notation.	Demonstrates flexible understanding of equivalent place value representations.
Mathematical language	Use english and te reo māori place value vocabulary accurately when reading and representing numbers.	Correctly identifies and uses key place value vocabulary in both languages.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students comparing, partitioning and rounding numbers during whole-class discussions.	Are students using place value reasoning rather than relying on memorised procedures?
Oral Check	Ask students to explain how they know a number rounds up or down or why one number is greater than another.	Can students justify their thinking using mathematical vocabulary?
Practical Task	Build, regroup and compare four-digit numbers using numeral expanders, place value materials and digit cards.	Can students represent the same number in multiple equivalent ways?
Written Work	Review workbook pages 7–11.	Accuracy when reading, writing, comparing, rounding, partitioning and translating numbers.
Exit Ticket	Quick questions on four-digit numbers.	Can students independently apply the week's key concepts?

Quick Quiz / Exit Ticket (5 Questions)

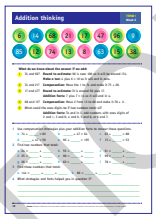
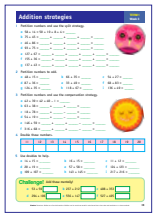
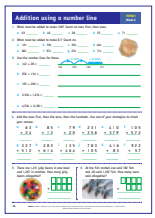
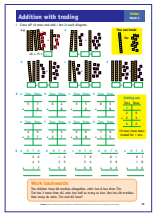
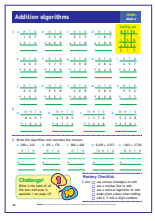
1. Write 4,072 in words.
2. Round 3,648 to the nearest hundred.
3. Which number is greater: 5,106 or 5,061?
4. Partition 7,340 into expanded form.
5. What is the te reo Māori word for 1,000?

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
Which students are confidently reading, writing and representing four-digit numbers?	
Which students are accurately comparing, ordering and partitioning numbers using place value?	
Which students understand why numbers round up or down when estimating?	
Which students are confidently regrouping numbers using numeral expanders and expanded notation?	
Which students are confidently using te reo Māori number vocabulary when reading and representing numbers?	
What misconceptions were noticed about place value, rounding or regrouping?	
What mathematical vocabulary requires further reinforcement?	
What adjustments should be made for future lessons to strengthen students' place value understanding?	

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Term 1 Week 3 Overview Number: Operations: Addition

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Addition thinking**	Apply efficient mental addition strategies using compensation, estimation and known facts.	✓ Use compensation efficiently ✓ Estimate before calculating ✓ Apply known addition facts ✓ Solve mental addition problems ✓ Explain strategy choices	– Use compensation to simplify calculations – Estimate before solving – Apply known addition facts – Explain efficient strategies – **Mathletics Online Practice** **New Courses: Addition** **Are you ready?**	**Page 12:** Apply compensation, estimation and known addition facts to solve mental addition problems and explain the strategies used. 
2 **Addition strategies**	Select and apply efficient mental addition strategies to solve addition problems.	✓ Partition numbers ✓ Apply compensation ✓ Use doubles and near doubles ✓ Select efficient strategies ✓ Explain reasoning	– Compare mental strategies – Solve using flexible thinking – Justify strategy choices – Discuss efficiency – **New Courses: Addition** **Make Easier Additions**	**Page 13:** Apply partitioning, compensation and doubles strategies to solve addition problems and explain the strategies used. 
3 **Addition using a number line**	Use number lines and place value strategies to solve addition problems.	✓ Use open number lines ✓ Partition numbers ✓ Count on efficiently ✓ Solve addition problems ✓ Explain strategies	– Model addition on number lines – Count on using place value – Partition into jumps – Connect strategies to algorithms – **New Courses: Addition** **Split Strategy +**	**Page 14:** Use open number lines to add numbers, partition numbers into hundreds, tens and ones and solve addition problems efficiently. 
4 **Addition with trading**	Apply place value and trading strategies using the standard written algorithm.	✓ Model trading ✓ Trade ones for tens ✓ Use written algorithms ✓ Record accurately ✓ Explain regrouping	– Model trading with place value materials – Record trades using columns – Connect concrete and written methods – Explain regrouping – **New Courses: Addition** **Written Methods +**	**Page 15:** Trade 10 ones for 1 ten, solve addition problems using place value materials and complete written algorithms involving regrouping. 
5 **Addition algorithms**	Apply the standard written addition algorithm to solve multi-digit addition problems.	✓ Set out algorithms correctly ✓ Apply written algorithms accurately ✓ Trade place values correctly ✓ Solve multi-digit problems ✓ Explain place value	– Align numbers using place value columns – Apply written algorithms – Trade place values accurately – Estimate and check answers – **Activities (Courses): Addition & subtraction** **Add 3-digit Numbers**	**Page 16:** Solve addition problems using the standard written algorithm, trade place values when required and apply addition algorithms to two-, three- and four-digit numbers. 

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Unit: Number: Operations: Addition

Focus: Mental addition strategies, place value partitioning, addition using open number lines, trading (regrouping), standard written addition algorithms, estimating to check answers and explaining mathematical reasoning

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Place value	Understand that numbers can be partitioned into thousands, hundreds, tens and ones when adding.	Correctly partitions numbers and maintains place value throughout calculations.
Mental addition	Select efficient mental strategies to solve addition problems.	Chooses appropriate strategies and explains why they are efficient.
Number lines	Use open number lines to represent addition and count on efficiently.	Uses appropriate jumps and records number line strategies accurately.
Trading (regrouping)	Understand that ten ones can be renamed as one ten and ten tens as one hundred.	Trades accurately using concrete materials and written algorithms.
Written algorithms	Use the standard written addition algorithm accurately.	Aligns place value columns correctly, records trades and calculates accurate totals.
Mathematical reasoning	Explain their thinking using appropriate mathematical language.	Justifies strategies and checks answers using estimation or alternative methods.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students using different addition strategies.	Are students choosing efficient strategies and using known facts?
Oral Check	Ask students to explain how they solved an addition problem.	Can students explain their strategy using place-value language?
Practical Task	Model addition using materials or an open number line.	Can students partition, regroup and represent addition accurately?
Written Work	Review workbook pages 12–16.	Accuracy with mental strategies, number lines, trading and written algorithms.
Exit Ticket	Quick addition problems.	Identify students that need support with addition skills.

Quick Quiz / Exit Ticket (5 Questions)

1. Solve 384 + 256 using a mental addition strategy.
2. Use an open number line to solve 472 + 219.
3. Solve 658 + 287 using the standard written algorithm, showing any trading.
4. Explain why trading ten ones for one ten does not change the value of the number.
5. Estimate and then solve 2,485 + 1,736. Explain whether your exact answer is reasonable.

Teaching as Inquiry: Reflection Notes

Reflection Prompts

Which students confidently selected efficient addition strategies without teacher support?

Who still relied heavily on concrete materials or counting strategies rather than place value reasoning?

Were students able to explain why trading is necessary when using the written algorithm?

Did students correctly align place value columns when solving written addition problems?

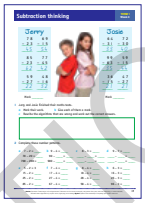
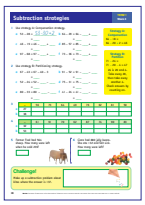
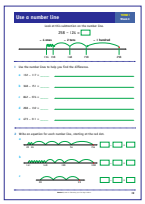
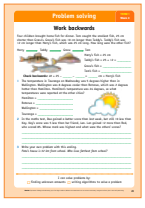
Which students accurately estimated answers to check the reasonableness of their calculations?

What misconceptions about trading or place value should be addressed before moving to subtraction algorithms?

Notes/Next Steps

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Term 1 Week 4 Overview Number: Operations: Subtraction

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Subtraction thinking**	Apply place value understanding and subtraction strategies to solve, check and explain subtraction problems accurately.	✓ Solve subtraction problems using efficient strategies ✓ Identify and correct errors ✓ Recognise subtraction patterns ✓ Explain subtraction using place value ✓ Check whether answers are reasonable	– Check subtraction algorithms – Identify calculation errors – Investigate subtraction patterns – Explain subtraction strategies – **Mathletics Online Practice** **New Courses: Subtraction** **Are you ready?**	**Page 17:** Check subtraction algorithms, identify and correct errors, complete subtraction patterns and apply subtraction facts using place value. 
2 **Subtraction strategies**	Apply compensation and partitioning strategies to solve and explain subtraction problems efficiently.	✓ Use compensation strategies ✓ Partition numbers to subtract ✓ Select efficient strategies ✓ Solve subtraction mentally ✓ Explain strategy choices	– Apply compensation – Use partitioning – Compare strategies – Select efficient methods – **New Courses: Subtraction** **Split strategy**	**Page 18:** Use compensation and partitioning strategies to solve subtraction problems, select efficient mental strategies and apply subtraction to real-world problems. 
3 **Use a number line**	Use open number lines and place value strategies to solve and explain subtraction problems efficiently.	✓ Use open number lines ✓ Partition numbers into place value parts ✓ Count back efficiently ✓ Record subtraction accurately ✓ Explain number line strategies	– Model subtraction on number lines – Partition subtraction amounts – Choose efficient jumps – Interpret number line representations – **Skill Quests: Add and subtract** **Adding & subtracting to 3-digits, number line**	**Page 19:** Use open number lines to solve subtraction problems, partition numbers into hundreds, tens and ones, and write subtraction equations from number line representations. 
4 **Subtraction from round numbers**	Use inverse operations and place value understanding to subtract from round numbers efficiently.	✓ Use inverse operations ✓ Find missing parts ✓ Apply subtraction to money problems ✓ Solve subtraction from round numbers ✓ Explain how addition checks subtraction	– Use inverse operations – Solve subtraction from round numbers – Apply money strategies – Explain subtraction using addition – **New Courses: Subtraction** **Bridging strategy**	**Page 20:** Use addition to find the difference when subtracting from round numbers, solve change problems and apply inverse operations to subtraction involving 100, 200, 500 and 1,000. 
5 **Problem solving: Work backwards**	Apply the 'work backwards' strategy to solve and explain multi-step addition and subtraction problems.	✓ Identify known and unknown information ✓ Work backwards to solve problems ✓ Record calculations logically ✓ Solve multi-step problems accurately ✓ Explain work backwards strategies	– Identify known information – Reverse operations – Solve multi-step problems – Explain work backwards strategies – **Skill Quests: Subtraction** **Using addition to subtract**	**Page 21:** Solve multi-step addition and subtraction problems by working backwards, identify unknown amounts and explain problem-solving strategies. 

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Unit: Number: Operations: Subtraction

Focus: Place value partitioning, compensation strategies, subtraction using open number lines, inverse operations, problem-solving strategies, selecting efficient subtraction strategies and explaining mathematical reasoning

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Subtraction strategies	Select and apply efficient subtraction strategies appropriate to different calculations.	Chooses compensation, partitioning or number lines appropriately and explains why the strategy was selected.
Place value	Use place value understanding to support mental and written subtraction.	Correctly partitions numbers and uses hundreds, tens and ones when subtracting.
Number lines	Represent subtraction accurately using open number lines.	Uses efficient place value jumps and explains each stage of the subtraction process.
Inverse operations	Recognise the relationship between addition and subtraction when finding differences.	Uses addition to solve subtraction from round numbers and checks answers accurately.
Problem solving	Solve multi-step problems by working backwards.	Identifies known information, reverses operations in the correct order and justifies each step.
Mathematical reasoning	Explain, justify and check mathematical thinking.	Uses appropriate mathematical vocabulary and verifies answers using efficient strategies.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students using different subtraction strategies.	Are students choosing efficient strategies and using known facts?
Oral Check	Ask students to explain how they solved a subtraction problem.	Can students explain compensation, partitioning or counting back?
Practical Task	Model subtraction using materials, a hundred square or number line.	Can students partition numbers and represent subtraction accurately?
Written Work	Review workbook pages 17–21.	Accuracy with mental strategies, number lines, subtraction and problem solving.
Exit Ticket	Quick subtraction problems.	Identify students that need support with subtraction skills.

Quick Quiz / Exit Ticket (5 Questions)

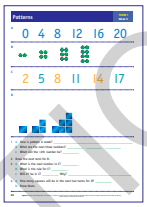
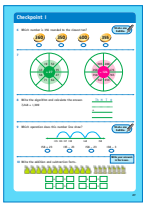
1. Correct the error in this calculation: 74 − 28 = 56.
2. Solve 83 − 47 using either compensation or partitioning.
3. Use an open number line to solve 268 − 132.
4. Use addition to solve 500 − 241 and explain your thinking.
5. A box contains some books. After 28 books are removed, 46 remain. How many books were in the box originally? Explain how you worked backwards.

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
Which students confidently selected efficient subtraction strategies without teacher support?	
Which students successfully explained subtraction using place value and mathematical vocabulary?	
Which students accurately used open number lines and inverse operations to solve subtraction problems?	
Which students confidently solved multi-step work backwards problems?	
What misconceptions were noticed about subtraction strategies, place value or inverse operations?	
What mathematical vocabulary requires further reinforcement?	
Which strategies or representations should be revisited before introducing the next unit?	
What adjustments should be made to strengthen students' confidence and flexibility with subtraction?	

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Term 1 Week 5 Overview Algebra: Equations and relationships: Patterns

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Patterns**	Identify, describe and extend growing patterns using number and visual representations.	✓ Identify pattern rules ✓ Continue number and visual patterns ✓ Predict future terms ✓ Explain how patterns grow ✓ Apply pattern rules to solve problems	– Identify pattern rules – Investigate visual patterns – Predict future terms – Explain pattern growth – **Mathletics Online Practice** **New Courses: Patterns and equivalence** **Are You Ready?**	**Page 22:** Identify and describe growing number and visual patterns, determine pattern rules, predict future terms and extend patterns using constant increases. 
2 **Patterns using shapes and numbers**	Identify, compare and extend growing number and shape patterns by applying pattern rules.	✓ Identify pattern rules ✓ Extend growing patterns ✓ Compare different patterns ✓ Predict future terms ✓ Explain pattern growth	– Compare growing patterns – Investigate shape patterns – Predict future terms – Explain similarities and differences – **New Courses: Patterns and equivalence** **Addition patterns 1**	**Page 23:** Extend growing number and shape patterns, compare patterns with the same rule, predict future terms and identify pattern rules using constant increases. 
3 **Patterns with numbers**	Identify, describe and apply number pattern rules to continue, create and explain numerical sequences.	✓ Identify number pattern rules ✓ Continue increasing and decreasing patterns ✓ Create number patterns ✓ Explain pattern changes ✓ Predict future terms	– Identify number rules – Compare increasing and decreasing patterns – Create number sequences – Explain relationships between terms – **New Courses: Patterns and equivalence** **Subtraction patterns 1**	**Page 24:** Identify and describe number pattern rules, continue growing and decreasing patterns, create patterns from given rules and predict future terms. 
4 **Problem solving: Frog jumps**	Apply pattern rules to solve, describe and create growing number patterns in problem-solving situations.	✓ Identify pattern rules ✓ Continue skip-counting patterns ✓ Predict future terms ✓ Create growing patterns ✓ Explain mathematical reasoning	– Solve pattern problems – Compare pattern rules – Create growing patterns – Apply pattern reasoning – **Activities (Course): Equations & relationships** **Counting on a 100 grid**	**Page 25:** Apply skip-counting patterns to solve problems, identify and describe pattern rules, predict future terms and create growing number patterns. 
5 **Checkpoint 1**	Demonstrate understanding of place value, operations and growing patterns by applying efficient strategies across a range of assessment tasks.	✓ Recognise and extend patterns ✓ Apply place value knowledge ✓ Use efficient calculation strategies ✓ Solve written problems accurately ✓ Explain mathematical thinking	– Complete Checkpoint 1 – Apply place value and operations – Demonstrate understanding of Weeks 1–5 concepts – Reflect on solution strategies	**Pages 26–27:** Complete Checkpoint 1 assessing place value, rounding, operations, written addition, number lines, number patterns and related addition and subtraction facts.  

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Unit: Algebra: Equations and relationships: Patterns

Focus: Growing number patterns, growing visual patterns, identifying and applying pattern rules, recognising constant change, predicting future terms, comparing pattern types and mathematical reasoning.

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Pattern recognition	Identify the rule in growing number and visual patterns.	Correctly identifies constant increases or decreases and explains the pattern rule.
Extending patterns	Continue patterns accurately using the identified rule.	Predicts future terms and extends sequences without losing the pattern.
Pattern reasoning	Compare, describe and justify different pattern rules.	Explains similarities and differences between patterns using mathematical vocabulary.
Creating patterns	Generate number and shape patterns from a given rule.	Creates accurate sequences that consistently follow the stated rule.
Problem solving	Apply pattern understanding in unfamiliar contexts.	Selects appropriate strategies to solve pattern-based investigations and explains reasoning.
Mathematical communication	Communicate mathematical thinking using appropriate language.	Uses terms such as 'pattern', 'rule', 'term', 'sequence', 'increase' and 'constant change' confidently.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students continuing and creating patterns.	Are students recognising how each pattern changes?
Oral Check	Ask students to explain the rule for a pattern.	Can students describe the rule and predict later terms?
Practical Task	Build growing patterns using shapes or counters.	Can students represent, extend and describe growing patterns?
Written Work	Review workbook pages 22–25.	Accuracy with continuing patterns, identifying rules and finding terms.
Exit Ticket	Continue a pattern and state the rule.	Identify students that need support with recognising and applying pattern rules.
Checkpoint 1	Review completed Checkpoint 1 (pages 26–27).	Identify strengths and misconceptions across number patterns, place value, rounding, operations and mathematical reasoning.

Quick Quiz / Exit Ticket (5 Questions)

1. Identify the rule for the pattern: 7, 11, 15, 19 ...
2. Continue the pattern: 2, 6, 10, 14 ...
3. A pattern starts at 9 and increases by 5. What are the next three terms?
4. Explain why the patterns 3, 7, 11, 15 and 8, 12, 16, 20 have the same rule.
5. Create your own growing pattern that increases by 6 and write the first five terms.

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
Which students confidently identified and explained pattern rules?	
Which students accurately predicted future terms without repeated counting?	
Which students demonstrated flexibility when comparing different pattern types?	
Which students successfully transferred their understanding to the Checkpoint assessment?	
What misconceptions were observed about growing patterns or constant change?	
What mathematical vocabulary requires further reinforcement?	
Which students require further support before introducing more complex algebraic patterns?	
What adjustments should be made to strengthen students' reasoning and pattern generalisation?	

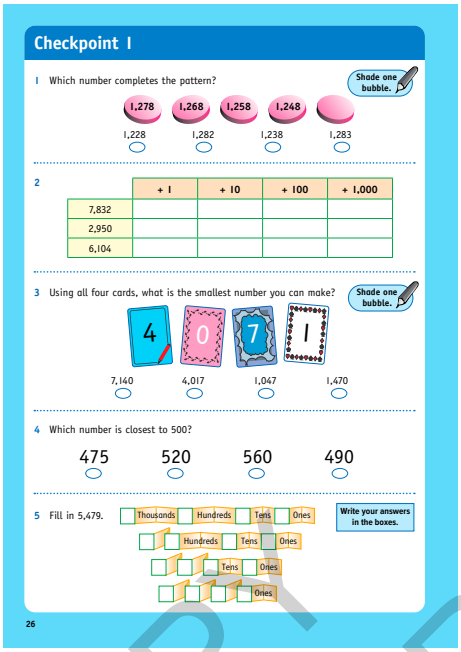
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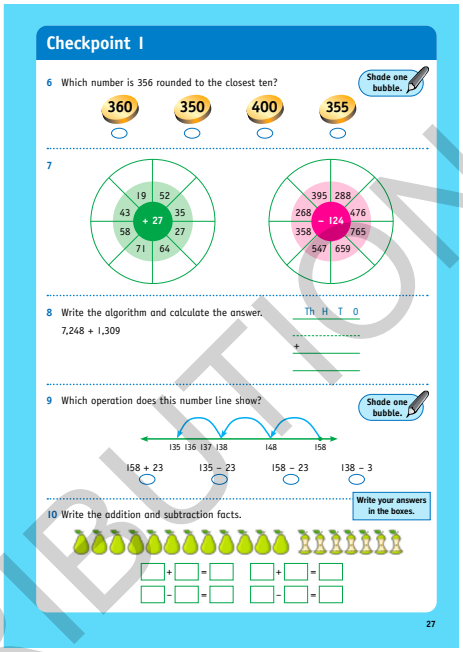
CHECKPOINT 1

Purpose

This Checkpoint assesses students' understanding of **place value**, **number patterns**, **rounding**, **addition**, **subtraction and growing patterns**. It provides teachers with a snapshot of students' ability to recognise and extend number patterns, apply place value knowledge, use efficient addition and subtraction strategies, solve written algorithms and explain mathematical reasoning.

The Checkpoint should take approximately **40–50 minutes** and may be completed over **two shorter sessions** if required.





Assessment Overview

Part	Focus	Questions	Curriculum Links	Skills Assessed
1–6	Number and place value	Number patterns, adding 1, 10, 100 and 1,000, forming and comparing four-digit numbers, partitioning and rounding	Number structures	Recognises place value to thousands, identifies the value of digits, adds powers of 10, composes and partitions four-digit numbers in different ways, compares numbers and rounds to the nearest 10
7–10	Addition and subtraction	Mental addition and subtraction, written addition, number-line strategies and related addition and subtraction facts	Operations	Uses mental strategies to add and subtract, applies place value in written addition, interprets subtraction on a number line, connects addition and subtraction as inverse operations and writes related number facts

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CHECKPOINT 1 Student Recording Sheet & Marking Rubric

Unit: Number: Number structures, Operations, Algebra: Equations and relationships
Weeks: 1–5 / Year 4 Mathematics **Total Marks:** 30

Student Name: **Date:**

Marking Sheet

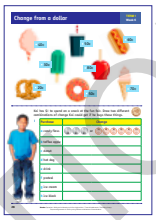
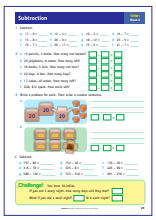
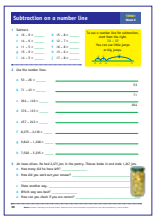
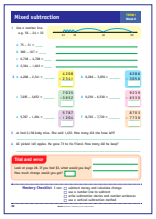
Part	Task	Max Marks	Student Score	Notes / Observations
1	Complete number pattern	2	/ 2	
2	Add 1, 10, 100 and 1,000	4	/ 4	
3	Make the smallest four-digit number	2	/ 2	
4	Identify the number closest to 500	2	/ 2	
5	Complete numeral expander	4	/ 4	
6	Round to the nearest ten	2	/ 2	
7	Complete operation wheels	5	/ 5	
8	Solve written addition	4	/ 4	
9	Identify number-line operation	2	/ 2	
10	Write related addition and subtraction facts	3	/ 3	
	TOTAL:	30	/ 30	

Achievement Rubric

Score Range	Progress Descriptor	Interpretation	Suggested Follow-Up
27–30	**Exceeding**	Accurate, confident understanding of place value, number patterns, rounding, addition and subtraction. Applies these skills independently in new situations.	Extend with larger numbers, more complex place-value patterns, rounding to different place values, multi-step calculations and problems requiring explanation and justification.
22–26	**Proficient**	Secure understanding of the concepts with only occasional errors and explains thinking clearly.	Reinforce place value to thousands, rounding, mental addition and subtraction, written algorithms and related number facts through varied problem-solving contexts.
17–21	**Consolidating**	Needs support with accuracy or applying skills consistently.	Continue practising number patterns, place-value partitioning, comparing and rounding numbers, and mental and written addition and subtraction strategies.
9–16	**Developing**	Partial understanding of the concepts and requires regular support to complete tasks successfully.	Provide explicit teaching using place-value materials, number lines and partitioning models, with guided practice in rounding and addition and subtraction strategies.
0–8	**Emerging**	Beginning to understand the assessed concepts and needs substantial support.	Return to foundational place-value experiences, counting patterns and basic addition and subtraction using concrete materials, visual models and frequent guided practice.

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Term 1 Week 6 Overview Number: Operations: More subtraction

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Change from a dollar**	Calculate and represent change from one dollar using efficient subtraction strategies and different coin combinations.	✓ Calculate change accurately ✓ Represent amounts using different coins ✓ Select efficient strategies ✓ Check money calculations ✓ Explain how change was found	– Compare coin combinations – Calculate change – Solve money problems – Explain strategies – **Mathletics Online Practice** **New Courses: Financial Mathematics** **Money**	**Page 28:** Calculate change from one dollar, represent amounts using different coin combinations and solve purchasing problems. 
2 **Subtraction**	Apply efficient subtraction strategies to solve and explain whole-number problems.	✓ Select efficient strategies ✓ Solve subtraction accurately ✓ Apply subtraction in context ✓ Record equations correctly ✓ Explain strategies	– Compare subtraction strategies – Estimate before calculating – Analyse errors – Solve practical problems – **Skill Quests: Add and subtract** **Adding & subtracting multiples of 100**	**Page 29:** Solve subtraction calculations and word problems, record equations and apply strategies to larger numbers. 
3 **Subtraction on a number line**	Use open number lines and place value strategies to solve subtraction problems efficiently.	✓ Use open number lines ✓ Select efficient jumps ✓ Compare strategies ✓ Solve word problems ✓ Explain reasoning	– Plan number-line jumps – Compare strategies – Interpret number lines – Explain reasoning – **New Courses: Subtraction Partitioning Strategy**	**Page 30:** Use open number lines and place value jumps to solve subtraction calculations and word problems. 
4 **Subtraction facts**	Use related addition and subtraction facts and place value patterns to solve subtraction problems.	✓ Use known subtraction facts ✓ Apply facts to larger numbers ✓ Complete fact families ✓ Recognise patterns ✓ Explain inverse relationships	– Build fact families – Complete related facts – Investigate place value patterns – Apply inverse operations – **New Courses: Subtraction Problem solving with + –**	**Page 31:** Apply known facts to larger numbers, complete fact families and use inverse operations to solve subtraction problems. 
5 **Mixed subtraction**	Select and apply efficient subtraction strategies across a range of problem types.	✓ Select appropriate strategies ✓ Solve subtraction accurately ✓ Use number lines and written methods ✓ Solve real-world problems ✓ Justify solutions	– Compare subtraction strategies – Solve mixed subtraction problems – Justify efficient methods – **New Courses: Subtraction Written Methods**	**Page 32:** Apply mental, written and number-line strategies to solve multi-digit subtraction problems and explain the most efficient method. 

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Unit: Number: Operations: More subtraction

Focus: Selecting efficient subtraction strategies, calculating change, using open number lines, applying written algorithms, recognising inverse relationships, using fact families, solving practical subtraction problems, and explaining mathematical reasoning

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Money and change	Calculate change accurately and recognise equivalent coin combinations.	Correctly determines change from one dollar and represents the same amount using different combinations of coins.
Strategy selection	Choose efficient subtraction strategies for different calculations.	Selects appropriate mental, written or number-line methods based on the numbers involved.
Number line strategies	Use open number lines to model subtraction using efficient place value jumps.	Records logical jumps and explains why they were chosen.
Fact families	Understand the inverse relationship between addition and subtraction.	Writes complete fact families and applies known facts to solve unfamiliar problems.
Mixed subtraction	Apply subtraction strategies confidently across a variety of contexts.	Solves routine and word problems accurately while justifying the strategy selected.
Mathematical communication	Explain and justify subtraction strategies using mathematical language.	Uses vocabulary such as 'difference', 'inverse', 'partition', 'strategy' and 'place value' accurately.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students solving subtraction and change problems.	Are students choosing efficient subtraction strategies?
Oral Check	Ask students to explain how they found a difference or calculated change.	Can students explain their strategy using number relationships?
Practical Task	Use play money or number lines to model subtraction.	Can students represent subtraction and calculate change accurately?
Written Work	Review workbook pages 28–32.	Accuracy with subtraction facts, number lines, written methods and money.
Exit Ticket	Solve a subtraction and change questions.	Identify students that need support with subtraction and calculating change.

Quick Quiz / Exit Ticket (5 Questions)

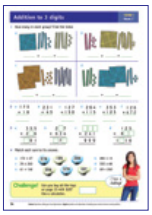
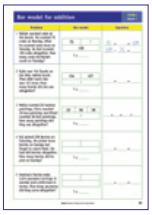
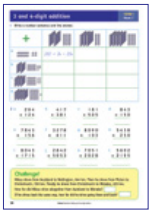
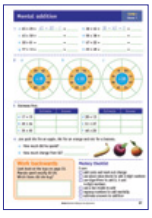
1. A toy costs 65 cents. How much change would you receive from $1?
2. Solve 456 − 198 using the strategy you think is most efficient.
3. Write the three related equations for the fact family 9 + 7 = 16.
4. Explain why an open number line might be useful for solving 542 − 298.
5. Solve 7,035 − 3,652 and explain how you checked that your answer is reasonable.

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
Which students confidently selected efficient subtraction strategies without prompting?	
Which students demonstrated flexibility by comparing more than one subtraction method?	
Which students accurately used open number lines to model subtraction?	
Which students successfully connected addition and subtraction using fact families?	
What misconceptions were observed about subtraction, regrouping or inverse operations?	
Which students require further support calculating change and solving subtraction word problems?	
What adjustments should be made before introducing more complex multi-step subtraction problems?	

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Term 1 Week 7 Overview Number: Operations: More addition

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Addition of money**	Apply efficient addition strategies to calculate totals and change involving money.	✓ Add money amounts accurately ✓ Select efficient strategies ✓ Calculate change ✓ Solve money problems ✓ Explain solutions	– Compare prices – Estimate totals – Calculate totals and change – Solve financial problems – **Mathletics Online Practice Activities (Courses): Operations: Addition & subtraction** **Complements to 50 and 100**	**Page 33:** Add money amounts, calculate purchase totals and change, and solve practical financial mathematics problems. 
2 **Addition to 3 digits**	Use place value and efficient addition strategies to solve addition problems involving numbers to three digits.	✓ Add two- and three-digit numbers ✓ Use place value ✓ Apply written algorithms ✓ Select efficient strategies ✓ Explain regrouping	– Estimate before calculating – Predict regrouping – Analyse errors – Apply place value reasoning – **New Courses: Addition Partitioning strategy +**	**Page 34:** Add two- and three-digit numbers using written algorithms, complete missing digits and apply regrouping accurately. 
3 **Bar model for addition**	Use bar models to represent and solve addition problems involving missing parts and wholes.	✓ Interpret bar models ✓ Identify known and unknown parts ✓ Write matching equations ✓ Solve missing-part problems ✓ Explain representations	– Create mathematical stories – Identify key information – Pose questions – Connect models and equations – **Activities (Courses): Equations & relationships Bar Model Problems 2**	**Page 35:** Interpret bar models, identify missing parts and wholes, write equations and solve addition word problems. 
4 **3- and 4-digit addition**	Apply place value and efficient addition strategies to solve three- and four-digit addition problems.	✓ Add three- and four-digit numbers ✓ Use place value ✓ Apply written algorithms ✓ Select efficient strategies ✓ Explain regrouping	– Estimate sums – Predict regrouping – Compare strategies – Solve multi-digit problems – **Skill Quests: Add & subtract vertically** **Vertical addition (with renaming)**	**Page 36:** Add three- and four-digit numbers using written algorithms and place value strategies to solve larger calculations. 
5 **Mental addition**	Apply efficient mental addition strategies to solve whole-number problems.	✓ Select mental strategies ✓ Use compensation and partitioning ✓ Estimate answers ✓ Solve mentally ✓ Explain reasoning	– Compare mental strategies – Estimate before calculating – Justify strategy choices – Solve mental calculations – **New Courses: Addition Rounding strategy +**	**Page 37:** Apply mental addition strategies, estimate before calculating, solve addition problems and calculate totals and change. 

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Unit: Number: Operations: More addition

Focus: Adding money amounts, calculating totals and change, using place value and written addition strategies, interpreting bar models, selecting efficient mental addition strategies, estimating and checking answers, and explaining mathematical reasoning

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Financial mathematics	Accurately calculate totals and change involving dollars and cents.	Correctly adds money amounts, estimates totals and calculates change in shopping contexts.
Place value and written addition	Use place value understanding to solve two-, three- and four-digit addition problems.	Correctly aligns place value columns, regroups accurately and explains regrouping decisions.
Mental addition	Select efficient mental strategies such as compensation, partitioning and bridging.	Chooses strategies appropriate to the numbers and explains why they are efficient.
Bar models	Recognise part-part-whole relationships and connect visual models with equations.	Correctly identifies known and unknown quantities and writes matching number sentences.
Strategy selection	Choose and justify efficient addition strategies for different problem types.	Explains strategy choices and compares the efficiency of different methods.
Mathematical communication	Explain mathematical thinking using appropriate vocabulary and representations.	Uses terms such as 'regroup', 'partition', 'estimate', 'total', 'whole' and 'part' accurately.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students using different addition strategies.	Are students choosing efficient strategies and using place value accurately?
Oral Check	Ask students to explain how they solved an addition or money problem.	Can students explain their strategy and justify their answer?
Practical Task	Model addition using money, place-value materials or bar models.	Can students represent totals, unknowns and change accurately?
Written Work	Review workbook pages 33–37.	Accuracy with money, mental addition, written methods, estimation and problem solving.
Exit Ticket	Quick addition and money problems.	Identify students that need support with addition or calculating change.

Quick Quiz / Exit Ticket (5 Questions)

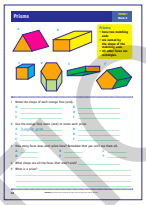
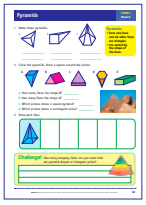
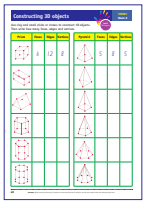
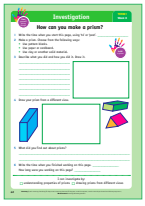
1. A toy costs $3.75. How much change would you receive from $5.00?
2. Solve 368 + 457 using the strategy you think is most efficient.
3. A bar model shows a whole of 925 and one part of 468. What is the missing part?
4. Estimate 2,983 + 1,976 before calculating the exact answer.
5. Explain why you might choose a mental strategy instead of a written algorithm for 198 + 37.

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
Which students confidently selected efficient addition strategies without prompting?	
Which students demonstrated secure understanding of regrouping with larger numbers?	
Which students accurately interpreted and applied bar models?	
Which students estimated effectively before calculating exact answers?	
What misconceptions were observed about place value, regrouping or financial calculations?	
Which students require additional support with mental addition or financial mathematics?	
What adjustments should be made before introducing more complex multi-step addition problems?	

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Term 1 Week 8 Overview Geometry: Spatial reasoning: 3D shapes

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Prisms**	Identify, classify and describe prisms using their geometric properties.	✓ Identify prisms ✓ Name prisms according to the shape of their base ✓ Describe faces, edges and vertices ✓ Compare different prisms ✓ Explain why a shape is a prism	– Identify and classify prisms – Compare geometric properties – Investigate faces, edges and vertices – Sort three-dimensional objects – **Mathletics Online Practice Activities (Courses): Shape, space & pathways** **Relate Shapes and Solids**	**Page 38:** Identify and name prisms, recognise their properties, count faces, edges and vertices, and describe what makes a prism. 
2 **Pyramids**	Identify, classify and describe pyramids using their geometric properties and the shape of their base.	✓ Identify pyramids ✓ Describe the properties of pyramids ✓ Name pyramids according to their base ✓ Compare pyramids with prisms ✓ Explain why a shape is or is not a pyramid	– Classify pyramids – Compare pyramids and prisms – Describe faces, edges and vertices – Identify base shapes – **Activities (Courses): Shape, space & pathways** **How many faces?**	**Page 39:** Identify and name pyramids, compare pyramids and prisms, recognise the properties of pyramids and classify three-dimensional shapes. 
3 **Constructing 3D objects**	Construct prisms and pyramids and describe their geometric properties by identifying faces, edges and vertices.	✓ Construct prisms and pyramids ✓ Identify faces, edges and vertices ✓ Compare different three-dimensional objects ✓ Explain how the base determines the object's name ✓ Use mathematical vocabulary to describe models	– Construct three-dimensional models – Compare geometric properties – Investigate relationships between base shape and properties – Explain mathematical reasoning – **Skill Quests: Shapes in 3D objects** **Comparing faces of 3D objects with 2D**	**Page 40:** Construct prisms and pyramids, identify and count faces, edges and vertices, compare geometric properties and recognise how the base determines each object's name. 
4 **Cones, cylinders and spheres**	Identify, compare and describe cones, cylinders and spheres using their geometric properties and everyday examples.	✓ Identify cones, cylinders and spheres ✓ Describe flat and curved surfaces ✓ Compare three-dimensional objects ✓ Identify everyday examples ✓ Explain how properties affect movement	– Compare curved and flat surfaces – Sort everyday objects – Investigate rolling, sliding and stacking – Describe geometric properties – **Activities (Courses): Shape, space & pathways** **Select the objects**	**Page 41:** Identify cones, cylinders and spheres, describe their surfaces, recognise everyday examples and compare how different three-dimensional objects move and behave. 
5 **Investigation: How can you make a prism?**	Construct a prism, describe its geometric properties and represent it from different viewpoints.	✓ Construct a prism using suitable materials ✓ Identify faces, edges and vertices ✓ Draw the prism from different viewpoints ✓ Explain why it is a prism ✓ Use mathematical vocabulary	– Plan and construct a prism – Investigate faces, edges and vertices – Represent the prism from different viewpoints – Explain geometric properties – **Challenge: 3D shapes** **Faces, edges and vertices**	**Page 42:** Construct a prism using suitable materials, describe its properties, identify faces, edges and vertices, represent it from different viewpoints and explain why it is a prism. 

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Unit: Geometry: Spatial reasoning: 3D shapes

Focus: Identifying, classifying and constructing three-dimensional objects; recognising faces, edges, vertices and surfaces; comparing geometric properties; representing objects from different viewpoints; using mathematical vocabulary; and explaining geometric reasoning

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Identifying 3D objects	Identify common three-dimensional objects using their defining properties.	Correctly names prisms, pyramids, cones, cylinders and spheres.
Geometric properties	Recognise and describe faces, edges, vertices and surfaces.	Accurately counts and describes the geometric features of models.
Classification	Classify objects according to their properties rather than appearance.	Justifies classifications using mathematical vocabulary.
Construction	Construct accurate prism and pyramid models.	Models display correct matching ends, faces and overall structure.
Spatial reasoning	Recognise and represent objects from different viewpoints.	Draws and interprets different views of three-dimensional objects accurately.
Mathematical communication	Explain reasoning using appropriate geometry vocabulary.	Uses terms such as face, edge, vertex, prism, pyramid, curved surface and base accurately.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students identifying and comparing 3D objects.	Can students recognise prisms, pyramids, cones, cylinders and spheres?
Oral Check	Ask students to describe a 3D object.	Can students use faces, edges, vertices and surfaces correctly?
Practical Task	Construct a prism or pyramid using materials.	Can students build and describe 3D objects accurately?
Written Work	Review workbook pages 38–42.	Accuracy naming, describing and drawing 3D objects from different views.
Exit Ticket	Name and describe 3D objects and their properties.	Identify students that need support with 3D shape properties.

Quick Quiz / Exit Ticket (5 Questions)

1. What makes a prism different from a pyramid?
2. How many flat faces does a cylinder have?
3. Name one everyday object that is a sphere.
4. A shape has one square base and four triangular faces. What is it called?
5. Why is a cone able to roll and also stand upright?

Teaching as Inquiry: Reflection Notes

Reflection Prompts

Which students confidently identified and classified three-dimensional objects using their geometric properties?

Which students still confused prisms, pyramids, cones, cylinders and spheres?

Were students using mathematical vocabulary such as *faces*, *edges*, *vertices*, *bases* and *curved surfaces* accurately and confidently?

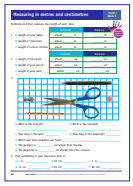
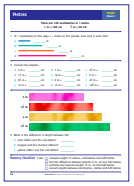
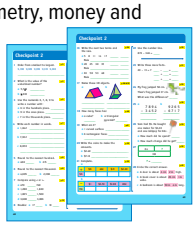
Which students could represent three-dimensional objects from different viewpoints?

What additional modelling or hands-on experiences should be provided before moving to the next geometry concept?

Notes/Next Steps

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Term 1 Week 9 Overview Measurement: Measuring: Length

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Metres**	Measure, compare and interpret lengths using metres to solve practical measurement problems.	✓ Identify objects measured in metres ✓ Compare lengths using metres ✓ Solve problems involving length differences ✓ Order lengths from shortest to longest ✓ Explain measurement reasoning	– Compare heights and lengths using metre scales – Estimate and compare real-life objects – Solve measurement comparison problems – Discuss appropriate units for large objects – **Skill Quests: Units of length (cm & m)** **Introducing formal units (m)**	**Page 43:** Read metre scales, compare heights, determine differences in length and order objects by height using metre measurements. 
2 **Measuring in metres and centimetres**	Estimate and measure objects using metres and centimetres and choose appropriate units for different lengths.	✓ Estimate lengths before measuring ✓ Measure accurately using metres and centimetres ✓ Compare measured lengths ✓ Select appropriate units ✓ Explain measurement choices	– Estimate classroom measurements – Measure objects using rulers and tape measures – Compare estimates with actual measurements – Discuss suitable measuring tools – **Activities (Courses): Measuring, perimeter, area, volume & time** **How Long is That?**	**Page 44:** Estimate and measure classroom objects, compare lengths and identify appropriate units for everyday objects. 
3 **Measuring and estimating length**	Select appropriate measuring tools and units to estimate and measure a variety of objects accurately.	✓ Estimate realistic lengths ✓ Measure accurately using a ruler ✓ Choose appropriate units ✓ Compare measurements ✓ Explain measurement decisions	– Estimate before measuring – Measure using rulers – Compare estimates and actual measurements – Discuss measurement accuracy – **Skill Quests: Measure in cm & m** **Measuring in m & cm**	**Page 45:** Estimate and measure everyday objects, complete measurement tasks using centimetres and metres and compare lengths. 
4 **Metres**	Convert, compare and solve measurement problems involving metres, centimetres and half metres.	✓ Convert between metres and centimetres ✓ Recognise half-metre measurements ✓ Compare lengths ✓ Calculate differences ✓ Explain measurement reasoning	– Convert between metric units – Compare lengths involving metres and centimetres – Solve measurement difference problems – Apply measurement knowledge in practical contexts – **Challenge: Length** **Metres or centimetres?**	**Page 46:** Convert between metres and centimetres, compare whole and half-metre lengths and solve measurement comparison problems. 
5 **Investigation: Inenga roa**	Investigate the accuracy of informal and standard measurement units by comparing estimates and measurements.	✓ Measure using informal units ✓ Estimate lengths ✓ Measure accurately using standard units ✓ Compare measurement methods ✓ Explain which method is more accurate	– Compare informal and standard measurement methods – Estimate and measure classroom objects – Evaluate measurement accuracy – **Challenge: Measurement: Length** **Metres or centimetres?**	**Page 47:** Compare informal Māori body-based measurements with standard metric measurements and evaluate the accuracy of each method. 
Checkpoint 2	Demonstrate understanding of number, geometry, money and measurement concepts from Term 1.	✓ Apply place value knowledge ✓ Solve addition and subtraction problems ✓ Recognise number patterns ✓ Identify three-dimensional objects ✓ Apply money and measurement skills	– Complete Checkpoint 2 – Apply knowledge from Term 1 – Demonstrate mathematical reasoning independently	**Pages 48–49:** Complete Checkpoint 2 assessing place value, operations, patterns, geometry, money and measurement concepts. 

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Unit: Measurement: Measuring: Length

Focus: Estimating, measuring and comparing lengths; selecting appropriate metric units and measuring tools; converting between metres and centimetres; solving measurement problems; investigating informal and standard measurement methods; and explaining measurement reasoning.

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Metric measurement	Understand that metres are used for longer lengths and centimetres for shorter lengths.	Correctly selects appropriate units and measuring tools.
Estimation	Make reasonable estimates before measuring.	Estimates are realistic and improve with experience.
Measuring	Measure accurately using rulers and metre scales.	Begins measuring at zero, records correct measurements and includes units.
Comparing lengths	Compare lengths and calculate differences accurately.	Correctly identifies longer, shorter and difference between measurements.
Unit conversions	Convert between metres and centimetres, including half metres.	Correctly converts measurements and explains the relationship between units.
Informal measurement	Understand the strengths and limitations of body-based measurement.	Explains why informal units vary and why standard units provide consistent measurements.

Assessment Opportunities

Type	Suggested Activity	What to Observe
Observation (Formative)	Observe students estimating and measuring lengths.	Are students choosing suitable units and measuring accurately?
Oral Check	Ask students to compare and describe lengths.	Can students use metres and centimetres correctly?
Practical Task	Estimate, then measure classroom objects.	Can students use rulers and informal units accurately?
Written Work	Review workbook pages 43–47.	Accuracy with estimating, measuring, comparing and converting lengths.
Exit Ticket	Quick length estimates and measurement questions.	Identify students that need support with length and units.
Checkpoint 2	Review completed Checkpoint 2 (pages 48–49).	Identify strengths and misconceptions across place value, ordering and rounding numbers, addition and subtraction strategies, number patterns, three-dimensional objects, money and measurement.

Quick Quiz / Exit Ticket (5 Questions)

1. How many centimetres are in 4 metres?
2. Which unit would you use to measure the height of a classroom door: metres or centimetres?
3. Which is longer: 250 cm or 3 m?
4. A ribbon is $5\frac{1}{2}$ metres long. How many metres is that altogether?
5. Explain one reason why a ruler gives a more accurate measurement than using your hand span.

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
Which students confidently selected appropriate metric units without prompting?	
Who consistently estimated realistic lengths before measuring?	
Which students accurately converted between metres and centimetres, including half metres?	
Were students able to explain why standard measurement units are more reliable than informal body measurements?	
Which students require additional experiences using rulers, metre rulers or tape measures?	
What real-life measurement investigations could further strengthen students' understanding of metric measurement?	

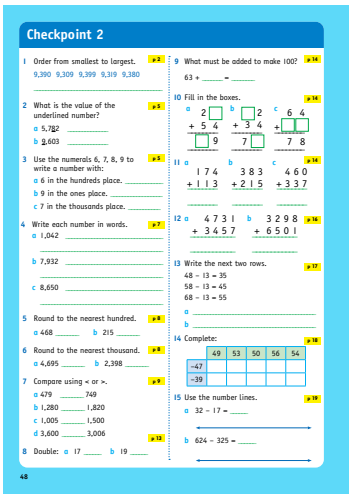
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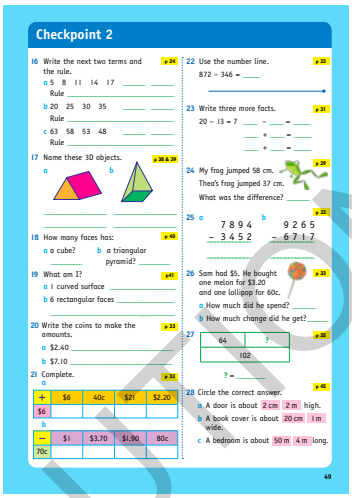
CHECKPOINT 2

Purpose

This checkpoint assesses students' understanding of **place value**, **rounding**, **number patterns**, **addition**, **subtraction**, **money**, **geometry and measurement**. It provides teachers with a snapshot of students' ability to order and compare four-digit numbers, identify place value, write numbers in words, round numbers, recognise and continue number patterns, apply addition and subtraction strategies, work with money, identify and describe 3D objects, and select appropriate metric units for length.

The checkpoint should take approximately **40–50 minutes** and may be completed in **two sittings**.





Assessment Overview

Part	Focus	Questions	Curriculum Links	Skills Assessed
1–7	Place value	Ordering four-digit numbers, place value, constructing numbers, number names, rounding and comparing numbers	Number structures	Orders and compares four-digit numbers; identifies the value of digits; constructs numbers to meet place-value conditions; writes numbers in words; rounds to the nearest hundred and thousand; uses < and > accurately
8, 16	Number facts and patterns	Doubles; increasing and decreasing number sequences; describing rules	Equations and relationships	Recalls doubles; recognises increasing and decreasing patterns; identifies the amount of change; continues sequences accurately; describes the rule governing a pattern
9–15, 22–25, 27	Addition and subtraction	Complements to 100, missing-number calculations, written addition, number-line subtraction, fact families, differences, written subtraction and bar models	Operations	Finds complements to 100; completes missing-number equations; adds using place-value algorithms; uses number lines to subtract; connects addition and subtraction facts; calculates differences; subtracts four-digit numbers; interprets part–whole models
17–19	Geometry	Naming 3D objects; faces and properties of 3D objects	Spatial reasoning	Names prisms and pyramids; identifies the number of faces; recognises 3D objects from their properties; uses appropriate geometric language to describe flat and curved surfaces
20–21, 26	Money	Representing money amounts, adding and subtracting money, calculating total cost and change	Financial mathematics	Represents dollar amounts using coins; adds and subtracts money amounts; calculates the total cost of purchases; determines change from a given amount
28	Measurement	Selecting reasonable metric measurements for familiar objects	Measuring	Distinguishes between centimetres and metres; selects appropriate units; uses benchmarks to judge reasonable lengths and heights of familiar objects

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CHECKPOINT 2 Student Recording Sheet & Marking Rubric

Unit: Number: Number structures, Operations, Algebra: Equations and relationships, Geometry: Spatial reasoning, Measurement: Measuring

Weeks: 1–9 / Year 4 Mathematics **Total Marks:** 60

Student Name: **Date:**

Marking Sheet

Part	Task	Max Marks	Student Score	Notes / Observations
1	Order four-digit numbers from smallest to largest	2	/ 2	
2	Identify the value of an underlined digit	2	/ 2	
3	Construct numbers using given place-value conditions	3	/ 3	
4	Write numbers in words	3	/ 3	
5–6	Round numbers to the nearest hundred and thousand	4	/ 4	
7	Compare numbers using < or >	2	/ 2	
8	Recall doubles	2	/ 2	
9	Find a complement to 100	2	/ 2	
10	Complete missing-number addition equations	3	/ 3	
11–12	Add three- and four-digit numbers	5	/ 5	
13–14	Continue number patterns and calculate changes	4	/ 4	
15, 22	Subtract using number lines	3	/ 3	
16	Continue number patterns and identify the rule	3	/ 3	
17–19	Identify and describe properties of 3D objects	3	/ 3	
20–21	Represent, add and subtract money amounts	6	/ 6	
23–25	Apply addition and subtraction relationships and strategies	6	/ 6	
26	Calculate total cost and change	2	/ 2	
27	Interpret and solve a bar model	2	/ 2	
28	Select reasonable metric measurements	3	/ 3	
	TOTAL:	**60**	**/ 60**	

Achievement Rubric

Score Range	Progress Descriptor	Interpretation	Suggested Follow-Up
55–60	Exceeding	Strong and consistent understanding of place value, patterns, operations, money, geometry and measurement. Applies strategies accurately across familiar and unfamiliar tasks.	Extend with larger numbers, multi-step money and measurement problems, more complex patterns, and investigations requiring students to explain and justify strategies.
45–54	Proficient	Secure understanding of the assessed concepts, with only occasional errors in calculation, representation or application.	Reinforce through mixed practice involving rounding, place value, addition and subtraction strategies, money, 3D objects and metric measurement.
33–44	Consolidating	Sound understanding of most concepts, with some gaps or inconsistencies in selecting and applying appropriate strategies.	Continue guided practice with place-value relationships, rounding, number patterns, written and number-line strategies, money calculations and properties of 3D objects.
18–32	Developing	Developing understanding of number, operations, geometry and measurement, with support required to apply concepts consistently.	Focus on concrete place-value models, counting patterns, basic number facts, addition and subtraction strategies, practical money tasks, 3D models and measurement benchmarks.
0–17	Emerging	Beginning to develop foundational understanding of the assessed number, operation, geometry and measurement concepts.	Revisit number recognition and place value, simple patterns and operations using concrete materials and number lines, coin recognition, familiar 3D objects and practical comparisons of length.

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