# Year 5

# Term 1

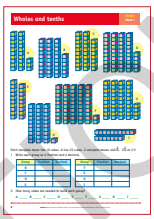
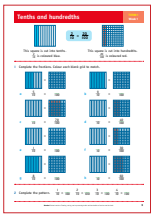
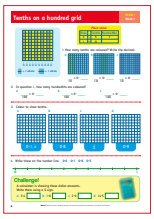
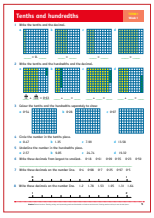
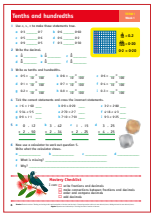
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# Term 1 Teaching Overview

| Week and Unit | High-Level Curriculum Focus | Student Book and Online lessons | Resources |
|---|---|---|---|
| **Week 1**<br>**Tenths and hundredths** | **Number** Number structures, Rational numbers<br>Reading, writing and representing tenths and hundredths as fractions and decimals | **Pages 2–6**<br>**Mathletics: New Courses, Skill Quests: Rational numbers** | Hundred grids, number lines, place-value charts, tenths strips, fraction cards, decimal cards, fraction models, visual strips, matching cards, calculators |
| **Week 2**<br>**Place value** | **Number** Number structures, Rational numbers<br>Reading and writing whole numbers up to 1,000,000 and representing them using base-10 structure<br>Reading, writing and representing tenths and hundredths as decimals | **Pages 7–11**<br>**Mathletics: New Courses, Activities (Courses): Number structures, Rational numbers** | Place-value charts, digit cards, number cards, te reo Māori number cards, numeral cards, place-value reference charts, decimal cards, comparison cards, place-value clue cards, true-or-false statement cards |
| **Week 3**<br>**Working with place value** | **Number** Number structures, Rational numbers<br>Rounding whole numbers to the nearest hundred thousand, ten thousand, thousand, hundred or ten; a number line supports this<br>Dividing one- and two-digit whole numbers by 10 or 100 to make decimals<br>Multiplying numbers with up to two decimal places by 10 and 100 | **Pages 12–16**<br>**Mathletics: New Courses, Skill Quests: Number structures, Rational numbers** | Open number lines, place-value charts, digit cards, number cards, operation cards, mini whiteboards, decimal number lines, price cards, grid paper, rounding target cards |
| **Week 4**<br>**Fractions** | **Number** Rational numbers<br>Finding a non-unit fraction of a whole number, where the answer is a whole number<br>Recognising equivalent mixed numbers and improper fractions<br>Comparing fractions where one denominator is a multiple of the other | **Pages 17–21**<br>**Mathletics: New Courses, Activities (Courses): Rational numbers** | Fraction strips, fraction cards, counters, fraction circles, fraction bars, number lines, collection cards, mixed-number cards, visual fraction model cards, fraction materials |
| **Week 5**<br>**Equivalent fractions** | **Number** Rational numbers<br>Comparing fractions where one denominator is a multiple of the other<br>Equivalent fractions can be generated using common factors<br>Adding and subtracting fractions when one denominator is a multiple of the other, including improper fractions | **Pages 22–25**<br>**Mathletics: New Courses, Skill Quests: Rational numbers** | Fraction strips, fraction cards, fraction circles, counters, paper strips, fraction pieces, factor cards, fraction diagrams, recording sheets, fraction operation cards |
| **Checkpoint 1**<br>**Mid-term review** | Review rational numbers with fractions and decimals. | **Pages 26–27** | |
| **Week 6**<br>**Addition and subtraction** | **Number** Operations<br>Adding and subtracting increasingly large whole numbers<br>Addition and subtraction can be carried out mentally, using known facts, place value and partitioning or column methods | **Pages 28–32**<br>**Mathletics: New Courses: Operations** | Counters, number cards, connecting cubes, place-value charts, place-value materials, fact-family triangles, bar model strips, part–whole problem cards, operation cards, open number lines |
| **Week 7**<br>**Trading-in algorithms** | **Number** Operations<br>Adding increasingly large whole numbers<br>Standard written algorithms rely on place value, regrouping and renaming | **Pages 33–37**<br>**Mathletics: New Courses, Challenge: Operations** | Place-value materials, place-value charts, digit cards, number cards, counters, place-value blocks, tens and ones cards, open number lines, subtraction calculation cards, algorithm puzzle cards |
| **Week 8**<br>**Add and subtract** | **Number** Operations<br>Adding and subtracting increasingly large whole numbers<br>Addition and subtraction can be carried out mentally, using known facts, place value and partitioning or column methods | **Pages 38–42**<br>**Mathletics: New Courses, Activities (Courses), Skill Quests, Challenge: Operations** | Place-value charts, digit cards, number cards, place-value materials, calculators, play money, price cards, strategy cards, problem pathway cards, holiday budget cards |
| **Week 9**<br>**Mass and volume** | **Measurement** Measuring<br>Accurately measuring mass (weight) with scales, using appropriate metric units or a combination of units<br>Converting metric units<br>Measuring the volumes of rectangular prisms (cuboids) filled with centicubes by determining the number of cubes in each layer and then multiplying by the number of total layers | **Pages 43–47**<br>**Mathletics: Activities (Courses), Skill Quests, Challenge: Measuring** | Centimetre cubes, linking cubes, digital scales, classroom scales, classroom objects, mass cards, target cards, dimension cards, benchmark weights, recording tables |
| **Checkpoint 2**<br>**End-of-term review** | Review rational numbers, adding and subtracting as well as mass and volume. | **Pages 48–49** | |

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# Term 1 Week 1 Overview Number: Rational numbers: Tenths and hundredths

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**Wholes and tenths** | Wholes and tenths can be represented using fractions and decimals. | ✓ Identify wholes and tenths<br>✓ Write tenths as fractions and decimals<br>✓ Represent quantities containing wholes and tenths<br>✓ Connect groups of ten to one whole | – Represent wholes and tenths using groups of ten cubes<br>– Write quantities as fractions and decimals<br>– Determine the number of cubes represented by whole towers and parts of towers<br>– **Mathseeds Online Practice New Courses: Decimals and percentages: Are you ready?** | **Page 2:** Representing wholes and tenths, writing fractions and decimals, determining quantities represented by models.<br> |
| **2**<br>**Tenths and hundredths** | Tenths can be partitioned into hundredths and represented as equivalent fractions. | ✓ Identify tenths and hundredths<br>✓ Represent tenths and hundredths using grids<br>✓ Write equivalent fractions<br>✓ Explain why $\frac{1}{10} = \frac{10}{100}$ | – Partition wholes into tenths and hundredths using visual models<br>– Match equivalent fractions<br>– Complete patterns connecting tenths and equivalent hundredths<br>– **Skill Quests: Tenths & hundredths: Introducing hundreds as fractions and decimals** | **Page 3:** Representing tenths and hundredths, finding equivalent fractions, connecting tenths to hundredths.<br> |
| **3**<br>**Tenths on a hundred grid** | Understand how tenths and hundredths are represented on a hundred grid and connected to decimal notation and place value. | ✓ Identify tenths and hundredths on grids<br>✓ Write tenths as decimals<br>✓ Represent decimals on hundred grids<br>✓ Locate tenths on a number line | – Identify tenths and hundredths represented on hundred grids<br>– Connect fractions and decimals<br>– Represent and locate decimal tenths on hundred grids and number lines<br>– **New Courses: Decimals and percentages: Decimal hundredths** | **Page 4:** Representing tenths and hundredths, writing decimals, using hundred grids and number lines.<br> |
| **4**<br>**Tenths and hundredths** | Understand how tenths and hundredths determine the value of decimals and use place value to represent, compare and order decimals to two decimal places. | ✓ Identify tenths and hundredths<br>✓ Represent decimals using place value<br>✓ Compare and order decimals<br>✓ Locate decimals on number lines | – Represent decimals as combinations of tenths and hundredths<br>– Identify the value of digits in the tenths and hundredths places<br>– Compare, order and locate decimals to two decimal places on number lines<br>– **New Courses: Decimals and percentages: Partitioning decimals** | **Page 5:** Decimal place value, representing, comparing, ordering and locating decimals.<br> |
| **5**<br>**Add tenths and hundredths** | Understand how place value connects fractions and decimals and use this understanding to represent, compare and add numbers involving tenths and hundredths. | ✓ Compare decimals using <, > and =<br>✓ Recognise equivalent decimals<br>✓ Connect tenths, hundredths and decimals<br>✓ Add decimals to two decimal places | – Compare decimals using <, > and = and recognise equivalent decimals<br>– Convert between fractions in tenths and hundredths and decimal notation<br>– Add decimals to two decimal places and check calculations using a calculator<br>– **Skill Quests: Compare decimals: Comparing & ordering tenths and hundredths** | **Page 6:** Comparing decimals, equivalent fractions and decimals, tenths and hundredths, decimal statements, adding decimals.<br> |

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# Unit: Number: Rational numbers: Tenths and hundredths

**Focus:** Represent, connect, compare and calculate with tenths and hundredths using fractions, decimals and place value

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Wholes and tenths** | Understand that 10 tenths make one whole. | Represents wholes and tenths accurately as fractions and decimals. |
| **Tenths and hundredths** | Understand that 1 tenth is equivalent to 10 hundredths. | Connects equivalent fractions, decimals and visual models. |
| **Decimal place value** | Understand the value of digits in the tenths and hundredths places. | Identifies and explains decimal digit values accurately. |
| **Comparing decimals** | Compare and order decimals using place value. | Uses place-value reasoning and recognises equivalent decimals. |
| **Adding decimals** | Combine decimal quantities using corresponding place values. | Aligns ones, tenths and hundredths and calculates accurately. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Observe students during tenths, hundredths and decimal activities. | Are students connecting representations and using place value accurately? |
| **Oral Check** | Ask students to explain equivalent fractions and decimals and justify comparisons. | Listen for accurate mathematical language and clear reasoning. |
| **Written Work** | Review student book pages 2–6. | Check accuracy in representing, comparing, ordering and adding decimals. |
| **Practical Task** | Ask students to represent a decimal using a grid or number line and give an equivalent fraction. | Can students move flexibly between representations and explain equivalence? |
| **Exit Ticket** | Use short questions covering the week's key concepts. | Identify students requiring targeted support or extension with tenths and hundredths. |

## Quick Quiz / Exit Ticket (5 Questions)

1. Write $\frac{7}{10}$ as a decimal.
2. Write $\frac{4}{10}$ as an equivalent fraction in hundredths.
3. What are the values of the digits in 0.36?
4. Which is greater: 0.7 or 0.65? Explain.
5. Calculate 1.35 + 2.24.

## Teaching as Inquiry: Reflection Notes

### Reflection Prompts

Which students confidently connect tenths, hundredths, fractions and decimals?

Which students understand decimal place value and equivalence?

Which students accurately compare, order and add decimals?

What misconceptions require further teaching or practice?

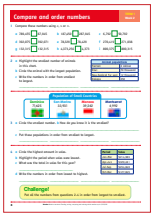
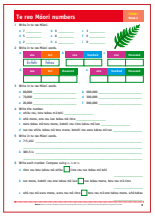
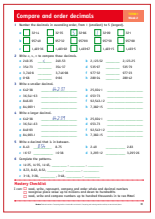
Which students are ready for extension with more complex decimal reasoning?

### Notes / Next Steps

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# Term 1 Week 2 Overview

## Number: Number structures, Rational numbers: Place value

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**Place value to 1 million** | Whole numbers are structured according to place value and that each digit represents a different value depending on its position. | ✓ Read and write large whole numbers<br>✓ Identify digit place and value<br>✓ Partition large numbers<br>✓ Move between numeral, word and expanded forms | – Read and build large numbers using place value<br>– Identify the place and value of digits<br>– Partition and reconstruct large numbers<br>– **Mathletics Online Practice**<br>**New Courses: Whole number: Are you ready?**<br>**Numbers to 1,000,000** | **Page 7:** Reading and writing large numbers, identifying digit places and values.<br> |
| **2**<br>**Compare and order numbers** | Compare and order whole numbers by examining digits from the highest place value to the lowest. | ✓ Compare whole numbers<br>✓ Use <, > and =<br>✓ Identify smallest and largest values<br>✓ Order numbers<br>✓ Explain comparisons using place value | – Compare numbers using corresponding place values<br>– Order sets of large whole numbers<br>– Interpret and compare numbers in population and sales contexts<br>– **New Courses: Whole number: Compare numbers** | **Page 8:** Comparing whole numbers, using <, > and =, ordering values and interpreting numerical data.<br> |
| **3**<br>**Te reo Māori numbers** | Understand how the base-10 structure of whole numbers is represented in te reo Māori and use this structure to read, write and compare numbers. | ✓ Read and write numbers in te reo Māori<br>✓ Connect number words with place value<br>✓ Interpret larger numbers<br>✓ Compare numbers using <, > and = | – Build numbers from te reo Māori place-value words<br>– Extend number language to thousands and hundred thousands<br>– Interpret and compare numbers written in te reo Māori | **Page 9:** Reading, writing and comparing numbers in te reo Māori using base-10 place value.<br> |
| **4**<br>**Place value with decimals** | Digit position determines its value in whole numbers and decimals, including tenths and hundredths. | ✓ Identify whole-number and decimal places<br>✓ Explain the decimal point<br>✓ Determine digit values<br>✓ Use zeros as placeholders<br>✓ Evaluate place-value statements | – Extend place value across the decimal point<br>– Explore zeros as placeholders in decimals<br>– Reason about true and false decimal place-value statements<br>– **New Courses: Decimals and percentages: Place value to hundredths** | **Page 10:** Place value from ten thousands to hundredths, decimal notation, placeholder zeros and place-value reasoning.<br> |
| **5**<br>**Compare and order decimals** | Compare and order decimal numbers decimal numbers by considering corresponding place-value positions. | ✓ Compare decimals<br>✓ Use <, > and =<br>✓ Order decimals<br>✓ Find smaller, larger and between values<br>✓ Continue decimal patterns | – Compare decimals using place value<br>– Order decimals with different numbers of decimal places<br>– Find decimals between values and extend decimal patterns<br>– **Activities (Courses): Decimals & percentages: Comparing Decimals 1** | **Page 11:** Comparing and ordering decimals, finding values between decimals and completing patterns.<br> |

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## Unit: Number: Number structures, Rational numbers: Place value

**Focus:** Read, write, represent, compare and order whole numbers and decimals using place value; interpret numbers in te reo Māori; apply understanding of tenths and hundredths

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Whole-number place value** | Understand the base-10 structure of large whole numbers. | Reads, writes and identifies the place and value of digits accurately. |
| **Comparing and ordering whole numbers** | Compare numbers using place value. | Uses <, > and = correctly and orders numbers accurately. |
| **Te reo Māori numbers** | Connect te reo Māori number language with base-10 structure. | Reads, writes and interprets numbers using place-value knowledge. |
| **Decimal place value** | Understand tenths and hundredths as extensions of place value. | Identifies decimal places and values, including placeholder zeros. |
| **Comparing and ordering decimals** | Compare decimals using corresponding place values. | Orders decimals accurately and recognises equivalent forms such as 0.6 and 0.60. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Watch students during place-value, comparison and decimal activities. | Are students reasoning from digit position and value rather than relying on visual appearance or isolated digits? |
| **Oral Check** | Ask students to explain the place and value of digits, justify comparisons and interpret numbers written in te reo Māori. | Listen for accurate place-value language, correct use of tenths and hundredths and clear justification. |
| **Written Work** | Review student book pages 7–11. | Check accuracy in reading, writing, partitioning, comparing and ordering whole numbers and decimals. |
| **Practical Task** | Give students digit cards or place-value clues to construct and compare whole and decimal numbers. | Can students build valid numbers, identify digit values and explain why one number is greater or smaller? |
| **Exit Ticket** | Use short questions covering whole-number place value, te reo Māori numbers and decimals. | Identify students requiring targeted support or extension with place value. |

## Quick Quiz / Exit Ticket (5 Questions)

1. What is the value of the 7 in 3,748,216?
2. Put 482,615, 428,615, 482,165 in order from smallest to largest.
3. Write whā rau, ono tekau mā toru as a numeral.
4. What are the values of 5 and 8 in 26.58?
5. Put 7.08, 7.8, 7.18, 7.81 in ascending order.

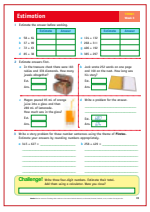
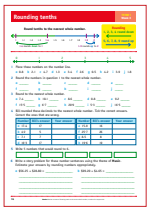
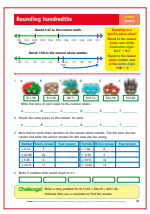
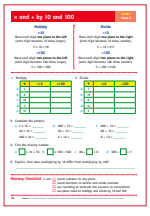
## Teaching as Inquiry: Reflection Notes

| Reflection Prompts | Notes / Next Steps |
|---|---|
| Which students confidently identify the place and value of digits in whole and decimal numbers? | |
| Which students accurately compare and order whole numbers and decimals? | |
| Which students use place-value structure to interpret numbers in te reo Māori? | |
| Which students understand tenths, hundredths and the role of placeholder zeros? | |
| What misconceptions require further teaching or practice? | |
| Which students are ready for extension with more complex whole and decimal numbers? | |

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# Term 1 Week 3 Overview

## Number: Number structures: Working with place value

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**Rounding numbers** | Round whole numbers to a specified place value using place value and midpoint reasoning. | ✓ Identify the rounding place<br>✓ Use the deciding digit accurately<br>✓ Round to tens, hundreds and thousands<br>✓ Round to ten thousands and hundred thousands<br>✓ Explain rounding decisions | – Locate numbers between neighbouring multiples<br>– Use midpoints to determine whether numbers round up or down<br>– Work backwards to identify ranges that round to a given value<br>– **Mathletics Online Practice New Courses: Whole number: Rounding** | **Page 12:** Round to the nearest ten, hundred, thousand, ten thousand and hundred thousand, apply rounding rules, identify ranges that round to a given value.<br> |
| **2**<br>**Estimation** | Use rounding to estimate calculations and determine whether exact answers are reasonable. | ✓ Round numbers to estimate<br>✓ Estimate addition totals<br>✓ Compare estimates and exact answers<br>✓ Check reasonableness<br>✓ Apply estimation in contexts | – Estimate totals by rounding addends<br>– Compare estimates with exact calculations<br>– Use estimates to identify reasonable and unreasonable answers<br>– **Skill Quests: Estimation + –: Rounding & estimating with addition** | **Page 13:** Estimate addition answers, compare estimates with exact totals, solve contextual estimation problems, use rounding to check reasonableness.<br> |
| **3**<br>**Rounding tenths** | Round decimals with tenths to the nearest whole number using place value and midpoint reasoning. | ✓ Locate tenths on number lines<br>✓ Identify bounding whole numbers<br>✓ Round tenths accurately<br>✓ Explain rounding decisions<br>✓ Identify decimals that round to a target whole number | – Locate tenths between consecutive whole numbers<br>– Round decimals using the 0.5 midpoint<br>– Reason backwards to find decimals that round to a given whole number<br>– **New Courses: Decimals and percentages: The nearest whole number** | **Page 14:** Locate decimals on number lines, round tenths to whole numbers, check rounding decisions, identify decimals that round to a given whole number, estimate contextual calculations.<br> |
| **4**<br>**Rounding hundredths** | Round decimals with hundredths to the nearest whole number and nearest tenth using place value. | ✓ Identify tenths and hundredths<br>✓ Round to whole numbers<br>✓ Round to tenths<br>✓ Apply rounding to money<br>✓ Explain which digit determines the result | – Round hundredths to the nearest whole number<br>– Round hundredths to the nearest tenth<br>– Apply decimal rounding to dollars and 10-cent amounts<br>– **Skill Quests: Round decimals: Rounding hundredths** | **Page 15:** Round prices to the nearest dollar and 10 cents, round decimals to whole numbers and tenths, correct rounding errors, identify numbers that round to a specified tenth.<br> |
| **5**<br>**× and ÷ by 10 and 100** | Use place value to multiply and divide whole numbers and decimals by 10 and 100. | ✓ Multiply by 10 and 100<br>✓ Divide by 10 and 100<br>✓ Explain changes in digit value<br>✓ Recognise number patterns<br>✓ Use inverse operations | – Explore ten times and one tenth using place value<br>– Explore one hundred times and one hundredth.<br>– Use patterns and inverse relationships to find missing values<br>– **New Courses: Decimals and percentages: Divide by 10 or 100** | **Page 16:** Multiply and divide by 10 and 100, complete related patterns, find missing values, explain place-value relationships.<br> |

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## Unit: Number: Number structures: Working with place value

**Focus:** Apply place-value understanding to round whole numbers and decimals, estimate calculations, assess reasonableness, and multiply and divide by 10 and 100

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Rounding whole numbers** | Round whole numbers accurately to a specified place value. | Identifies the rounding place, uses the deciding digit correctly and explains rounding using nearest values. |
| **Estimation** | Use rounding to create useful estimates. | Selects sensible, rounded values and compares estimates with exact answers. |
| **Rounding decimals** | Round tenths and hundredths using place value. | Rounds to whole numbers and tenths accurately and applies the same reasoning to money. |
| **Rounding reasoning** | Understand the role of midpoints and target values. | Identifies values that round to a given number and explains why a number rounds up or down. |
| **× and ÷ by 10 and 100** | Understand how multiplying and dividing by 10 and 100 changes digit value. | Uses place-value reasoning, recognises patterns and applies inverse relationships accurately. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Watch students during rounding, estimation and place-value activities. | Are students using place value and midpoint reasoning rather than relying only on memorised rules? |
| **Oral Check** | Ask students to explain rounding decisions, estimates and changes when multiplying or dividing by 10 and 100. | Listen for accurate mathematical language and clear place-value reasoning. |
| **Written Work** | Review student book pages 12–16. | Check accuracy in rounding, estimation, decimal rounding and × and ÷ by 10 and 100. |
| **Practical Task** | Give students numbers to round, estimate or transform using ×10, ×100, ÷10 and ÷100. | Can students independently select an appropriate strategy and explain their reasoning? |
| **Exit Ticket** | Use short questions covering the week's key concepts. | Identify students requiring targeted support or extension with place value. |

## Quick Quiz / Exit Ticket (5 Questions)

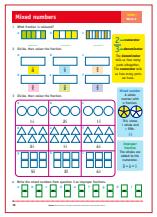
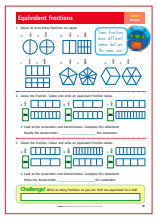
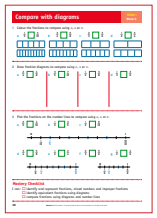
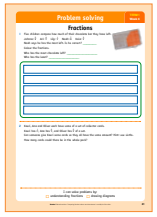
1. Round 47,638 to the nearest thousand.
2. Estimate 286 + 417 by rounding appropriately.
3. Round 6.7 to the nearest whole number.
4. Round 8.46 to the nearest tenth.
5. Calculate 4.8 × 10 and 480 ÷ 100.

## Teaching as Inquiry: Reflection Notes

| Reflection Prompts | Notes / Next Steps |
|---|---|
| Which students confidently round whole numbers using place value and midpoints? | |
| Which students use sensible rounding choices to estimate and check answers? | |
| Which students accurately round tenths and hundredths to the required place value? | |
| Which students explain × and ÷ by 10 and 100 through changes in digit value? | |
| What misconceptions about rounding, estimation or place value require further teaching? | |
| Which students are ready for extension with more complex decimal and estimation problems? | |

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# Term 1 Week 4 Overview Number: Rational numbers: Fractions

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**Animal fractions** | Find and describe unit and non-unit fractions of whole-number collections using equal grouping and fraction relationships. | ✓ Identify fractions of collections<br>✓ Find unit fractions<br>✓ Find non-unit fractions<br>✓ Use numerator and denominator correctly<br>✓ Explain fraction reasoning | – Find unit fractions by dividing collections into equal groups<br>– Find non-unit fractions from the corresponding unit fraction<br>– Compare fractional amounts from the same whole<br>– **Mathletics Online Practice**<br>**New Courses: Fractions: Are you ready? Proper fractions** | **Page 17:** Count animal groups, find unit and non-unit fractions of collections, express groups as fractions of a whole, compare fractional amounts.<br> |
| **2**<br>**Mixed numbers** | Represent mixed numbers as wholes and fractional parts and connect them to equivalent improper fractions. | ✓ Identify numerators and denominators<br>✓ Represent mixed numbers<br>✓ Count fractional parts across wholes<br>✓ Convert mixed numbers to improper fractions<br>✓ Explain equivalence | – Build mixed numbers from wholes and equal fractional parts<br>– Count fractional parts across more than one whole<br>– Convert mixed numbers to improper fractions efficiently<br>– **New Courses: Fractions: Mixed numbers to improper fractions, Improper fractions to mixed numbers** | **Page 18:** Identify fractions, partition and colour fractional parts, represent mixed numbers, convert mixed numbers to improper fractions.<br> |
| **3**<br>**Equivalent fractions** | Recognise and generate equivalent fractions using visual models and multiplicative relationships between numerators and denominators. | ✓ Recognise equivalent fractions<br>✓ Represent equivalence visually<br>✓ Generate equivalent fractions<br>✓ Multiply or divide by the same factor<br>✓ Explain why values remain equal | – Show equivalence by subdividing equal fractional parts<br>– Generate equivalent fractions by scaling numerator and denominator<br>– Find equivalent fractions by dividing numerator and denominator by a common factor<br>– **New Courses: Fractions: Counting by fractions** | **Page 19:** Represent equivalent fractions, generate equivalents by doubling or halving, recognise fraction families, find fractions equivalent to one half.<br> |
| **4**<br>**Compare with diagrams** | Compare fractions using diagrams, equivalent fractions and number lines and describe relationships using <, > and =. | ✓ Represent fractions with diagrams<br>✓ Use equivalent fractions to compare<br>✓ Locate fractions on number lines<br>✓ Use <, > and = accurately<br>✓ Justify comparisons | – Compare fractions by representing them with a common fractional unit<br>– Use equivalent fractions to compare related denominators efficiently<br>– Compare fractions by locating them on number lines<br>– **New Courses: Fractions: Compare and order fractions** | **Page 20:** Compare fractions using diagrams and number lines, generate equivalent fractions with related denominators, use <, > and =.<br> |
| **5**<br>**Problem solving: Fractions** | Apply fraction knowledge, equivalence and visual representations to solve problems involving comparison and fractional parts of a whole. | ✓ Identify relevant fraction information<br>✓ Select an appropriate strategy<br>✓ Compare fractions<br>✓ Use equivalent fractions<br>✓ Determine fractional quantities and wholes<br>✓ Justify solutions | – Compare fractions using useful benchmarks<br>– Solve fraction problems by converting quantities to a common fractional unit<br>– Work backwards from known fractional amounts to determine the whole<br>– **Activity (Courses): Fractions: Fraction word problems** | **Page 21:** Compare fractional amounts, use equivalent fractions and diagrams, reason about fractional quantities, redistribution and possible whole-number sets.<br> |

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## Unit: Number: Rational numbers: Fractions

**Focus:** Represent, compare and solve problems with fractions, including fractions of collections, mixed numbers, improper fractions and equivalent fractions

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Fractions of collections** | Find unit and non-unit fractions of whole-number collections. | Uses equal grouping and interprets numerator and denominator correctly. |
| **Mixed numbers and improper fractions** | Understand that mixed numbers and improper fractions can represent the same quantity. | Represents and converts between the two forms accurately. |
| **Equivalent fractions** | Recognise and generate fractions with the same value. | Multiplies or divides numerator and denominator by the same factor. |
| **Comparing fractions** | Compare fractions using diagrams, equivalence and number lines. | Uses <, > and = accurately and justifies comparisons. |
| **Fraction problem solving** | Apply fraction relationships to solve unfamiliar problems. | Selects an appropriate representation or strategy and explains the solution. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Watch students during fraction modelling, comparison and problem-solving activities. | Are students using accurate fraction representations and appropriate strategies? |
| **Oral Check** | Ask students to explain fraction relationships, equivalence and comparisons. | Listen for accurate fraction language and clear mathematical reasoning. |
| **Written Work** | Review student book pages 17–21. | Check accuracy in fractions of collections, mixed numbers, equivalence, comparison and problem solving. |
| **Practical Task** | Give students a fraction task requiring a diagram, equivalent fraction or fractional amount. | Can students independently choose a suitable representation and justify their answer? |
| **Exit Ticket** | Use short questions covering the week's key concepts. | Identify students requiring targeted support or extension with fractions. |

## Quick Quiz / Exit Ticket (5 Questions)

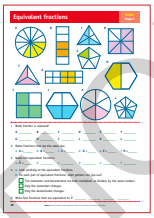
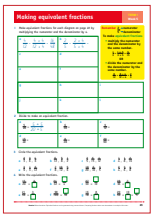
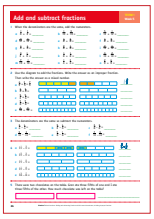
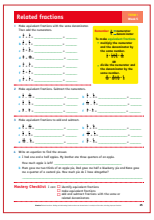
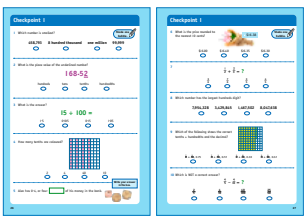
1. What is $\frac{3}{4}$ of 24?
2. Write $2\frac{3}{5}$ as an improper fraction.
3. Write one fraction equivalent to $\frac{3}{4}$.
4. Compare $\frac{2}{3}$ and $\frac{5}{6}$ using <, > or =.
5. If $\frac{1}{5}$ of a collection is 6, how many objects are in the whole collection?

## Teaching as Inquiry: Reflection Notes

| Reflection Prompts | Notes / Next Steps |
|---|---|
| Which students confidently find unit and non-unit fractions of collections? | |
| Which students connect mixed numbers, improper fractions and equivalent fractions accurately? | |
| Which students compare fractions using appropriate diagrams, equivalence or number lines? | |
| What fraction misconceptions require further teaching or practice? | |
| Which students are ready for extension with more complex fraction problems? | |

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# Term 1 Week 5 Overview Number: Rational numbers: Equivalent fractions

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**Equivalent fractions** | Recognise and generate equivalent fractions using multiplicative relationships. | ✓ Recognise equivalent fractions<br>✓ Generate fraction families<br>✓ Identify multiplicative relationships<br>✓ Explain equivalence | – Recognise and generate equivalent fractions<br>– Explore fraction families and multiplicative relationships<br>– **Mathletics Online Practice**<br>**New Courses: Fractions: Equivalence** | **Page 22:** Recognise and generate equivalent fractions using diagrams, fraction families and multiplicative relationships.<br> |
| **2**<br>**Making equivalent fractions** | Generate equivalent fractions by multiplying or dividing the numerator and denominator by the same factor. | ✓ Multiply to generate equivalents<br>✓ Divide using common factors<br>✓ Find missing values<br>✓ Explain relationships | – Generate equivalent fractions using multiplication and division<br>– Use common factors and solve missing values<br>– **Skill Quests: Equivalent factions: Equivalent fractions up to & greater than 1** | **Page 23:** Generate equivalent fractions using multiplication, division and common factors, and find missing numerators and denominators.<br> |
| **3**<br>**Add and subtract fractions** | Add and subtract fractions with the same denominator and represent answers greater than one as mixed numbers. | ✓ Add like fractions<br>✓ Subtract like fractions<br>✓ Recognise totals greater than one<br>✓ Convert improper fractions to mixed numbers | – Add and subtract equal fractional parts<br>– Work across one whole and with mixed quantities<br>– **New Courses: Fractions: Add fractions** | **Page 24:** Add and subtract fractions with the same denominator, work with improper fractions and mixed numbers, and solve fraction problems.<br> |
| **4**<br>**Related fractions** | Add and subtract fractions with related denominators using equivalent fractions and common denominators. | ✓ Find common denominators<br>✓ Generate equivalent fractions<br>✓ Add and subtract related fractions<br>✓ Explain strategies | – Find and use common denominators<br>– Add and subtract using equivalent fractions<br>– **New Courses: Fractions: Equivalence** | **Page 25:** Find common denominators, generate equivalent fractions, and add and subtract fractions with related denominators.<br> |
| **5**<br>**Checkpoint 1** | Demonstrate understanding of key number concepts developed. | ✓ Apply place value<br>✓ Interpret decimals<br>✓ Round accurately<br>✓ Recognise equivalent fractions<br>✓ Apply fraction operations | – Complete Checkpoint 1 independently<br>– Apply place value, decimal, rounding and fraction knowledge | **Pages 26–27:** Complete Checkpoint 1 independently to demonstrate place value, decimals, ÷100, rounding, equivalent fractions, fraction operations concepts from Weeks 1–5.<br> |

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# Unit: Number: Rational numbers: Equivalent fractions

**Focus:** Recognise and generate equivalent fractions; add and subtract fractions with same and related denominators; apply fraction, decimal, place-value and rounding knowledge

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Equivalent fractions** | Recognise and generate equivalent fractions using multiplicative relationships. | Multiplies or divides the numerator and denominator by the same factor. |
| **Fraction operations** | Add and subtract fractions with the same denominator. | Operates accurately on numerators and interprets answers greater than one whole. |
| **Related fractions** | Use equivalent fractions to add and subtract fractions with related denominators. | Finds a common denominator and renames fractions accurately. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Observe students during fraction activities and calculations. | Are students using equivalence and fraction strategies accurately? |
| **Oral Check** | Ask students to explain equivalent fractions and common denominators. | Listen for clear reasoning and correct mathematical language. |
| **Written Work** | Review student book pages 22–25. | Check accuracy with fractions, decimals, place value and rounding. |
| **Practical Task** | Ask students to model or represent equivalent fractions and explain how they know the fractions are equivalent. | Can students use representations to demonstrate and explain fraction equivalence? |
| **Exit Ticket** | Use short equivalent-fraction and fraction-operation questions. | Identify students requiring targeted support or extension with equivalent fractions. |
| **Checkpoint** | Review completed Checkpoint 1 (pages 26–27) | Identify strengths and misconceptions across number structures and rational numbers. |

## Quick Quiz / Exit Ticket (5 Questions)

1. Write two fractions equivalent to $\frac{2}{3}$.
2. Complete: $\frac{4}{5} = \frac{\square}{15}$.
3. Calculate: $\frac{3}{8} + \frac{4}{8}$.
4. Calculate: $\frac{5}{6} - \frac{1}{3}$.
5. Calculate: $\frac{2}{3} + \frac{1}{2}$.

## Teaching as Inquiry: Reflection Notes

### Reflection Prompts

Which students confidently recognise and generate equivalent fractions?

Which students accurately add and subtract fractions with same or related denominators?

Which students independently identify and use a common denominator?

Which students successfully applied their knowledge in Checkpoint 1?

What key misconceptions require further teaching?

### Notes / Next Steps

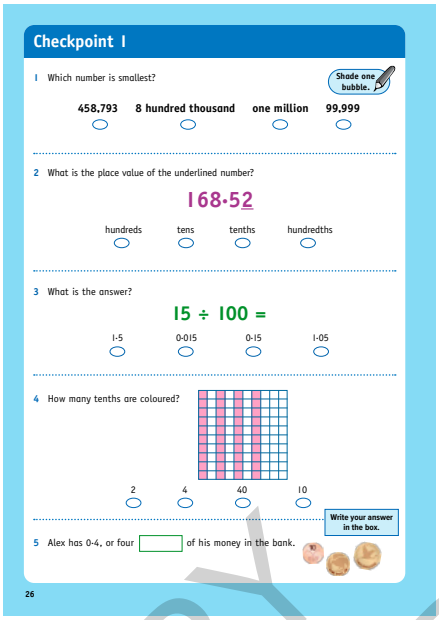
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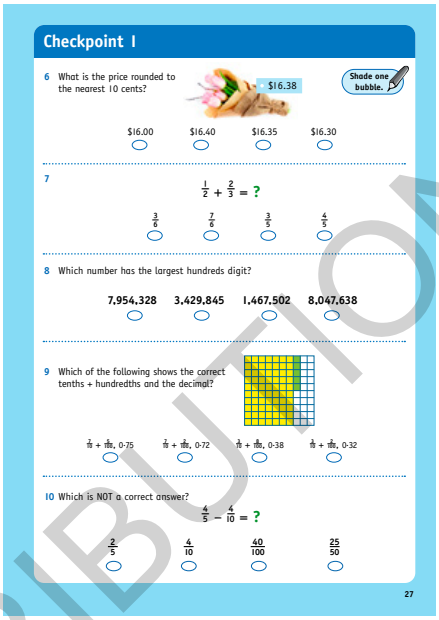
# CHECKPOINT 1

## Purpose

This checkpoint assesses students' understanding of **whole-number and decimal place value, fractions, decimals and rounding**. It provides teachers with a snapshot of students' ability to compare large numbers, identify decimal place value, multiply and divide using powers of 10, represent tenths and hundredths, connect fractions and decimals, round money amounts, and add and subtract fractions.

The checkpoint should take approximately **20–30 minutes** and may be completed in **one sitting**.




## Assessment Overview

| Part | Focus | Questions | Curriculum Links | Skills Assessed |
|---|---|---|---|---|
| 1, 8 | Whole-number place value | Comparing large numbers, identifying the value of digits | Number structures | Compares and orders large whole numbers and uses place value to identify and compare digits in numbers to millions. |
| 2–5, 9 | Decimal place value | Decimal place value, dividing by 100, representing tenths and hundredths, interpreting decimals | Number structures, Operations | Identifies decimal place value, uses place-value understanding when dividing by 100, represents tenths and hundredths, and connects decimal representations. |
| 6 | Rounding decimals and money | Rounding a price to the nearest 10 cents | Number structures, Financial mathematics | Rounds a decimal money amount to the nearest ten cents using place-value understanding. |
| 7, 10 | Fractions | Adding fractions, subtracting fractions and recognising equivalent forms | Number structures, Operations | Adds and subtracts fractions and recognises equivalent fraction representations. |

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# CHECKPOINT 1 Student Recording Sheet & Marking Rubric

**Unit:** Number: Rational numbers, Number structures, Operations, Financial mathematics **Total Marks:** 20

**Student Name:** **Date:**

## Marking Sheet

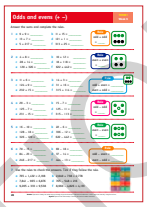
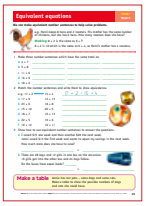
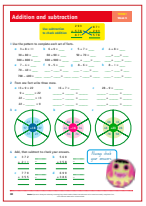
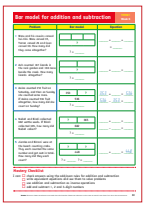
| Part | Task | Max Marks | Student Score | Notes / Observations |
|---|---|---|---|---|
| 1 | Identify the smallest number | 1 | / 1 | |
| 2 | Identify the place value of a decimal digit | 1 | / 1 | |
| 3 | Divide a decimal number by 100 | 2 | / 2 | |
| 4 | Identify tenths represented in a hundred grid | 2 | / 2 | |
| 5 | Connect a decimal to tenths expressed in words | 2 | / 2 | |
| 6 | Round a money amount to the nearest 10 cents | 2 | / 2 | |
| 7 | Add fractions with related denominators | 2 | / 2 | |
| 8 | Identify and compare the hundreds digit in large numbers | 2 | / 2 | |
| 9 | Connect a visual representation with tenths, hundredths and a decimal | 3 | / 3 | |
| 10 | Subtract fractions and recognise equivalent answers | 3 | / 3 | |
| | **TOTAL:** | **20** | **/ 20** | |

## Achievement Rubric

| Score Range | Progress Descriptor | Interpretation | Suggested Follow-Up |
|---|---|---|---|
| **18–20** | **Exceeding** | Strong and consistent understanding of whole-number and decimal place value, fractions and rounding. Accurately connects different representations and applies number relationships independently. | Extend with larger whole numbers, more complex decimal place-value problems, fraction equivalence and operations, and rounding to different place values. |
| **15–17** | **Proficient** | Secure understanding of the assessed concepts, with only occasional errors when applying place value, fraction or rounding knowledge. | Reinforce decimal place value, division by powers of 10, fraction-decimal connections, equivalent fractions and rounding strategies. |
| **11–14** | **Consolidating** | Sound understanding of most concepts, with some gaps or inconsistencies in connecting representations and applying number relationships. | Continue guided practice with place-value charts, decimal grids, tenths and hundredths, fraction equivalence and number-line rounding. |
| **6–10** | **Developing** | Developing understanding of whole numbers, decimals and fractions, with support required to apply place-value and fraction concepts consistently. | Focus on concrete and visual place-value models, tenths and hundredths grids, simple equivalent fractions and practical rounding activities. |
| **0–5** | **Emerging** | Beginning to develop foundational understanding of place value, fractions and decimals and requires support with key representations and number relationships. | Revisit whole-number place value, tenths and hundredths, simple fraction models, decimal representations and basic rounding using visual supports. |

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# Term 1 Week 6 Overview Number: Operations: Addition and subtraction

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**Odds and evens (+ –)** | Identify and apply odd and even patterns in addition and subtraction. | ✓ Identify odd/even numbers<br>✓ Predict parity of sums and differences<br>✓ Apply odd/even rules<br>✓ Check number sentences | – Investigate addition and subtraction parity rules<br>– Predict results using odd/even properties<br>– Use parity to check number sentences<br>– **Mathletics Online Practice New Courses: Addition, Subtraction: Are you ready?** | **Page 28:** Investigate odd and even number rules, apply addition and subtraction patterns, and use parity to check calculations.<br> |
| **2**<br>**Equivalent equations** | Recognise and create equivalent equations and use them to find unknown values. | ✓ Identify equivalent equations<br>✓ Create equal expressions<br>✓ Use = correctly<br>✓ Find unknown values | – Explore expressions with the same total<br>– Use compensation to maintain equivalence<br>– Find unknown values using equivalent equations<br>– **New Courses: Addition: Make 10, 100 or 1000; Patterns and equivalence: Are these equivalent? + –** | **Page 29:** Recognise and create equivalent equations, find unknown values, and solve problems using equal expressions and number sentences.<br> |
| **3**<br>**Addition and subtraction** | Use known facts, place value and inverse relationships to solve and check calculations. | ✓ Extend known facts<br>✓ Generate fact families<br>✓ Apply place value<br>✓ Use inverse operations to check | – Extend basic facts to tens and hundreds<br>– Build related addition and subtraction facts<br>– Use subtraction to check addition<br>– **New Courses: Subtraction: Using addition to subtract** | **Page 30:** Use place-value patterns and related facts to solve addition and subtraction calculations and check answers using inverse operations.<br> |
| **4**<br>**Bar model for addition and subtraction** | Represent part–whole relationships with bar models and connect them to addition and subtraction equations. | ✓ Identify parts and whole<br>✓ Locate unknown quantities<br>✓ Select an operation<br>✓ Connect models and equations | – Identify part–whole relationships<br>– Determine operations from the position of the unknown<br>– Connect equations with bar models<br>– **New Courses: Addition, Subtraction: Split strategy + –** | **Page 31:** Represent part–whole relationships using bar models and equations, identify unknown quantities, and solve addition and subtraction problems.<br> |
| **5**<br>**Problem solving: Think of a number** | Identify and generalise patterns in multi-step addition and subtraction sequences. | ✓ Follow operation sequences<br>✓ Identify inverse operations<br>✓ Find overall change<br>✓ Explain and create patterns | – Combine additions and subtractions to find net change<br>– Simplify sequences using inverse operations<br>– Generalise and create number puzzles<br>– **New Courses: Addition: Problem solving with +** | **Page 32:** Follow multi-step addition and subtraction sequences, use inverse operations to identify overall change, and solve and create number puzzles.<br> |

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# Unit: Number: Operations: Addition and subtraction

**Focus:** Apply addition and subtraction relationships, odd/even properties, equivalence, inverse operations and part–whole representations to solve, check and explain problems

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Odd and even patterns** | Addition and subtraction of odd and even numbers follow predictable patterns. | Predicts parity and uses odd/even rules to check calculations. |
| **Equivalent equations** | Different expressions can have the same value. | Creates and completes equivalent equations and uses = to represent equality. |
| **Addition and subtraction relationships** | Known facts and inverse relationships support efficient calculation and checking. | Extends facts using place value, generates related facts and checks addition using subtraction. |
| **Bar models** | Bar models represent parts, wholes and unknown quantities. | Identifies the relationship, selects the correct operation and connects models to equations. |
| **Number patterns** | Multi-step operations can be simplified by considering their overall effect. | Identifies inverse operations, determines overall change and explains why a number pattern works. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Observe students during investigations and problem-solving activities. | Do students identify relationships and select strategies before calculating? |
| **Oral Check** | Ask students to explain an odd/even rule, equivalent equation or inverse relationship. | Listen for students justifying their reasoning and use of clear and accurate mathematical language. |
| **Practical Task** | Give students a part–whole or multi-step number problem to represent and solve. | Can students represent the relationship, select an operation and explain their solution? |
| **Written Work** | Review student book pages 28–32. | Check accuracy with parity, equivalence, related facts, bar models and number patterns. |
| **Exit Ticket** | Use short questions covering the week's key concepts. | Identify students requiring further support with relationships, representations or reasoning. |

## Quick Quiz / Exit Ticket (5 Questions)

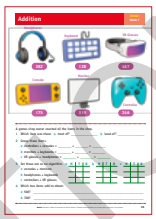
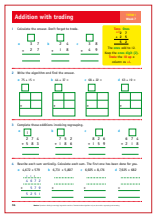
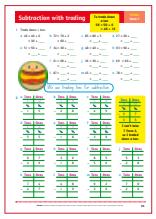
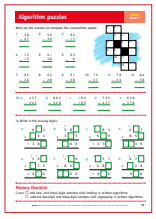
1. Without calculating exactly, will 347 + 216 have an odd or even answer? Explain.
2. Complete: 38 + 17 = 40 + ___.
3. If 26 + 19 = 45, write a related subtraction fact.
4. A bar model has a whole of 625 and one part of 278. What equation finds the missing part?
5. A number is increased by 12, decreased by 5 and decreased by 7. What happens to the starting number? Explain.

## Teaching as Inquiry: Reflection Notes

| Reflection Prompts | Notes / Next Steps |
|---|---|
| Which students confidently use odd/even properties and inverse relationships to predict or check results? | |
| Which students understand equivalence and use the = symbol relationally? | |
| Which students use known facts and place value efficiently with larger numbers? | |
| Which students accurately connect part–whole relationships, bar models and equations? | |
| Which students can identify and explain the overall effect of multi-step number operations? | |
| What misconceptions were noticed about parity, equality, inverse operations, bar models or number patterns? | |

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# Term 1 Week 7 Overview Number: Operations: Trading-in algorithms

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**Addition** | Use place value, partitioning and regrouping to add three-digit whole numbers accurately. | ✓ Partition numbers<br>✓ Regroup place values<br>✓ Use written algorithms<br>✓ Estimate to check | – Bridge to friendly numbers<br>– Partition and recombine by place value<br>– Connect renaming to the written algorithm<br>– **Mathletics Online Practice**<br>**New Courses: Addition: Partition strategy +** | **Page 33:** Use place value, partitioning and regrouping to add three-digit numbers accurately and estimate to check answers.<br> |
| **2**<br>**Addition with trading** | Apply place-value trading to add increasingly large whole numbers using written algorithms. | ✓ Recognise when trading is needed<br>✓ Rename place values<br>✓ Record trades accurately<br>✓ Add larger numbers | – Regroup using expanded place value<br>– Trade across more than one place<br>– Connect renaming to the written algorithm<br>– **New Courses: Addition: Written methods +** | **Page 34:** Apply place-value trading across ones and tens to add larger numbers accurately using written algorithms.<br> |
| **3**<br>**Subtraction with trading** | Use place-value trading to rename tens as ones and subtract accurately. | ✓ Rename tens as ones<br>✓ Identify when trading is needed<br>✓ Subtract accurately<br>✓ Explain trading | – Rename numbers without changing value<br>– Decide when trading is necessary<br>– Connect trading to written subtraction<br>– **New Courses: Subtraction: Written methods –** | **Page 35:** Use place-value trading to rename tens as ones and accurately subtract two-digit numbers using written methods.<br> |
| **4**<br>**More subtraction** | Apply place value, trading and efficient strategies to subtract three-digit numbers and find differences. | ✓ Trade across place values<br>✓ Find differences<br>✓ Select efficient strategies<br>✓ Solve problems | – Extend trading across place values<br>– Find differences by counting up<br>– Choose efficient subtraction strategies<br>– **New Courses: Subtraction: Partition strategy –** | **Page 36:** Apply place-value trading and efficient mental and written strategies to subtract three-digit numbers and solve problems involving differences.<br> |
| **5**<br>**Algorithm puzzles** | Apply place-value and trading knowledge to solve addition and subtraction algorithm puzzles. | ✓ Solve written algorithms<br>✓ Identify trades<br>✓ Find missing digits<br>✓ Check solutions | – Reason backwards from known results<br>– Use place-value constraints in subtraction<br>– Test and eliminate possible digits<br>– **Challenge: Addition & Subtraction: Missing numbers!** | **Page 37:** Apply addition and subtraction algorithms to solve number puzzles, find missing digits and reason with place-value constraints.<br> |

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## Unit: Number: Operations: Trading-in algorithms

**Focus:** Add and subtract increasingly large whole numbers using place value, regrouping, renaming and standard written algorithms; find differences; select efficient strategies and reason about missing digits

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Addition** | Place value supports accurate addition of increasingly large numbers. | Aligns place values, calculates accurately and uses estimation to check totals. |
| **Addition with trading** | Ten units can be renamed as one unit of the next place value. | Trades accurately and records renamed values correctly in written algorithms. |
| **Subtraction with trading** | One ten can be renamed as ten ones without changing the number's value. | Recognises when trading is required and completes subtraction accurately. |
| **Larger subtraction** | Place-value trading and efficient strategies can be used to find differences. | Trades across place values, finds differences and selects appropriate strategies. |
| **Algorithm reasoning** | Known digits, place value and trading provide clues for unknown values. | Determines missing digits systematically and checks completed algorithms. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Observe students solving addition and subtraction calculations. | Do students align place values and trade accurately? |
| **Oral Check** | Ask students to explain a trade or strategy. | Listen for students explaining how renaming works for trading and regrouping. |
| **Practical Task** | Give students an algorithm with a missing digit or required trade. | Can students use place-value reasoning rather than guessing? |
| **Written Work** | Review student book pages 33–37. | Check accuracy with addition, subtraction, trading, differences and algorithm puzzles. |
| **Exit Ticket** | Use short addition, subtraction and missing-digit questions. | Identify students needing further support with place value, trading or written algorithms. |

## Quick Quiz / Exit Ticket (5 Questions)

1. Calculate 368 + 247.
   Show any trading.
2. Calculate 74 – 38.
   Explain how you renamed 74.
3. Calculate 723 – 458 using a written algorithm.
4. Find the difference between 486 and 625.
5. Find the missing digit:
   5☐ + 27 = 83.
   Explain how you know.

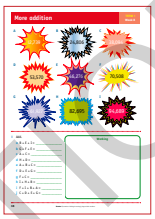
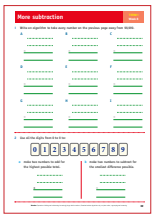
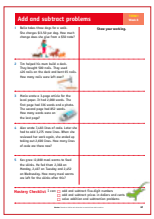
## Teaching as Inquiry: Reflection Notes

| Reflection Prompts | Notes / Next Steps |
|---|---|
| Which students confidently align place values and use written addition and subtraction algorithms? | |
| Which students understand trading as renaming equivalent place-value quantities? | |
| Which students accurately manage trading across more than one place value? | |
| Which students select efficient strategies when finding differences? | |
| Which students use place-value reasoning to solve missing-digit algorithms rather than guessing? | |
| What misconceptions were noticed about place-value alignment, trading, written algorithms or missing digits? | |

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# Term 1 Week 8 Overview

## Number: Operations, Financial mathematics: Add and subtract

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**More addition** | Use place-value understanding and efficient written strategies to add increasingly large whole numbers, including multiple addends. | ✓ Align numbers by place value<br>✓ Regroup accurately<br>✓ Add multiple numbers<br>✓ Use efficient grouping<br>✓ Check totals | – Add increasingly large whole numbers<br>– Combine compatible addends efficiently<br>– Estimate and check totals<br>– **Mathletics Online Practice Skill Quests: Add larger numbers: Choosing efficient mental strategies** | **Page 38:** Add combinations of five-digit numbers involving two, three and four addends.<br> |
| **2**<br>**More subtraction** | Use place-value understanding, trading and efficient strategies to subtract increasingly large whole numbers and investigate differences. | ✓ Align numbers by place value<br>✓ Trade accurately<br>✓ Use written subtraction<br>✓ Select efficient strategies<br>✓ Compare differences | – Subtract increasingly large numbers<br>– Use trading and compensation<br>– Investigate digit arrangements to minimise differences<br>– **Activities (Courses): Addition & subtraction: 3-Digit Differences: 1 Regrouping** | **Page 39:** Subtract five-digit numbers from 99,999 and arrange digits to investigate totals and differences.<br> |
| **3**<br>**Addition of money** | Represent and add money amounts accurately, estimate total costs and use calculators appropriately to solve and check financial calculations. | ✓ Represent dollars and cents<br>✓ Add money accurately<br>✓ Calculate multiple costs<br>✓ Estimate totals<br>✓ Check reasonableness | – Connect money to decimal place value<br>– Combine money amounts efficiently<br>– Estimate and check totals using a calculator<br>– **Skill Quests: Calculate cost: Calculating costs of items & change** | **Page 40:** Calculate different lunch combinations, estimate the cost of all items and use a calculator to find the actual total.<br> |
| **4**<br>**Add and subtract problems** | Select and apply efficient addition and subtraction strategies to solve one- and multi-step problems involving money and increasingly large whole numbers. | ✓ Identify relevant information<br>✓ Select operations<br>✓ Solve multi-step problems<br>✓ Show working<br>✓ Check answers | – Map multi-step problems<br>– Work backwards to find unknown amounts<br>– Check whether solutions fit the context<br>– **New Courses: Subtraction: Problem solving with + –** | **Page 41:** Solve contextual problems involving change, remaining quantities, totals and increasingly large whole numbers.<br> |
| **5**<br>**Problem solving: Holiday budget** | Apply addition and multiplication strategies to calculate and compare costs and develop a justified holiday budget. | ✓ Interpret pricing information<br>✓ Identify repeated costs<br>✓ Calculate group costs<br>✓ Find total expenses<br>✓ Justify budget choices | – Identify one-off and repeated costs<br>– Calculate costs for groups and multiple days<br>– Build and compare a holiday budget<br>– **Challenge: Addition & Subtraction: Explore an addition game** | **Page 42:** Calculate accommodation, car hire and entertainment costs for a family holiday and compare expenses.<br> |

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## Unit: Operations, Financial mathematics: Add and subtract

**Focus:** Add and subtract large whole numbers; calculate with money and apply appropriate operations to multi-step and financial problems

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Addition and subtraction** | Use place value, regrouping and efficient strategies with large numbers. | Calculates accurately and selects appropriate strategies. |
| **Money** | Add dollars and cents and estimate totals. | Uses decimal notation accurately and checks totals for reasonableness. |
| **Problem solving** | Select and sequence operations in contextual problems. | Identifies relevant information and shows logical working. |
| **Financial mathematics** | Calculate and compare costs in budgeting contexts. | Interprets rates correctly and calculates total expenses. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Observe students during calculations and problem-solving activities. | Are students selecting appropriate strategies and applying place-value understanding accurately? |
| **Oral Check** | Ask students to explain how they solved a calculation or problem. | Listen for clear reasoning and appropriate mathematical language. |
| **Written Work** | Review student book pages 38–42. | Check accuracy with large numbers, money and multi-step problems. |
| **Practical Task** | Ask students to add and subtract with money using old catalogues. | Can students add and subtract money flexibly and explain their strategies effectively? |
| **Exit Ticket** | Use short calculation and financial problem-solving questions. | Identify students requiring targeted support or extension with calculations and money. |

## Quick Quiz / Exit Ticket (5 Questions)

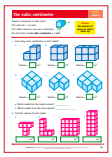
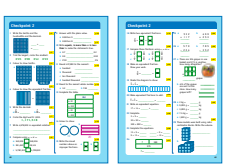
1. Calculate 24,806 + 38,094 + 12,739.
2. Calculate 99,999 – 46,276.
3. Calculate $7.50 + $9.50 + $8.60.
4. A school has 5,000 pencils. It uses 1,875 and buys another 950. How many pencils does it have now?
5. A hotel costs $180 per night for 4 nights. What is the total accommodation cost?

## Teaching as Inquiry: Reflection Notes

| Reflection Prompts | Notes / Next Steps |
|---|---|
| Which students confidently add and subtract large whole numbers? | |
| Which students accurately calculate with dollars and cents? | |
| Which students select and sequence operations independently in multi-step problems? | |
| Which students correctly interpret repeated costs when budgeting? | |
| What misconceptions about place value, money or operation selection need further teaching? | |

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# Term 1 Week 9 Overview Measurement: Measuring: Mass and volume

| Lesson & Topic | Learning Intention | Success Criteria | Main Activities | Student Book Practice |
|---|---|---|---|---|
| **1**<br>**Kilograms** | Convert, represent, compare and order masses expressed in grams, kilograms and decimal kilograms. | ✓ Convert kg and g<br>✓ Use decimal kilograms<br>✓ Compare equivalent masses<br>✓ Order masses | – Convert between grams, mixed units and decimal kilograms<br>– Compare masses using common units<br>– Order masses from smallest to largest<br>– **Mathletics Online Practice Activities (Courses): Measuring, perimeter, area, volume & time: How Heavy?** | **Page 43:** Convert between grams, kilograms and decimal kilograms, compare equivalent masses and order masses accurately.<br> |
| **2**<br>**Grams and kilograms** | Convert and compare masses in grams and kilograms and select appropriate units for measuring mass. | ✓ Convert g and kg<br>✓ Use mixed units<br>✓ Compare masses<br>✓ Choose appropriate units<br>✓ Read scales | – Convert using the 1,000 relationship<br>– Partition mixed masses<br>– Connect decimal kilograms with grams<br>– **Skill Quests: Mass: Measuring & recording in g, kg** | **Page 44:** Convert and compare masses in grams and kilograms, use benchmark masses and select appropriate units and scales.<br> |
| **3**<br>**The cubic centimetre** | Measure and compare volume by determining the number of cubic centimetres in three-dimensional models. | ✓ Identify $cm^3$<br>✓ Count cubic units<br>✓ Recognise hidden cubes<br>✓ Compare volumes | – Build volume from cubic units<br>– Account for hidden cubes<br>– Count efficiently using rows, columns and layers<br>– **Activities (Courses): Measuring, perimeter, area, volume & time: How many Blocks?** | **Page 45:** Measure and compare volume using cubic centimetres, count cubic units and recognise hidden cubes in three-dimensional models.<br> |
| **4**<br>**Volume** | Calculate the volume of rectangular prisms using cubes per layer and the number of layers. | ✓ Find cubes in one layer<br>✓ Identify equal layers<br>✓ Use multiplication<br>✓ Record volume in $cm^3$ | – Represent layers as arrays<br>– Build prisms from equal layers<br>– Use multiplication to calculate volume<br>– **Skill Quests: Measuring: Volume using cubes: Calculating volumes using cubes** | **Page 46:** Calculate the volume of rectangular prisms using cubes per layer and the number of equal layers and record volume in cubic centimetres.<br> |
| **5**<br>**Investigation: Volume and mass** | Investigate and describe relationships between volume and mass using measurements and recorded evidence. | ✓ Calculate volume<br>✓ Estimate mass<br>✓ Measure accurately<br>✓ Record results<br>✓ Identify relationships | – Plan a fair measurement investigation<br>– Estimate and measure mass<br>– Compare results and identify relationships<br>– **Challenge: Volume & Capacity: Face stickers** | **Page 47:** Investigate relationships between volume and mass by estimating and measuring mass, calculating volume and using recorded results to draw conclusions.<br> |
| **Checkpoint 2** | Demonstrate understanding of key number, algebra and measurement concepts developed across Term 1. | ✓ Apply place value and decimal knowledge<br>✓ Use fraction relationships<br>✓ Solve addition and subtraction<br>✓ Convert mass<br>✓ Calculate volume | – Complete Checkpoint 2 independently<br>– Apply number, fraction, algebra, mass and volume knowledge | **Pages 48–49:** Complete Checkpoint 2 independently to demonstrate understanding of number, operations, mass and volume concepts from across the term.<br> |

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## Unit: Measurement: Measuring: Mass and volume

**Focus:** Convert and compare mass; calculate volume using cubic centimetres and layers

## Key Understandings to Assess

| Area | Expected Understanding | Evidence to Look For |
|---|---|---|
| **Mass** | Convert and compare grams, kilograms and decimal kilograms. | Uses 1 kg = 1,000 g accurately and selects appropriate units. |
| **Volume** | Measure volume using cubic centimetres and equal layers. | Counts cubic units accurately and uses multiplication for rectangular prisms. |
| **Measurement investigation** | Estimate, measure and compare mass and volume. | Records results accurately and identifies relationships from evidence. |

## Assessment Opportunities

| Type | Suggested Activity | What to Observe |
|---|---|---|
| **Observation (Formative)** | Observe students during mass and volume activities. | Are students converting units, measuring accurately and reasoning about volume? |
| **Oral Check** | Ask students to explain a conversion or volume calculation. | Listen for correct use of units and clear mathematical reasoning. |
| **Written Work** | Review student book pages 43–47. | Check accuracy with mass, volume and measurement relationships. |
| **Practical Task** | Ask students to measure and compare mass or volume using appropriate measuring equipment. | Can students select appropriate units and tools, measure accurately and explain their results? |
| **Exit Ticket** | Use short mass, volume and unit-conversion questions. | Identify students requiring targeted support or extension with measurement and conversions. |
| **Checkpoint** | Review completed Checkpoint 2 (pages 48–49). | Identify strengths and misconceptions across number structures, rational numbers, addition and subtraction as well as mass and volume. |

## Quick Quiz / Exit Ticket (5 Questions)

1. Convert 3.25 kg to grams.
2. Convert 4,750 g to kilograms.
3. Which is heavier: 2.8 kg or 2,750 g?
4. A prism has 8 cubes in each layer and 5 layers. What is its volume?
5. A model contains 12 identical 1 $cm^3$ blocks. What is its volume, and what would happen to the volume if the blocks were rearranged?

## Teaching as Inquiry: Reflection Notes

| Reflection Prompts | Notes / Next Steps |
|---|---|
| Which students confidently convert and compare grams and kilograms? | |
| Which students calculate volume accurately using cubic units and layers? | |
| Which students use measurement evidence to make accurate conclusions? | |
| Which students demonstrated secure understanding in Checkpoint 2? | |
| What key misconceptions require further teaching? | |

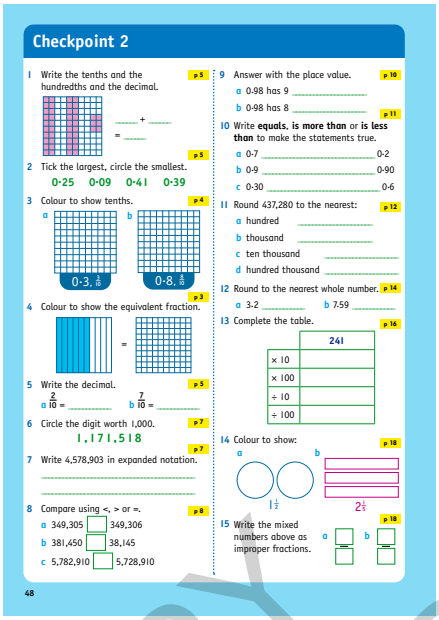
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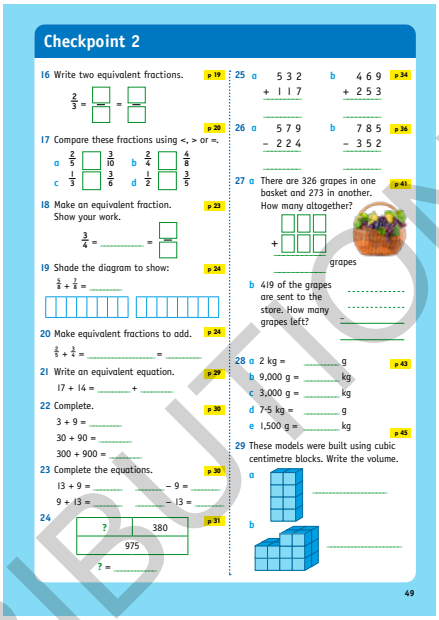
# CHECKPOINT 2

## Purpose

This checkpoint assesses students' understanding across **number, operations, fractions and decimals, algebra and measurement**. It provides teachers with a broad snapshot of students' ability to represent and compare decimals, apply place-value knowledge, round whole and decimal numbers, work with equivalent fractions and mixed numbers, use addition and subtraction relationships, complete written algorithms, convert between kilograms and grams, and determine volume in cubic centimetres.

The checkpoint should take approximately **45–60 minutes** and may be completed in **two or more sittings**.




## Assessment Overview

| Part | Focus | Questions | Curriculum Links | Skills Assessed |
|---|---|---|---|---|
| 1–5, 9–10, 12 | Decimals and place value | Representing tenths and hundredths, comparing decimals, identifying decimal place value and rounding decimals | Number structures | Represents tenths and hundredths as fractions and decimals, compares decimal numbers, identifies place value and rounds decimals to the nearest whole number. |
| 6–8, 11, 13 | Place value | Place value, expanded notation, comparing and rounding whole numbers, multiplying and dividing by 10 and 100 | Number structures | Identifies the value of digits, writes numbers in expanded notation, compares and rounds large numbers, and applies place-value understanding when multiplying and dividing by 10 and 100. |
| 14–20 | Fractions and mixed numbers | Representing mixed numbers, converting to improper fractions, equivalent fractions, comparing and adding fractions | Rational numbers | Represents mixed numbers, converts mixed numbers to improper fractions, generates and compares equivalent fractions, and uses equivalence to add fractions. |
| 21–24 | Number relationships | Equivalent equations, number patterns, inverse operations and missing numbers | Equations and relationships | Uses number relationships and inverse operations to complete equations, recognise patterns and determine missing values. |
| 25–27 | Addition and subtraction | Written addition and subtraction and contextual problems | Operations | Uses written strategies to add and subtract three-digit numbers and applies addition and subtraction to solve multi-step contextual problems. |
| 28 | Mass | Converting kilograms and grams | Measuring | Converts between kilograms and grams, including whole-number and decimal quantities. |
| 29 | Volume | Volume of models made from cubic centimetre blocks | Measuring | Determines the volume of three-dimensional models by counting cubic centimetre units. |

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# CHECKPOINT 2 Student Recording Sheet & Marking Rubric

**Unit:** Number: Number structures, Operations, Rational numbers, Algebra: Equations and relationships, Measurement: Measuring

**Total Marks:** 40

**Student Name:** **Date:**

## Marking Sheet

| Part | Task | Max Marks | Student Score | Notes / Observations |
|---|---|---|---|---|
| 1 | Represent tenths and hundredths and write the decimal | 2 | / 2 | |
| 2 | Compare decimals to identify largest and smallest | 1 | / 1 | |
| 3 | Represent tenths on hundred grids | 2 | / 2 | |
| 4 | Represent an equivalent fraction | 1 | / 1 | |
| 5 | Convert fractions in tenths to decimals | 2 | / 2 | |
| 6 | Identify the digit with a specified place value | 1 | / 1 | |
| 7 | Write a large number in expanded notation | 1 | / 1 | |
| 8 | Compare whole numbers using <, > or = | 2 | / 2 | |
| 9 | Identify decimal place values | 2 | / 2 | |
| 10 | Compare decimals | 1 | / 1 | |
| 11 | Round a whole number to specified place values | 2 | / 2 | |
| 12 | Round decimals to the nearest whole number | 1 | / 1 | |
| 13 | Multiply and divide by 10 and 100 | 2 | / 2 | |
| 14 | Represent mixed numbers visually | 1 | / 1 | |
| 15 | Convert mixed numbers to improper fractions | 1 | / 1 | |
| 16 | Generate equivalent fractions | 1 | / 1 | |
| 17 | Compare fractions using <, > or = | 2 | / 2 | |
| 18 | Create an equivalent fraction | 1 | / 1 | |
| 19 | Add fractions using a diagram | 1 | / 1 | |
| 20 | Use equivalent fractions to add | 1 | / 1 | |
| 21 | Write an equivalent addition equation | 1 | / 1 | |
| 22 | Complete related addition patterns | 1 | / 1 | |
| 23 | Complete addition and subtraction equations | 1 | / 1 | |
| 24 | Find a missing value in a number relationship | 1 | / 1 | |
| 25 | Add three-digit numbers | 1 | / 1 | |
| 26 | Subtract three-digit numbers | 1 | / 1 | |
| 27 | Solve an addition and subtraction word problem | 2 | / 2 | |
| 28 | Convert between kilograms and grams | 2 | / 2 | |
| 29 | Determine volume using cubic centimetre blocks | 2 | / 2 | |
| | **TOTAL:** | **40** | **/ 40** | |

## Achievement Rubric

| Score Range | Progress Descriptor | Interpretation | Suggested Follow-Up |
|---|---|---|---|
| **37–40** | **Exceeding** | Strong and consistent understanding of whole-number and decimal place value, fractions, operations and measurement concepts. Applies strategies accurately across familiar and unfamiliar tasks. | Extend with more complex decimal and fraction relationships, multi-step operations, larger-number calculations and measurement problems requiring conversions and reasoning. |
| **30–36** | **Proficient** | Secure understanding of the assessed concepts, with only occasional errors in calculation, representation or application. | Reinforce rounding and place-value strategies, fraction equivalence and comparison, written addition and subtraction, and conversions between measurement units. |
| **22–29** | **Consolidating** | Sound understanding of most concepts, with some gaps or inconsistencies in selecting and applying strategies. | Continue guided practice with decimal place value, rounding, equivalent fractions, mixed and improper fractions, number relationships, operations and measurement conversions. |
| **12–21** | **Developing** | Developing understanding of place value, fractions, operations and measurement, with support required to apply concepts consistently. | Focus on place-value representations, tenths and hundredths, concrete fraction models, basic addition and subtraction strategies, and practical measurement activities. |
| **0–11** | **Emerging** | Beginning to develop foundational understanding of the assessed number and measurement concepts. | Revisit whole-number and decimal place value, simple fraction representations and equivalence, basic number relationships, addition and subtraction, and concrete measurement experiences. |

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