

Year 6 units

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Use equivalence and compensation to simplify and solve addition calculations

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Use equivalence and compensation to simplify and solve subtraction problems

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1. Use knowledge of part-part-whole structure to solve additive problems

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Threads

- Number
- Number: Addition and Subtraction
- Number: Fractions

Unit description

In this unit pupils will identify the mathematical structures within stories and use their knowledge of additive structures to create stories and to solve problems.

Why this, why now?

This unit revisits the part-part-whole structure and its language to support pupils to make sense of, represent and solve addition and subtraction problems in a range of contexts. They use mental and written strategies to calculate the value of missing parts. This leads to using equivalence and compensation in both addition and then subtraction.

Lessons in unit

1. Explain how a combination of different parts can be equivalent to the same whole
2. Identify structures within stories and use knowledge of structures to create stories
3. Identify the missing part using knowledge of relationships and structures
4. Use a model to interpret a part-part-whole problem with three addends
5. Create stories to match structures presented in a model
6. Use knowledge of additive structure to solve problems
7. Use mental strategies and known facts to calculate the value of a missing part
8. Use written strategies and known facts to calculate the value of a missing part
9. Represent an equation in a part-part-whole model correctly
10. Use part-part-whole structures to solve additive problems in a range of contexts

Prior knowledge requirements

- Understand the meaning of factor and multiple
- Represent addition and subtraction using bar models or part-whole diagrams
- Recognise inverse relationships between addition and subtraction

2. Use equivalence and compensation to simplify and solve addition calculations

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Threads

- Number
- Number: Addition and Subtraction

Unit description

In this unit pupils used the concept of same sum to simplify and solve addition problems.

Why this, why now?

In this unit pupils build on their understanding of additive structures by exploring equivalence in addition equations. They will learn how redistribution can be used to support calculation with whole numbers and decimals. Pupils will calculate missing parts in balanced equations, applying known facts and strategies in a range of contexts. They will then go on to explore equivalence and compensation in subtraction.

Lessons in unit

1. Using redistribution with addition of integers
2. Using redistribution with addition of decimal fractions
3. Using balanced equations to calculate redistribution
4. Use a balanced equation to calculate unknown parts
5. Explain how adjusting one part affects the sum
6. Solve addition calculations mentally by using known facts
7. Solve addition calculations mentally by using known facts in a range of contexts
8. Solve calculations with missing parts
9. Use equivalence and compensation strategies to solve problems
10. Use equivalence and compensation strategies to solve addition problems in a range of contexts

Prior knowledge requirements

- Recognise number pairs and place value relationships
- Apply rounding and adjusting strategies
- Understand and apply fact families

3. Use equivalence and compensation to simplify and solve subtraction problems

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Threads

- Number
- Number: Addition and Subtraction

Unit description

In this unit pupils will explain how increasing or decreasing the minuend affects the difference and solve subtraction calculations mentally by using known facts explaining how adjusting the minuend can make mental calculation easier.

Why this, why now?

Having previously explored equivalence and compensation in addition, pupils now explore these in the context of subtraction where they will consider constant difference and how increasing or decreasing the whole (minuend) and known part (subtrahend) affects the difference. They will apply known facts and strategies to solve problems in a range of contexts. This will prepare them for solving problems with larger numbers and to apply equivalence in different contexts.

Lessons in unit

1. Explain and represent constant difference for subtraction
2. Explain how constant difference can make written calculations more efficient
3. Use constant difference to balance equations and find unknowns
4. Explain how increasing or decreasing the minuend affects the difference
5. Solve subtraction calculations mentally by using known facts
6. Explain how adjusting the minuend can make mental calculation easier
7. Explain how adjusting the subtrahend affects the difference: reduction structure
8. Explain how adjusting the subtrahend affects the difference: partitioning
9. Calculate the difference using knowledge of an adjusted subtrahend: difference structure
10. Use equivalence and compensation strategies to solve subtraction problems in a range of contexts

Prior knowledge requirements

- Understand inverse operations and balancing
- Use number bonds and rounding to adjust calculations
- Rearrange and simplify expressions using known facts

4. Multiples of 1,000

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Threads

- Number
- Number: Place value
- Statistics

Unit description

In this unit pupils will explain how one hundred thousand can be composed and read and write numbers up to one million.

Why this, why now?

This unit develops pupils' understanding of the structure of larger numbers. Having considered the composition of 1,000 through exploring measures contexts, pupils now apply their place value understanding to explain how 10 and 100 thousand can be composed before reading and writing numbers up to 1 million, using place value charts and numbers in different contexts. This will prepare pupils to understand number with 7 and then 8-digits.

Lessons in unit

1. Explain how ten thousand can be composed
2. Explain how one hundred thousand can be composed
3. Read and write numbers up to one million using a place value chart
4. Read and write numbers up to one million in a range of contexts
5. Position five-digit multiples of 1,000 on a marked but unlabelled number line
6. Position 6-digit multiples of 1,000 on a marked but unlabelled number line
7. Count forwards and backwards in powers of 10 to and from any multiple of 1,000
8. Explain that 10,000 is composed of 5,000s, 2,500s and 2,000s
9. Explain that 100,000 is composed of 50,000s, 25,000s and 20,000s
10. Read the scales of graphs and measures using knowledge of the composition of 10,000 and 100,000

Prior knowledge requirements

- Recognise and count in hundreds
- Understand place value to 1,000
- Identify multiples using skip counting

5. Understand place value within numbers with up to 7 digits

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Threads

- Number
- Number: Addition and Subtraction
- Number: Multiplication and division
- Number: Place value

Unit description

In this unit pupils will identify and place the position of 6-digit multiple of one thousand numbers, on a marked, but unlabelled number line. They will read scales in graphing and measures contexts by using their knowledge of the composition of 10,000 and 100,000.

Why this, why now?

In this unit, pupils will explore what is meant by the powers of 10 and their multiples and will use this language, along with their knowledge of place value, to read, write and represent numbers up to 10,000,000. They will use their knowledge of the composition of powers of 10 to solve problems. This will prepare them for ordering, comparing and calculating with numbers of this scale.

Lessons in unit

1. Powers of 10 and their multiples
2. Composition of one million and 10 million
3. Problem solving using knowledge of the composition of powers of 10
4. Read and write numbers up to 10 million
5. Representing numbers up to 10 million

Prior knowledge requirements

- Partition numbers into hundreds, tens and ones
- Recognise digit value to 1,000 or beyond
- Use number lines and base-10 apparatus

6. Order, compare and calculate with numbers up to 8 digits

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Threads

- Number: Addition and Subtraction
- Number: Multiplication and division

Unit description

In this unit pupils will use representations to identify and explain patterns in powers of 10 and read numbers with up to 7 digits efficiently. They will order and compare numbers with up to 8 digits and calculate with numbers of this scale.

Why this, why now?

Pupils now apply their understanding of the composition of numbers up to 10,000,000 to explain the values of digits in these numbers and to compare and order large numbers. They will use mental strategies to add and subtract within and then across boundaries including the millions boundary. Pupils will use patterns in counting sequences and solve problems including positioning and identifying numbers on number lines. This will support them when they round large numbers and solve problems in different contexts.

Lessons in unit

1. Determine the value of digits in numbers up to 10 million
2. Compare numbers with up to eight digits
3. Use knowledge of the composition of seven-digit numbers to solve problems
4. Add and subtract mentally without bridging a boundary
5. Add multiples of powers of 10 crossing the millions boundary
6. Subtract multiples of powers of 10 crossing the millions boundary
7. Composition of seven-digit numbers
8. Using patterns in counting sequences
9. Estimate and identify numbers on number lines
10. Solving problems using column addition and subtraction

Prior knowledge requirements

- Understand place value up to 1 million
- Use formal written methods for addition and subtraction
- Read, write and compare numbers with up to 7 digits

7. Rounding and solving problems with numbers up to 7 digits

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Threads

- Number
- Number: Addition and Subtraction
- Number: Multiplication and division
- Number: Place value

Unit description

In this unit pupils will use their knowledge of the composition of seven-digit numbers to round them and to solve problems, adding and subtracting numbers whilst crossing the millions boundary.

Why this, why now?

Pupils will apply their place value understanding of 7-digit numbers to round them to any power of ten. They will apply mental and written strategies, deciding which is the most efficient, to solve problems in different contexts.

Lessons in unit

1. Rounding 7-digit numbers to the nearest million
2. Rounding seven-digit numbers to any power of 10
3. Solving calculations efficiently
4. Explore mental and written strategies to solve problems
5. Solve problems explaining which strategy is most efficient

Prior knowledge requirements

- Understand place value to at least 1 million
- Round numbers to the nearest 10, 100 or 1000
- Estimate and check answers using rounding

8. Draw, compose and decompose shapes

Year 6

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Threads

- Geometry and Measure
- Probability

Unit description

In this unit pupils will use knowledge of shape properties to draw, sketch and identify shapes.

Why this, why now?

This unit revisits the properties of 2D and 3D shapes and ideas of area and perimeter.

Pupils use their knowledge and understanding to reason about shapes including 2D nets of 3D shapes and the relationship between side lengths and both area and perimeter. They revisit the idea that shapes with the same area can have a different perimeter and vice versa. This prepares them for calculating the area and perimeter of other shapes in the future.

Lessons in unit

1. Use knowledge of shape properties to sketch and identify shapes
2. Use knowledge of shape properties to draw shapes accurately using rulers and protractors
3. 3D shapes can be composed from 2D nets
4. The same 3D shapes can be composed from different 2D nets
5. When a 2D shape is decomposed and the parts rearranged, the area remains the same
6. Any parallelogram can be decomposed and the parts rearranged to form a rectangular parallelogram
7. Two congruent triangles can be arranged to compose a parallelogram
8. Shapes with the same area can have different perimeters and vice versa
9. Reason about shapes using the relationship between side lengths and area and perimeter
10. Reason about compound shapes using the relationship between side lengths and area and perimeter

Prior knowledge requirements

- Name and describe common 2D and 3D shapes
- Recognise how shapes can be built and taken apart
- Use basic geometric vocabulary to describe components

9. Using equivalence to calculate

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Threads

- Number
- Number: Addition and Subtraction
- Number: Multiplication and division

Unit description

In this unit pupils will explain why the product stays the same when one factor is doubled and the other is halved using knowledge of equivalence. They will explain the effect on the quotient when scaling the dividend and divisor by the same amount.

Why this, why now?

Having explored using equivalence to calculate in addition and subtraction, this unit considers equivalence in the context of multiplication and division. Pupils explore and explain what happens when a factor in a multiplication is doubled or halved and the effect on the quotient when the dividend and divisor are scaled. The language of scaling is highlighted which prepares pupils for considering multiplication and division in the context of ratio and proportion in the future.

Lessons in unit

1. Explain why the product stays the same when one factor is doubled and the other is halved
2. Explain the effect on the product when scaling the factors up and down by the same amount
3. Use knowledge of equivalence when scaling factors to solve problems
4. Explain the effect on the quotient when scaling the dividend and the divisor by 10
5. Explain the effect on the quotient when scaling the dividend and the divisor by the same amount

Prior knowledge requirements

- Recognise equivalent fractions or expressions
- Apply balancing strategies to equations
- Use known facts and relationships to simplify calculations

10. Multiplying and dividing by 2-digit numbers

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Threads

- Number
- Number: Addition and Subtraction
- Number: Multiplication and division
- Number: Place value

Unit description

In this unit pupils will extend their understanding of formal calculation strategies to multiply and divide by 2-digit numbers, explaining when other strategies are more efficient.

Why this, why now?

In this unit pupils will apply their understanding of multiplication and division, place value, informal and formal calculation and extend this to multiply and divide by 2-digit numbers. This will include the representations of long multiplication and long division. Pupils will also revisit mental and informal strategies, applying their times table knowledge and the skill of factorising. They will explain when informal and mental strategies are more efficient. This will prepare them to calculate with integers and decimals in the future.

Lessons in unit

1. Explain how to multiply a 3-digit number by a 2-digit number
2. Explain how to use long multiplication to multiply two 2-digit numbers regrouping ones to tens
3. Explain how to use long multiplication to multiply two 2-digit numbers with regrouping
4. Explain how to use long multiplication to multiply a 3-digit by a 2-digit number
5. Explain how to use long multiplication to multiply a 4-digit by a 2-digit number
6. Explain how to use the associative law to multiply efficiently
7. Explain when it is efficient to use factorising or long multiplication to multiply by 2-digits
8. Dividing numbers with up to 4 digits by multiples of 10
9. Using short and long division to divide by a 2-digit divisor
10. Dividing by a 2-digit divisor including using long division
11. Solve problems with 4-digit dividends using factors and long division
12. Dividing by a 2-digit divisor with a remainder
13. Use long division with fraction remainders
14. Use long division with decimal remainders
15. Solve problems involving remainders in context

Prior knowledge requirements

- Recall multiplication facts to 12×12

- Use partitioning strategies for multiplication
- Understand division as sharing and grouping

11. Area, perimeter, position and direction

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Threads

- Algebra
- Geometry and Measure
- Probability

Unit description

In this unit pupils will explain how to calculate the area of a parallelogram and a triangle. They will describe the relationship between scale factors and side lengths. They will describe positions in all 4 quadrants.

Why this, why now?

This unit builds on previous work on area and perimeter, introducing the formula for the area of a parallelogram and for a triangle. Pupils calculate the areas from given measurements and missing measurements when given the area of a shape. They also construct shapes by plotting positions on a full coordinate grid, with simple translations and reflections. This work will be developed further in a unit focusing on plotting coordinates in different contexts.

Lessons in unit

1. Explain how to calculate the area of a parallelogram
2. Use the area of a parallelogram formula to calculate unknown measurements
3. Explain how to calculate the area of a triangle
4. Use the area of a triangle to calculate unknown measurements
5. Solve problems involving area and perimeter
6. Describe the relationship between scale factors and perimeters of two shapes
7. Draw and complete simple shapes by plotting positions on the full coordinate grid
8. Draw and translate simple shapes on the full coordinate grid
9. Reflect simple shapes in the axes on a full coordinate grid
10. Solve problems involving missing coordinates

Prior knowledge requirements

- Measure length using standard units
- Understand basic properties of 2D shapes
- Use language of direction and identify turns

12. Addition and subtraction of fractions

Year 6

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Threads

- Number
- Number: Addition and Subtraction
- Number: Fractions

Unit description

In this unit pupils will explain how to write a fraction in its simplest form when solving addition and subtraction problems.

Why this, why now?

In this unit, pupils combine their understanding of equivalent fractions and fractions in their simplest form to add fractions with different denominators. To begin with the denominators are within related unit fractions, building to adding and subtracting non-related fractions with different denominators including bridging a whole. This will prepare them for calculating with fractions in the future and for comparing fractions using equivalence.

Lessons in unit

1. Explain how to write a fraction in its simplest form
2. Reason about how to write a fraction in its simplest form
3. Use knowledge of fractions in their simplest form when solving addition and subtraction problems
4. Explain how to add related unit fractions with a representation or image
5. Explain how to add related unit fractions without a representation or image
6. Explain how to subtract related unit fractions
7. Use knowledge of adding and subtracting related unit fractions to solve problems
8. Explain with and without an image how to add and subtract related non-unit fractions
9. Explain with and without images how to add and subtract related non-unit fractions bridging a whole
10. Add and subtract non-related fractions with different denominators

Prior knowledge requirements

- Recognise unit and non-unit fractions
- Add and subtract fractions with the same denominator
- Use visual models like bars and number lines

13. Comparing fractions

Year 6

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Threads

- Number
- Number: Fractions

Unit description

In this unit pupils will use their fraction sense to explain how to compare pairs of non-related fractions either by converting to common denominators or using fraction knowledge and understanding.

Why this, why now?

This unit gives pupils the opportunity to bring together their understanding of fraction and fraction sense to compare and order fractions. They compare and order non-related fractions using strategies including comparing to a half, comparing to a whole as well as finding equivalent fractions with common denominators. They will apply this thinking when working with fractions in the future, including multiplication and division of fractions.

Lessons in unit

1. Explain how to compare non-related fractions finding equivalent fractions with common denominators
2. Explain how to compare pairs of non-related fractions by comparing to a half
3. Explain how to compare pairs of non-related fractions using fraction sense
4. Explain which strategy for comparing non-related fractions is most efficient
5. Order sets of non-related fractions using a range of strategies

Prior knowledge requirements

- Identify equal parts of a whole
- Name common fractions ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$)
- Use visual models for fractions

14. Multiplication and division of fractions

Year 6

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Threads

- Number
- Number: Fractions
- Number: Multiplication and division

Unit description

In this unit pupils will learn how to multiply 2 unit fractions and 2 non-unit fractions. They will learn how to divide a unit fraction and a non-unit fraction by a whole number.

Why this, why now?

This unit introduces pupils to multiplying pairs of unit and then non-unit fractions, using representations to explain the scale of the answer in relation to the fractions being multiplied. They will also use representations and their knowledge of division to divide a fraction by a whole number. They will take this understanding and apply it in the context of percentages, seeing the link between fractions and percentages.

Lessons in unit

1. Explain how to multiply two unit fractions
2. Explain how to multiply two non-unit fractions
3. Explain how to divide a unit fraction by a whole number
4. Explain how to divide a non-unit fraction by a whole number
5. Explain how to divide a fraction by a whole number efficiently

Prior knowledge requirements

- Understand fractions as parts of a whole
- Multiply a fraction by a whole number
- Interpret division of a whole number by a unit fraction

15. Understanding percentages

Year 6

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Threads

- Number
- Number: Fractions
- Number: Multiplication and division
- Ratio and Proportion

Unit description

In this unit pupils will explain what percent means and how to represent a percentage in different ways. They will learn how to convert percentages to decimals and fractions and solve conversion problems.

Why this, why now?

This unit introduces pupils to percentages. They explain what percent means and represent percentages in different ways, linking them to parts of a whole and converting between common fractions and percentages. They also consider equivalence with decimals. They use knowledge of calculating parts of a whole to calculate 50, 10 and 1% of values before combining these to calculate other percentages. Pupils also explain how to calculate the whole when a percentage is known and solve problems in a range of contexts. This prepares pupils for work on statistics.

Lessons in unit

1. Explain what percent means and represent a percentage in different ways
2. Explain how to convert percentages to decimals and fractions with a denominator of 100
3. Explain how to convert a percentage to a fraction without a denominator of 100
4. Use knowledge of fraction-decimal-percentage conversions to solve problems in a range of contexts
5. Use knowledge of calculating 50%, 10% and 1% of a number to solve problems in a range of contexts
6. Use knowledge of calculating common percentages of a number to solve problems in a range of contexts
7. Use knowledge of calculating any percentage of a number to solve problems in a range of contexts
8. Explain how to solve problems where the percentage part and size is known but the whole is unknown
9. Solve problems where the known percentage part and size represents a change to the whole
10. Solve problems involving percentages in a range of contexts

Prior knowledge requirements

- Understand fractions as parts of a whole
- Relate simple fractions to decimals
- Recognise percentages as number of parts per hundred

16. Statistics

Year 6

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Threads

- Geometry and Measure
- Number: Addition and Subtraction
- Number: Multiplication and division
- Statistics

Unit description

In this unit pupils will interpret and construct pie charts and line graphs. They will read scales linked to fractions angles percentages and understanding proportional relationships.

Why this, why now?

This unit develops knowledge of statistics into pie charts and line graphs. Pupils interpret and construct graphs and charts and use fractions and percentages to interpret pie charts. They use a line graph to represent two variables such as distance and time and represent familiar contexts. This will prepare them for future work on statistics and for a unit on mean average.

Lessons in unit

1. Use understanding of angles, fractions and percentages to interpret pie charts
2. Use understanding of angles, fractions and percentages to construct pie charts
3. Interpret line graphs representing two variables in familiar contexts
4. Construct line graphs representing two variables in familiar contexts
5. Interpret the scales used in graphs, including pie charts, to solve problems

Prior knowledge requirements

- Collect and organise simple data using tally charts or tables
- Interpret pictograms and block graphs
- Understand labels, scales and axes in simple charts

17. Ratio and proportion

Year 6

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Threads

- Geometry and Measure
- Number: Multiplication and division
- Probability
- Ratio and Proportion

Unit description

In this unit pupils will describe the relationship between two factors, representing the relationship in different ways. They will build to using a ratio grid to calculate unknown values.

Why this, why now?

This unit builds on pupils' understanding of fractions and multiplication to describe the relationship between two factors in a ratio context. They represent ratio in different ways and use the described relationship to calculate unknown values. They link ratio and proportion to scaling as used in maps and other contexts. Pupils also use scaling and positive scale factors to identify and describe the relationship between polygons. This work will be further developed in Year 7.

Lessons in unit

1. Describe the relationship between two factors in a ratio context
2. Representing ratio in different ways
3. Explain how to represent ratio and to calculate unknown values
4. Use multiplication and division to calculate unknown values in ratio problems
5. Solve problems involving ratio
6. Explain how and why scaling is used to make and interpret maps
7. Use knowledge of multiplication and division to solve scaling problems in a range of contexts
8. Solve problems involving scaling and ratio
9. Identify and describe the relationship between regular polygons using scale factors
10. Identify and describe the relationship between irregular polygons using scale factors

Prior knowledge requirements

- Use multiplication and division facts
- Recognise scaling in simple contexts
- Compare quantities and express multiplicative relationships

18. Calculating using knowledge of equivalence in addition and subtraction

Year 6

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Threads

- Algebra
- Number
- Number: Addition and Subtraction

Unit description

In this unit pupils will explain how to balance equations with addition or subtraction expressions and use their knowledge of balancing equations to solve problems.

Why this, why now?

This unit allows pupils to become more familiar with using equivalence, relating to addition and subtraction, to solve problems in a range of contexts. This will support them as they move on into solving problems with two unknowns and into more formal algebra in Year 7.

Lessons in unit

1. Explain how to balance equations with addition expressions
2. Explain how to balance equations with subtraction expressions
3. Explain how to balance equations with addition or subtraction expressions
4. Explain how to balance equations with addition and subtraction expressions
5. Use knowledge of balancing equations to solve problems

Prior knowledge requirements

- Understand inverse relationship between addition and subtraction
- Rearrange number sentences to find missing values
- Recognise when to apply compensation or balancing strategies

19. Solving problems with two unknowns

Year 6

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Threads

- Algebra
- Number: Addition and Subtraction
- Number: Multiplication and division

Unit description

In this unit pupils will compare and represent the structure of problems with two unknowns using a bar model. They will systematically solve problems with two unknowns using trial and improvement.

Why this, why now?

This unit introduces pupils to situations where a problem has two unknown values. They explore situations where there is one solution, where there are many solutions and where there are infinite solutions. Pupils use bar models to represent problems set in a range of contexts and explain how to balance an equation with two unknowns. This unit prepares them for more formal work in algebra with expressions and equations in Year 7.

Lessons in unit

1. Compare the structure of problems with one or two unknowns
2. Represent the structure of a problem with two unknowns in context
3. Explain why there is sometimes only one solution to a problem
4. Represent and solve problems with two unknowns efficiently
5. Use a bar model to represent spatial problems with two unknowns
6. Explain how to represent an equation with a bar model
7. Solve problems with two unknowns in a range of contexts
8. Explain how you know you have found all the possible solutions to a problem with two unknowns
9. Explain how to balance an equation with two unknowns
10. Solve problems with two unknowns with one, several and infinite solutions

Prior knowledge requirements

- Use symbols or shapes to represent missing numbers
- Understand inverse operations
- Solve one-step equations or balance scales

20. Order of operations

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Threads

- Algebra
- Number
- Number: Addition and Subtraction
- Number: Multiplication and division

Unit description

In this unit pupils will explore what happens when we combine addition and subtraction with multiplication and division, bringing up the need for the order of operations.

Why this, why now?

This unit gives pupils the opportunity to combine multiplication and then division with addition and subtraction. They will explore the different results if operations are done in different orders and realise that, without a context, a set order of operations is needed. They will revisit the distributive law as it applies to multiplications with a common factor and divisions with a common divisor. This will lead on to work on arithmetic procedures with integers and decimals in Year 7.

Lessons in unit

1. Combine multiplication with addition and subtraction
2. Explain how the distributive law applies to multiplication expressions with a common factor
3. Combine division with addition and subtraction
4. Explain how the distributive law applies to division expressions with a common divisor
5. Use knowledge of the order of operations to solve equations

Prior knowledge requirements

- Know order of operations (BIDMAS/BODMAS)
- Use brackets in calculations
- Evaluate multi-step expressions

21. Mean average

Year 6

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Threads

- Number: Addition and Subtraction
- Number: Multiplication and division
- Statistics

Unit description

In this unit pupils will learn how to calculate the mean of a set of data and use the mean to make comparisons between two sets of information where appropriate.

Why this, why now?

This unit develops pupil's range of strategies for examining data by introducing the concept of the mean average. They will learn to calculate the mean average of a set of data and explain how it changes when the total value or number of values changes in the set. Pupils use the mean average to make comparisons and also explain when the mean is not appropriate for comparing data. This will lead on to using other ways of summarising data in the future.

Lessons in unit

1. Explain the relationship between the mean and sharing equally
2. Explain how to calculate the mean of a set of data including a value of zero
3. Explain how the mean changes when the total quantity or number of values changes
4. Explain how to use the mean to make comparisons between two sets of data
5. Explain why the mean is useful and when it is not appropriate

Prior knowledge requirements

- Add and total a data set
- Divide a total equally
- Understand fair share concept