## **Year 3 units**

|  |  |  |
| --- | --- | --- |
| **1**  **Review strategies for adding and subtracting across 10** | **2**  **Securing place value to 100 and applying to addition and subtraction** | **3**  **Bridging 100: counting on and back in 10s, adding/subtracting multiples of 10** |
| **4**  **Measuring length and recording in tables** | **5**  **Representing 3-digit numbers, comparing and positioning on number lines** | **6**  **Measures: mass and capacity** |
| **7**  **Right angles** | **8**  **Informal and mental strategies for adding and subtracting two 3-digit numbers** | **9**  **Understand additive relationships and apply them to rearrange equations** |
| **10**  **Column addition** | **11**  **2, 4 and 8 times tables: using times tables to solve problems** | **12**  **Column subtraction** |
| **13**  **Unit fractions as part of a whole** | **14**  **Identify parts and wholes in different contexts** | **15**  **Compare and order unit fractions** |
| **16**  **Calculate the value of a part (fractions as operators)** | **17**  **Non-unit fractions** | **18**  **Composition of non-unit fractions: addition and subtraction** |
| **19**  **Parallel and perpendicular sides in polygons** | **20**  **Tell the time to the nearest minute and compare units of time** |  |

### **1. Review strategies for adding and subtracting across 10**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/review-strategies-for-adding-and-subtracting-across-10/lessons)



#### **Threads**

* Number
* Number: Addition and Subtraction

#### **Unit description**

In this unit pupils will be reviewing and securing previous knowledge of adding 3 addends, understanding they can be added in any order and combined in different ways to bridge through 10

#### **Why this, why now?**

This first unit in Year 3 revisits and reviews single digit addition and subtraction facts, commutativity and bridging through ten. It gives pupils the opportunity to rehearse key facts that will be needed to work with the larger numbers introduced in the following units.

#### **Lessons in unit**

1. Add 3 numbers together using doubles and near doubles
2. Add 3 numbers together in different contexts
3. Numbers can be added in any order
4. Add three addends by finding pairs that total 10
5. Add three addends efficiently using a range of strategies
6. Addition by bridging through 10
7. Subtracting small numbers
8. Subtracting to and from 10
9. Subtracting numbers that bridge through 10
10. Solving problems involving addition and subtraction

#### **Prior knowledge requirements**

* Recall number bonds to 10 and 20
* Use partitioning and recombining to make 10
* Apply mental strategies for addition and subtraction within 20

### **2. Securing place value to 100 and applying to addition and subtraction**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/securing-place-value-to-100-and-applying-to-addition-and-subtraction/lessons)



#### **Threads**

* Number
* Number: Addition and Subtraction
* Number: Place value
* Ratio and Proportion

#### **Unit description**

In this unit pupils will use known facts to find multiples of ten that compose 100 and use known facts to find complements to 100. They will add and subtract multiples of ten, bridging 100.

#### **Why this, why now?**

This unit applies the single digit calculations crossing the tens boundaries of the last unit to multiples of ten, bridging 100. Pupils explore complements to 100, applying known facts within and to 20 whilst reviewing and securing place value to 100. This unit prepares pupils for working with 3-digit numbers in different contexts.

#### **Lessons in unit**

1. Composition of 100 in 10s and 1s
2. Composition of 100 in 50s, 25s and 20s
3. Multiples of 10 that total 100
4. Use known facts to find pairs of numbers that total 100
5. Use known facts to find complements to 100 efficiently
6. Represent 3-digit multiples of 10 in different ways
7. Use place value knowledge to write addition and subtraction equations
8. Bridge 100 by adding in multiples of 10
9. Bridge 100 by subtracting in multiples of 10
10. Solve problems using knowledge of addition and subtraction of multiples of 10

#### **Prior knowledge requirements**

* Count and read numbers to 100
* Partition numbers into tens and ones
* Add and subtract within 100 using place value

### **3. Bridging 100: counting on and back in 10s, adding/subtracting multiples of 10**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/bridging-100-counting-on-and-back-in-10s-adding-subtracting-multiples-of-10/lessons)



#### **Threads**

* Number
* Number: Addition and Subtraction
* Number: Place value
* Ratio and Proportion

#### **Unit description**

In this unit pupils will find pairs of number that compose 100. They will position 3-digit numbers on a number line and estimate their position on unmarked number lines. They will compare and order 3-digit numbers.

#### **Why this, why now?**

This unit develops the knowledge of multiples of 10 totaling 100 to pairs of numbers that compose 100. Pupils use place value knowledge to represent 3-digit numbers in different ways, including on a number line. They calculate mentally with 3-digit numbers, finding 10 more and less, adding and subtracting 2-digit multiples of ten in preparation for more formal calculations in later units.

#### **Lessons in unit**

1. Count across and on from 100
2. Represent a 3-digit number up to 199 in different ways
3. Bridge 100 by adding or subtracting a single-digit number
4. Find 10 more or 10 less than a given number
5. Cross the hundreds boundary when adding and subtracting any 2-digit multiple of 10

#### **Prior knowledge requirements**

* Recall number facts and sequences
* Use place value understanding
* Apply basic operations in context

### **4. Measuring length and recording in tables**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/measuring-length-and-recording-in-tables/lessons)



#### **Threads**

* Geometry and Measure
* Number
* Number: Place value
* Statistics

#### **Unit description**

In this unit pupils will continue to measure using appropriate tools and units progressing to using a wider range of measures, including comparing and using mixed units.

#### **Why this, why now?**

This unit provides an opportunity for pupils to apply the number work they have done in context and to look at the equivalence between metres and centimetres and cm and mm. Pupils also use tables and graphs to represent and compare data.

#### **Lessons in unit**

1. Estimate in metres and describe a metre in different ways
2. Measure length and height from zero using whole m or cm
3. Converting between metres and centimetres
4. Millimetres as a unit of measure and the relationship between them and cm
5. Measuring length and height using cm and mm
6. Converting between centimetres and millimetres
7. Estimate and measure lengths and heights and record in a table
8. Using graphs to represent lengths and heights
9. Solve problems involving length
10. Solve problems involving length and height

#### **Prior knowledge requirements**

* Measure using rulers or standard units
* Record lengths in cm and m
* Compare and order measurements

### **5. Representing 3-digit numbers, comparing and positioning on number lines**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/representing-3-digit-numbers-comparing-and-positioning-on-number-lines/lessons)



#### **Threads**

* Geometry and Measure
* Number
* Number: Addition and Subtraction
* Number: Place value
* Statistics

#### **Unit description**

In this unit pupils will use knowledge of place value to represent a 3-digit number in different ways. They will compare and order 3-digit numbers and position on number lines and unmarked number lines.

#### **Why this, why now?**

This unit develops understanding of place value by looking at 3-digit numbers. Pupils represent them in different ways and explore how counting patterns and mental calculation strategies familiar to them can be applied to larger numbers. They consider the composition and relative size of numbers, comparing, partitioning and positioning them on number lines. Pupils also develop counting patterns by counting on and back in multiples of 2, 20, 5, 50 and 25.

#### **Lessons in unit**

1. Represent a 3-digit number up to 1,000 in different ways
2. Count forwards and backwards within 3-digits
3. Position 3-digit numbers on number lines
4. Estimate the position of 3-digit numbers on unmarked number lines
5. Comparing and ordering numbers with 1, 2 and 3 digits
6. Ordering sets of 3-digit numbers
7. Use known facts to add and subtract multiples of 100 within 1000
8. Write a 3-digit multiple of 10 as a multiplication equation
9. Partition 3-digit numbers in different ways
10. Use known facts to solve problems involving partitioning numbers
11. Use known facts to add and subtract to and from multiples of 100
12. Add and subtract to and from a 3-digit number bridging 100
13. Solve problems by adding and subtracting to or from 3-digit numbers
14. Count forwards and backwards in multiples of 2, 20, 5, 50 and 25
15. Solve problems by counting forwards and backwards in multiples of 2, 20, 5, 50 and 25

#### **Prior knowledge requirements**

* Recall number facts and sequences
* Use place value understanding
* Apply basic operations in context

### **6. Measures: mass and capacity**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/measures-mass-and-capacity/lessons)



#### **Threads**

* Geometry and Measure
* Number
* Number: Addition and Subtraction
* Number: Place value

#### **Unit description**

In this unit pupils will use weighing scales up to 1kg and measuring tools for volume and capacity up to 1 litre. They will measure mass from 0 to above 1kg using whole kg and grams and measure volume from 0 to above 1 litre using whole litres and ml.

#### **Why this, why now?**

This unit provides opportunities for pupils to apply their developing knowledge of 3-digit numbers in the context of mass and capacity. They will deepen their understanding of the concepts of volume and capacity with practical activities and record results in tables. Reading scales marked in different intervals allows pupils to apply counting in steps of different sizes which will support both measure and statistics work in the future.

#### **Lessons in unit**

1. Become familiar with scales with different intervals when measuring in grams
2. Measure the mass of objects using grams
3. Measure mass in whole kilograms and grams
4. Understanding capacity and volume
5. Measuring the volume of liquids using millilitres.
6. Measure volume in whole litres and millilitres
7. Comparing and estimating mass and volume
8. Estimate then measure mass and volume and record in a table
9. Solve problems involving mass
10. Solve problems involving volume

#### **Prior knowledge requirements**

* Identify and use appropriate units
* Estimate and compare quantities
* Convert between common units

### **7. Right angles**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/right-angles/lessons)



#### **Threads**

* Geometry and Measure

#### **Unit description**

In this unit pupils will rotate 2 lines around a fixed point to make different angles. They identify vertices and describe half, quarter and three-quarter turns in terms of right angles.

#### **Why this, why now?**

This unit provides the opportunity for pupils to develop their understanding of angles by looking at angles relating to dynamic turning and also static angles as properties of 2-D shapes. Pupils identify right angles as properties of shapes and also identify when shapes have angles which are not right angles. This prepares them for work classifying and measuring angles in the future.

#### **Lessons in unit**

1. Make different sized angles by rotating two lines around a fixed point
2. Identify and describe right angles
3. Know that a right angle describes a quarter turn
4. Identify properties of triangles
5. Identify properties of quadrilaterals
6. Know that a rectangle is a four-sided polygon with four right angles
7. Know that a square is a rectangle in which the four sides are of equal length
8. Investigate the shapes made when rectangles are cut on the diagonal
9. Join four right angles at a point using different right-angled polygons
10. Investigate and draw other polygons with right angles

#### **Prior knowledge requirements**

* Identify angles in shapes and turns
* Recognise a quarter turn as a right angle
* Compare angles to a right angle using a right-angle checker

### **8. Informal and mental strategies for adding and subtracting two 3-digit numbers**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/informal-and-mental-strategies-for-adding-and-subtracting-two-3-digit-numbers/lessons)



#### **Threads**

* Number
* Number: Addition and Subtraction
* Ratio and Proportion

#### **Unit description**

In this unit pupils will add and subtract two 3-digit numbers using partitioning, adjusting, redistribution and bridging.

#### **Why this, why now?**

This unit develops mental strategies applied to numbers bridging 100 and applies them to adding and subtracting 3-digit numbers. Pupils consider how to partition numbers to enable them to bridge multiples of 10 and 100. They also use number lines to find the difference and make decisions on which is the most efficient strategy to add or subtracts pairs of 3-digit numbers. This consolidation of mental and informal strategies prepares pupils for the introduction of more formal strategies in later units.

#### **Lessons in unit**

1. Add two 3-digit numbers using partitioning
2. Add two 3-digit numbers using adjusting strategies
3. Add 2 and 3-digit numbers by redistributing
4. Choose the most efficient strategy to add two 3-digit numbers
5. Subtract 2 or 3-digit numbers using partitioning and bridging a multiple of 10
6. Subtract a pair of 2-digit numbers by finding the difference
7. Subtract 3-digit multiples of 10 by finding the difference between them
8. Choose the most efficient strategy to subtract from a 3-digit number
9. Use addition and subtraction to solve problems involving bar charts, pictograms and tables
10. Use addition and subtraction to solve problems in different contexts

#### **Prior knowledge requirements**

* Use number bonds and partitioning to simplify
* Add and subtract multiples of 10 and 100
* Use rounding and adjusting to estimate

### **9. Understand additive relationships and apply them to rearrange equations**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/understand-additive-relationships-and-apply-them-to-rearrange-equations/lessons)



#### **Threads**

* Number
* Number: Addition and Subtraction
* Ratio and Proportion

#### **Unit description**

In this unit pupils will accurately and efficiently solve multi-step addition and subtraction problems. They will understand and explain how both addition and subtraction equations can be used to describe the same additive relationship.

#### **Why this, why now?**

This unit allows pupils to deepen their understanding of the relationship between addition and subtraction. The part-part-whole structure is used to identify what is known and unknown in a given context or problem. Pupils generalize about how to find a missing part or whole using addition and subtraction. They have the opportunity to apply this understanding in different contexts including statistics.

#### **Lessons in unit**

1. Use the additive relationship to rearrange addition equations
2. Use the additive relationship to rearrange subtraction equations
3. Develop understanding of the relationship between addition and subtraction
4. Identify knowns and unknowns in addition equations
5. Identify knowns and unknowns in subtraction equations
6. Use the additive relationship to rearrange and solve equations
7. Solve problems using bar charts, pictograms and tables
8. Understand why the order of addition and subtraction steps can be chosen
9. Solve multi-step addition and subtraction problems efficiently
10. Solve one and two-step problems in different contexts

#### **Prior knowledge requirements**

* Know the inverse relationship between addition and subtraction
* Use number facts to solve missing number problems
* Recognise equivalent expressions in different forms

### **10. Column addition**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/column-addition/lessons)



#### **Threads**

* Number
* Number: Addition and Subtraction
* Ratio and Proportion
* Statistics

#### **Unit description**

In this unit pupils will identify the addends and the sum in column addition. They will use their knowledge of place value to correctly lay out column addition.

#### **Why this, why now?**

Now that pupils have a good understanding of what addition is and of place value, they can apply this to represent addition of larger numbers using column addition. They have the understanding needed to explain how this representation works and have the opportunity to apply this to find missing values, applying their understanding of parts and wholes or addends and sums. Pupils also use other known strategies to estimate and check their calculations.

#### **Lessons in unit**

1. Identify the addends and the sum in column addition
2. Use place value to correctly lay out column addition
3. Add 2-digit numbers using column addition
4. Add 3-digit numbers using column addition
5. Use column addition to solve problems
6. Use column addition to add numbers by regrouping ones
7. Use column addition to add numbers by regrouping tens
8. Use column addition with regrouping in ones and tens
9. Use known facts and strategies to accurately and efficiently calculate and check column addition
10. Use column addition with regrouping to solve problems

#### **Prior knowledge requirements**

* Recall number bonds and addition facts within 20
* Use place value knowledge to add 2- and 3-digit numbers
* Understand and use column layout for addition

### **11. 2, 4 and 8 times tables: using times tables to solve problems**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/2-4-and-8-times-tables-using-times-tables-to-solve-problems/lessons)



#### **Threads**

* Number
* Number: Multiplication and division
* Number: Place value
* Statistics

#### **Unit description**

In this unit pupils will solve multiplication and division problems using knowledge of the scaling relationships between the 2-, 4- and 8-times tables.

#### **Why this, why now?**

This unit provides a break in additive thinking between units on column addition and subtraction. Pupils have the chance to review the facts for the 2-times table and explore the relationship between the 2-, 4- and 8-times tables. This unit develops multiplicative thinking and introduces the concept and language of scaling, including multiples of 10. This builds on previous work on doubling and halving and leads on to exploring links between the 3-, 6- and 9-times tables in the future.

#### **Lessons in unit**

1. Represent counting in fours as the 4 times table
2. Use knowledge of the 4 times table to solve problems
3. Explain the relationship between adjacent multiples of four
4. Explain the relationship between multiples of 2 and multiples of 4
5. Use knowledge of the relationship between the 2 and 4 times tables to solve problems
6. Represent counting in eights as the 8 times table
7. Explain the relationship between adjacent multiples of eight
8. Explain the relationship between multiples of 4 and multiples of 8
9. Use knowledge of the relationship between the 4 and 8 times tables to solve problems
10. Explain the relationship between the multiples of 2, 4 and 8
11. Use knowledge of the relationship between the 2, 4 and 8 times tables to solve problems
12. Use knowledge of the divisibility rules for divisors of 2 and 4 to solve problems
13. Use knowledge of the divisibility rules for divisors 8 to solve problems
14. Scale known multiplication facts by 10
15. Scale divisions derived from multiplication facts by 10

#### **Prior knowledge requirements**

* Recall 2 and 4 times tables
* Use doubling strategies to derive 4 and 8 times tables
* Apply multiplication facts to word problems

### **12. Column subtraction**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/column-subtraction/lessons)



#### **Threads**

* Number
* Number: Addition and Subtraction
* Ratio and Proportion
* Statistics

#### **Unit description**

In this unit pupils will identify the minuend and the subtrahend in column subtraction and explain the column subtraction algorithm. They will subtract from a 2-digit number using column subtraction with exchanging.

#### **Why this, why now?**

This unit returns to additive thinking and introduces pupils to representing subtraction in columns, applying both their understanding of place value and of subtraction. They identify wholes and parts and label them with the language of minuend and subtrahend. Pupils link the notation of regrouping in column subtraction with representations using base ten resources. They also make decisions about which strategy is more efficient: mental method or column subtraction.

#### **Lessons in unit**

1. Identify the minuend and subtrahend in column subtraction
2. Use column subtraction to subtract from a 2- or 3-digit number
3. Subtract from a 2-digit number using column subtraction with regrouping
4. Subtract from a 3-digit number using column subtraction with regrouping
5. Make efficient use of subtraction strategies including column subtraction

#### **Prior knowledge requirements**

* Understand place value and alignment of digits
* Use mental subtraction strategies
* Apply column method to 2- and 3-digit numbers

### **13. Unit fractions as part of a whole**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/unit-fractions-as-part-of-a-whole/lessons)



#### **Threads**

* Number
* Number: Fractions

#### **Unit description**

In this unit pupils will represent unit fractions in different ways, identifying the whole, the number of equal parts and the size of each part as a unit fraction, including tenths.

#### **Why this, why now?**

Pupils will have learned about fractions before and this unit revisits the idea of fractions as part of a whole and the notation of unit fractions. They will identify the whole and consider the number of equal parts, how this gives the name of the fraction and links to the way the fraction is recorded using fraction notation. Pupils also construct a whole once then know a part and the number of parts. This prepares them for identifying and comparing fractions in different contexts.

#### **Lessons in unit**

1. Identify a whole and the parts that make it up
2. Explain why a part can only be defined in relation to a whole
3. Identify the number of equal or unequal parts in a whole
4. Identify equal parts when they do not look the same
5. Explain the size of a part in relation to the whole
6. Construct a whole when given a part and the number of parts
7. Identify how many equal parts a whole has been divided into
8. Use fraction notation to describe an equal part of the whole
9. Represent unit fractions in different ways
10. Solve problems involving identifying equal parts and the whole

#### **Prior knowledge requirements**

* Identify equal parts of a whole
* Name common fractions (1/2, 1/3, 1/4)
* Use visual models for fractions

### **14. Identify parts and wholes in different contexts**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/identify-parts-and-wholes-in-different-contexts/lessons)



#### **Threads**

* Number
* Number: Fractions

#### **Unit description**

In this unit pupils will identify parts and wholes in different contexts including sets of objects, 3-D shapes and linear contexts.

#### **Why this, why now?**

This unit allows pupils to apply their understanding of unit fractions as one part of a number of equal parts in a whole in unfamiliar contexts including when the equal parts do not look the same. They will explore parts of wholes of 3-D shapes and linear contexts. Fractions of a line prepares pupils for the concept of fractions as numbers with a position on a number line rather than just as parts of a whole.

#### **Lessons in unit**

1. Identify parts and wholes in the contexts of lines and 3D objects
2. Identify parts and wholes in different contexts
3. Identify equal parts in a whole when they do not look the same in 2D shapes
4. Identify equal parts in a whole when they do not look the same in 3D contexts
5. Solve problems by identifying parts and wholes in a range of contexts

#### **Prior knowledge requirements**

* Recognise a whole as composed of parts
* Use part-part-whole models
* Apply knowledge of fractions or numbers in context

### **15. Compare and order unit fractions**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/compare-and-order-unit-fractions/lessons)



#### **Threads**

* Number
* Number: Fractions

#### **Unit description**

In this unit pupils will compare and order unit fractions by looking at the denominator and understanding what it represents.

#### **Why this, why now?**

In this unit, pupils begin to generalize about the relative size of unit fractions by comparing the denominators. They also continue to focus on the whole and explain when fractions cannot be compared in this way as the whole is different. This understanding of the relationship between parts and wholes in fractions will prepare them for calculating the value of a part and for comparing non-unit fractions.

#### **Lessons in unit**

1. Compare unit fractions by looking at the denominator
2. Compare and order unit fractions by looking at the denominator
3. Identify when unit fractions cannot be compared
4. Solve problems involving comparing unit fractions
5. Solve problems involving comparing and ordering unit fractions in a range of contexts

#### **Prior knowledge requirements**

* Recognise and name unit fractions
* Understand fractions as parts of a whole
* Use visual models to compare simple fractions

### **16. Calculate the value of a part (fractions as operators)**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/calculate-the-value-of-a-part-fractions-as-operators/lessons)



#### **Threads**

* Number
* Number: Fractions
* Number: Multiplication and division

#### **Unit description**

In this unit pupils will quantify the number of items in each part and connect to the unit fraction operator. They will calculate the value of a part by connecting knowledge of division and division facts with finding a fraction of a quantity.

#### **Why this, why now?**

This unit draws together understanding of unit fractions and division understanding and known facts. Pupils begin to see fractions as operators and link fractions to division to calculate the value of a part of a set that relates to a unit fraction. This draws on understanding division as sharing (partitive division) where the number of parts is known and we calculate the value of each part.

#### **Lessons in unit**

1. Constructing a whole
2. Use knowledge of the relationship between parts and wholes to solve problems
3. Use parts and wholes to find a unit fraction of a set of objects
4. Calculate the value of parts and wholes using understanding of division
5. Connect division with finding a fraction of a quantity to find parts and wholes

#### **Prior knowledge requirements**

* Recognise fractions of shapes and sets
* Understand the numerator and denominator roles
* Link unit fractions to equal sharing and grouping

### **17. Non-unit fractions**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/non-unit-fractions/lessons)



#### **Threads**

* Number
* Number: Fractions

#### **Unit description**

In this unit pupils will explain that non-unit fractions are composed of more than one unit fraction using knowledge of unit fractions to find one whole.

#### **Why this, why now?**

This unit introduces non-unit fractions which are composed of more than one unit fraction. Pupils express non-unit fractions as a number of unit fractions, including one whole. They look at the fractions in different contexts, including placing them on a number line to mark a particular point in the number system. Pupils apply understanding of ordering unit fractions to compare other fractions with the same numerator and also compare non-unit fractions with the same denominator.

#### **Lessons in unit**

1. Explain that non-unit fractions are made of more than one unit fraction
2. Identify non-unit fractions
3. Identifying equal parts in a whole in different contexts
4. Use knowledge of non-unit fractions to solve problems
5. Use knowledge of unit fractions to find one whole
6. Place fractions between 0 and 1 on a number line
7. Compare non-unit fractions with the same denominator
8. Review comparing unit fractions
9. Compare fractions with the same numerator
10. Compare non-unit fractions including those equal to 1

#### **Prior knowledge requirements**

* Understand unit fractions and their representation
* Use visual models (like number lines or shapes) to compare fractions
* Recognise numerator and denominator and their roles

### **18. Composition of non-unit fractions: addition and subtraction**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/composition-of-non-unit-fractions-addition-and-subtraction/lessons)



#### **Threads**

* Number
* Number: Addition and Subtraction
* Number: Fractions

#### **Unit description**

In this unit pupils will use repeated addition of a unit fraction to form a non-unit fraction. They will compare non-unit fractions with the same denominator. They will add and subtract fractions with the same denominator.

#### **Why this, why now?**

This unit continues to look at non-unit fractions and introduces the use of repeated addition to represent the composition of non-unit fractions. Pupils develop their understanding of the role of the numerator and denominator to compare non-unit fractions with the same denominator and to add and subtract fractions with the same denominator. They develop the language of unitizing to build understanding that non-unit fractions are a number of unit fractions. This will prepare pupils for more formal calculation with fractions in the future.

#### **Lessons in unit**

1. Use repeated addition of a unit fraction to form a non-unit fraction
2. Use repeated addition of a unit fraction to form 1
3. Add fractions with the same denominator
4. Add on fractions with the same denominator
5. Add fractions with the same denominator and generalise the rule
6. Subtract fractions with the same denominator
7. Add and subtract fractions with the same denominator in a range of contexts
8. Explain that addition and subtraction of fractions are inverse operations
9. Subtract fractions from a whole by converting the whole to a fraction
10. Substitute a fraction representing a whole to solve subtraction problems

#### **Prior knowledge requirements**

* Recognise and name non-unit fractions
* Understand adding and subtracting like denominators
* Use fraction walls or number lines to model calculations

### **19. Parallel and perpendicular sides in polygons**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/parallel-and-perpendicular-sides-in-polygons-and-perimeter/lessons)



#### **Threads**

* Geometry and Measure
* Number: Addition and Subtraction

#### **Unit description**

In this unit pupils will investigate ways to compose and decompose polygons. They will investigate quadrilaterals with and without parallel and perpendicular sides.

#### **Why this, why now?**

This unit allows pupils to explore 2-D shapes, composing and constructing shapes in different ways. Pupils are introduced to the concept of parallel and perpendicular sides as properties of shapes. Using different grids, including geoboards, draw triangles and quadrilaterals with given properties. In the unit, pupils have opportunities to rehearse and use the language of 2-shapes and their properties. This unit prepares them for work with other polygons and work on perimeter in the future.

#### **Lessons in unit**

1. Make shapes by joining two polygons in different ways
2. Investigate different ways of decomposing a polygon
3. Draw polygons on isometric paper
4. Construct quadrilaterals with and without parallel and perpendicular sides
5. Make and draw shapes with and without parallel and perpendicular sides
6. Identifying parallel lines
7. Make and draw triangles on circular geoboards
8. Make and draw quadrilaterals on circular geoboards
9. Draw shapes with given properties
10. Draw shapes with given properties on a range of geometric grids

#### **Prior knowledge requirements**

* Recall number facts and sequences
* Use place value understanding
* Apply basic operations in context

### **20. Tell the time to the nearest minute and compare units of time**

**Year 3**

[**Go to unit resources**](https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units/tell-the-time-to-the-nearest-minute-and-compare-units-of-time/lessons)



#### **Threads**

* Geometry and Measure
* Number
* Number: Addition and Subtraction
* Number: Multiplication and division

#### **Unit description**

In this unit pupils will tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.

#### **Why this, why now?**

This unit develops understanding of telling the time on an analogue clock to include writing and telling the time to the nearest minute. Pupils also estimate and compare the duration of activities. They are introduced to the concept of am and pm, learn about equivalence between measures of time and are introduced to Roman numerals which are sometimes used to label the hours on an analogue clock.

#### **Lessons in unit**

1. Tell and write the time to the nearest minute past
2. Tell and write the time to the nearest minute past and to
3. Estimate and compare the duration of events and tasks
4. Tell and write the time including using Roman numerals
5. am and pm
6. Know the number of days in each month, year and leap year
7. How many seconds in a minute

#### **Prior knowledge requirements**

* Read time to the hour and half hour
* Count in fives on a clock face
* Understand and compare minutes, hours and durations