Mathletics NCETM Curriculum Prioritisation Alignment

Activities and Skill Quests



Years 3-4



June, 2023

Mathletics

National Centre for Excellence in the Teaching of Mathematics

June 2023

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Year 3

Autumn

Unit 1: Adding and subtracting across 10

1. Pupils add 3 addends	
Course Topic	Activities Title
Add and Subtract (Mental)	Add 3 Numbers: Bonds to Multiples of 10.
	Add 3 Numbers: Bonds to 100
Add and Subtract Written	Columns that Add
(Review)	
Add and Subtract Written	Add three 2-digit numbers: Regroup (UK)

2. Pupils use a 'First Then Now" story to add 3 addends	
Course Topic	Activities Title
Teacher directed	Teacher directed

3. Pupils explain that addends can be added in any order	
Course Topic	Activities Title
Teacher directed	Teacher directed

4. Pupils add 3 addends efficiently	
Course Topic	Activities Title
Add and Subtract (Mental)	Add 3 Numbers: Bonds to Multiples of 10.
	Add 3 Numbers: Bonds to 100
Add and Subtract Written	Columns that Add
(Review)	
Add and Subtract Written	Add three 2-digit numbers: Regroup (UK)

5. Pupils add 3 addends efficiently by finding two addends that total 10		
Course Topic	Activities Title	
Add and Subtract (Mental)	Add 3 Numbers: Bonds to Multiples of 10.	

6. Pupils add two numbers that bridge through 10	
Course Topic	Activities Title
Add and Subtract Written	Add Two 2-Digit Numbers: Regroup
	Add 3-Digit Numbers: Regroup

7. Pupils subtract two numbers that bridge through 10	
Course Topic	Activities Title
Add and Subtract Written	2-Digit Differences: Regroup
	3-Digit Differences: 1 regrouping

3-Digit Differences : 2 regroupings

Unit 2: Numbers to 1,000

1. Pupils explain that 100 is composed of ten tens and one hundred ones		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

2. Pupils explain that 100 is composed of 50s 25s and 20s	
Course Topic	Activities Title
Teacher directed	Teacher directed

3. Pupils use known facts to find multiples of ten that compose 100		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

4. Pupils will use known facts to find a two-digit number and a one- or two-	
digit number that compose 100	
Course Topic	Activities Title
Add and Subtract Mental	Complements to 100

5. Pupils use known facts to find correct complements to 100	
Course Topic	Activities Title
Add and Subtract Mental	Complements to 100

6. Pupils use known facts to find complements to 100 accurately and	
efficiently	
Course Topic	Activities Title
Add and Subtract Mental	Complements to 100

7. Pupils represent a three-digit number which is a multiple of ten using their	
numerals and names	
Course Topic	Activities Title
Teacher directed	Teacher directed

8. Pupils use place value knowledge to write addition and subtraction equations	
Course Topic	Activities Title
Teacher directed	Teacher directed

9. Pupils bridge 100 by adding or subtracting in multiples of ten	
Course Topic	Activities Title
Teacher directed	Teacher directed

10. Pupils use knowledge of addition and subtraction of multiples of ten	
bridging the hundreds boundary to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

11. Pupils count across and on from 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

12. Pupils represent a three-digit number up to 199 in different ways	
Skill Quests	Skills
Add with 3-digit numbers	Adding a 3-digit number and 1s using models
Course Topic	Activities Title
Number and Place Value (2)	Place Value 2
	Model Numbers
	Place Value to Thousands

13. Pupils bridge 100 by adding or subtracting a single-digit number	
Skill Quests	Skills
Add with 3-digit numbers	Adding a 3-digit number and 1s using models

14. Pupils find ten more or ten less than a given number	
Course Topic	Activities Title
Problem Solving	Pick the Next Number

1. Pupils cross the hundreds boundary when adding and subtracting any two-digit multiple of ten	
Course Topic	Activities Title
Teacher directed	Teacher directed

16. Pupils become fami intervals	liar with a metre ruler (marked and unmarked , 1 x 1m, 10 x 10cm, 100 x 1cm)
Skill Quests	Skills
Length: measure, compare, add and subtract	Introducing formal units for millimetres

17. Pupils measure leng	gth and height from zero using whole metres and cm
Skill Quests	Skills
Measure perimeter of 2-D shapes	Measuring perimeter in cm
Course Topic	Activities Title
Length, Mass and Volume	Measuring Length
	How Long is That?

18. Pupils me	asure length and height from zero using cm
Skill Quests	Skills
Measure perimeter of 2-D shapes	Measuring perimeter in cm
Course Topic	Activities Title
Length, Mass and Volume	Measuring Length
	How Long is that?

19. Pupils convert between	m and cm (include whole m to cm, cm to whole m
and cm and vice versa)	
Skill Quests	Skills
Convert units of measure-length	Converting km, m, cm and mm
Course Topic	Activities Title
Length, Mass and Volume	Centimetres and metres

20. Pupils become familiar	with a ruler in relation to cm and mm (marked
and unmarked	intervals, knowing 1cm = 10mm)
Skill Quests	Skills
Measure perimeter of 2-D shapes	Measuring perimeter in cm
Course Topic	Activities Title
Length, Mass and Volume	Measuring Length
	How Long is that?

21. Pupils measure	e length from zero using mm / whole cm and mm
Course Topic	Activities Title
Teacher directed	Teacher directed

22. Pupils convert betwee	en cm and mm (include whole cm to mm, mm to
whole	e cm and mm and vice versa)
Skill Quests	Skills
Convert units of measure-length	Converting km, m, cm and mm
Course Topic	Activities Title
Length, Mass and Volume	Converting cm and mm

23. Pupils estimate a len	gth/height, measure a length/height and record in a table
Course Topic	Activities Title
Length, Mass and Volume	Measuring Length
	How Long is that?

24. Pupils use knowledge	of place value to represent a three-digit number in
different ways	
Skill Ouests	Skills

Skill Quests	Skills
Identify and represent numbers	Identifying 3-digit numbers within 1000
Course Topic	Activities Title
Number and Place Value (2)	Place Value 2
	Model Numbers
	Place Value to Thousands

25. Pupils represent	a three-digit number up to 1000 in different ways
Skill Quests	Skills
Identify and represent	Identifying 3-digit numbers within 1000
numbers	
Course Topic	Activities Title
Number and Place Value (2)	Place Value 2
	Model Numbers
	Place Value to Thousands

26. Pupils use knowl	edge of the additive relationship to solve problems
Skill Quests	Skills
Solve Problems: add and subtract	Problem solving with addition and subtraction
Course Topic	Activities Title
Course Topic Problem Solving	Activities Title Bar Model Problems 1
Course Topic Problem Solving	Activities Title Bar Model Problems 1 Pyramid Puzzles 1

27. Pupils count in hundreds and tens on a number line	
Course Topic	Activities Title
Teacher directed	Teacher directed

28. Pupils identify the previous, next and nearest multiple of 100 on a number line for a three-digit multiples of ten	
Course Topic	Activities Title
Teacher directed	Teacher directed

29. Pupils position three-digit numbers on number lines	
Course Topic	Activities Title
Teacher directed	Teacher directed

30. Pupils estimate the position of three-digit numbers on unmarked number	
lines	
Course Topic	Activities Title
Teacher directed	Teacher directed

31. Pupils compare one-, two- and three-digit numbers	
Skill Quests	Skills
Compare and order numbers up to 1000	Comparing numbers up to 1000
Course Topic	Activities Title
Number and Place Value (1)	Compare Numbers to 100
	Which is Bigger?
	Which is Smaller?

32. Pupils compare two three-digit numbers	
Skill Quests	Skills
Compare and order numbers up to 1000	Comparing numbers up to 1000
Course Topic	Activities Title
Number and Place Value	Which is Greater?
	Which is Less?
	Greater than or Less than?

33. Pupils order sets of three-digit numbers	
Skill Quests	Skills
Compare and order	Comparing numbers up to 1000
numbers up to 1000	

34. Pupils use known facts to add or subtract multiples of 100 within 1000	
Course Topic	Activities Title
Teacher directed	Teacher directed

35. Pupils write a three-digit multiple of 10 as a multiplication equation	
Course Topic	Activities Title
Teacher directed	Teacher directed

36. Pupils partition three-digit numbers in different ways	
Course Topic	Activities Title
Number and Place Value (2)	Partition and Rename 1
	Place Value Partitioning

37. Pupils use known facts to solve problems involving partitioning numbers	
Course Topic	Activities Title
Number and Place Value (1)	Repartition two-digit numbers
Problem Solving	Partition Puzzles

38. Pupils use known facts to add or subtract to/from multiples of 100 in	
tens	
Course Topic	Activities Title
Teacher directed	Teacher directed

39. Pupils use known facts to add or subtract to/from multiples of 100 in	
ones	
Course Topic	Activities Title
Teacher directed	Teacher directed

40. Pupils add/subtract multiples of ten bridging 100		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

41. Pupils add/subtract to/from a three-digit number in ones bridging 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

42. Pupils find 10 more or less across any hundreds boundary	
Course Topic	Activities Title
Teacher directed	Teacher directed

43. Pupils use knowledge of adding or subtracting to/from three-digit numbers to solve problems	
Skill Quests	Skills
Solve problems: add and subtract	Problem solving with addition and subtraction

44. Pupils count forwards and backwards in multiples of 2, 20, 5, 50 and 25	
Skill Quests	Skills
Count in multiples of 4, 8, 50 and 100	Counting in multiples of 4
Course Topic	Activities Title
Number and Place Value (1)	Skip Counting With Coins

45. Pupils use knowledge of counting in multiples of 2, 20, 5, 50 and 25 to solve problems	
Course Topic	Activities Title
Number and Place Value (1)	Skip Counting With Coins

46. Pupils become familiar with different weighing scales up to 1kg	
(intervals of 100g, 200g, 250g and 500g)	
Course Topic	Activities Title
Length, Mass and Volume	How Heavy?
Problem Solving	Which Unit of Measurement?
	Mass Word Problems

47. Pupils become familiar with the tools to measure volume and capacity up to 1 litre (intervals of 100ml, 200ml, 250ml and 500ml)	
Course Topic	Activities Title
Length, Mass and Volume	Which Measuring Tool?

48. Pupils measure mass from zero up to 1kg using grams		
Course Topic	Activities Title	
Length, Mass and Volume	How Heavy?	
Problem Solving	Mass Word Problems	

49. Pupils measure mass from zero above 1kg using whole kg and grams		
Course Topic	Activities Title	
Length, Mass and Volume	How Heavy?	
Problem Solving	Mass Word Problems	

50. Pupils measure volume from zero up to 1 litre using ml	
Course Topic	Activities Title
Length, Mass and Volume	Using a Litre

51. Pupils measure volume from zero above 1 litre using whole litres and ml	
Course Topic	Activities Title
Teacher directed	Teacher directed

52. Pupils estimate mass in grams and volume in ml	
Course Topic	Activities Title
Teacher directed	Teacher directed

53. Pupils estimate a mass/volume, measure a mass/volume and record in a	
table	
Course Topic	Activities Title

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Spring

Unit 3: Right angles

1. Pupils rotate two lines around a fixed point to make different sized angles	
Skill Quests	Skills
Recognise turns and angles	Recognising turns and angles

2. Pupils draw triangles and quadrilaterals and identify vertices	
Skill Quests	Skills
Compare and describe 2-D shapes	Comparing and describing 2-D shapes
Course Topic	Activities Title
Properties of Shape	Sides, Angles and Diagonals

3. Pupils learn that a right angle is a 'square corner' and identify them in the environment	
Course Topic	Activities Title
Identify right angles	Identifying right angles in shapes

4. Pupils learn that a rectangle is a 4-sided polygon with four right angles	
Skill Quests	Skills
Compare and describe 2-D shapes	Comparing and describing 2-D shapes
Course Topic	Activities Title
Properties of Shape	Collect the Polygons

5. Pupils learn that a square is a rectangle in which the four sides are equal length	
Skill Quests	Skills
Compare and describe 2-D shapes	Comparing and describing 2-D shapes
Course Topic	Activities Title
Properties of Shape	Collect the Polygons

6. Pupils cut rectangles and squares on the diagonal and investigate the shapes they make	
Course Topic	Activities Title
Teacher directed	Teacher directed

7. Pupils join four right angles at a point using different right-angled polygons	
Course Topic	Activities Title
Teacher directed	Teacher directed

8. Pupils investigate and draw other polygons with right angles	
Skill Quests	Skills
Identify right angles	Identifying right angles in shapes

Unit 4: Manipulating the additive relationship and securing mental calculation

1. Pupils add two 3-digit numbers using partitioning	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils add two 3-digit numbers using adjusting		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

3. Pupils add a pair of 2- or 3-digit numbers using redistribution	
Course Topic	Activities Title
Teacher directed	Teacher directed

4. Pupils subtract a pair of 2- or 3-digit numbers, bridging a multiple of 10,		
using partitioning		
Course Topic	Activities Title	
Problem Solving	Partition Puzzles	

5. Pupils subtract a pair of 2-digit numbers, crossing a ten or hundreds boundary, by finding the difference between them	
Course Topic	Activities Title
Add and Subtract Written	2-Digit Differences: Regroup

6. Pupils subtract a pair of three-digit multiples of 10 within 1000 by finding the difference between them	
Course Topic Activities Title	
Teacher directed	Teacher directed

7. Pupils evaluate the efficiency of strategies for subtracting from a 3-digit number	
Skill Quests Skills	
Estimate Calculations	Recognising and using inverse relationship

Course Topic	Activities Title
Add and Subtract Written	Column Subtraction
(Review)	
Add and Subtract	3-Digit Differences
	3-Digit Differences: 1 Regrouping
	3-Digit Differences: 2 Regroupings

8. Pupils explain why the order of addition and subtraction steps in a multi-		
step problem can be chosen		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

9. Pupils accurately and efficiently solve multi-step addition and subtraction problems	
Skill Quests	Skills
Solve problems: add and subtract	Problem solving with addition and subtraction

10. Pupils understand and can explain that both addition and subtraction equations can be used to describe the same additive relationship (2-digit numbers)	
Skill Quests	Skills
Estimate Calculations	Recognising and using inverse relationship

11. Pupils understand and can explain that both addition and subtraction equations can be used to describe the same additive relationship (3-digit numbers)

numbersj	
Skill Quests	Skills
Estimate Calculations	Recognising and using inverse relationship

12. Pupils use knowledge of the additive relationship to rearrange equations	
Skill Quests	Skills
Commutativity in addition	Commutativity in addition

13. Pupils use knowledge of the additive relationship to identify what is		
known and what is unknown in an equation		
Skill Quests	Skills	
Solve problems: add and subtract	Problem solving with addition and subtraction	
Course Topic	Activities Title	
Add and Subtract Mental	Missing Numbers	
Problem Solving	Bar Model Problems 1	
	Pyramid Puzzles 1	
	Bar Model Problems 2	

14. Pupils use knowledge of the additive relationship to rearrange equations before solving	
Skill Quests	Skills
Solve problems: add and subtract	Problem solving with addition and subtraction
Course Topic	Activities Title
Add and Subtract Mental	Missing Numbers
Problem Solving	Bar Model Problems 1
	Pyramid Puzzles 1
	Bar Model Problems 2

Unit 5: Column addition

1. Pupils identify the addends and the sum in column addition	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils use their knowledge of place value to correctly lay out column	
addition	
Course Topic	Activities Title
Add and Subtract (Written)	Add two 2-digit numbers: regroup
	Add three 2-digit numbers: regroup (UK)
	Add 3-digit numbers
	Add multi-digit numbers 1
	Add 3-digit numbers: regroup
	Strategies for column addition

3. Pupils add a pair of 2-digit numbers using column addition	
Skill Quests	Skills
Formal addition up to 3 digits	Adding numbers up to 3 digits (no exchanging)
Course Topic	Activities Title
Add and Subtract Written (Review)	Add Two 2-Digit Numbers
Add and Subtract Written	Add Two 2-Digit Numbers: Regroup

4. Pupils add using column addition	
Skill Quests	Skills
Formal addition up to 3 digits	Adding numbers up to 3 digits (no exchanging)
Course Topic	Activities Title
Add and Subtract Written	Columns that Add
(Review)	Column Addition
	Add Two 2-Digit Numbers
Add and Subtract Written	Add Two 2-Digit Numbers: Regroup
	Add Three 2-Digit Numbers: Regroup (UK)
	Add 3-Digit Numbers

	Add Multi-Digit Numbers
	Add 3-Digit Numbers: Regroup
	Strategies for Column Addition

5. Pupils use their knowledge of column addition to solve problems	
Skill Quests	Skills
Solve problems: add and subtract	Problem solving with addition and subtraction

6. Pupils add a pair of 2-digit numbers using column addition with regrouping in the ones column	
Course Topic	Activities Title
Add and Subtract Written	Add Two 2-Digit Numbers: Regroup (UK)

7. Pupils add a pair of 2-digit numbers using column addition with	
regrouping in the tens column	
Course Topic	Activities Title
Teacher directed	Teacher directed

8. Pupils add using column addition with regrouping	
Course Topic	Activities Title
Add and Subtract Written	Add Two 2-Digit Numbers: Regroup
	Add Three 2-Digit Numbers: Regroup (UK)
	Add Multi-Digit Numbers
	Add 3-Digit Numbers: Regroup
	Strategies for Column Addition

9. Pupils use known facts and strategies to accurately and efficiently calculate and check column addition	
Skill Quests	Skills
Estimate Calculations	Recognising and using inverse relationship
Course Topic	Activities Title
Add and Subtract Written	Strategies for column addition

10. Pupils use their knowledge of column addition to solve problems	
Skill Quests	Skills
Solve problems: add and	Problem solving with addition and subtraction
subtract	

Unit 6: 2,4,8 times tables

1. Pupils represent counting in fours as the 4 times table	
Course Topic	Activities Title
Number and Place Value (1)	Counting up in 4s

2. Pupils use knowledge of the 4 times table to solve problems	
Course Topic	Activities Title
Multiply and Divide	Groups of 4

3. Pupils explain the relationship between adjacent multiples of four	
Course Topic	Activities Title
Teacher directed	Teacher directed

4. Pupils explain the relationship between multiples of 2 and multiples of 4	
Course Topic	Activities Title
Teacher directed	Teacher directed

5. Pupils use knowledge of the relationships between the 2 and 4 times	
tables to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

6. Pupils represent counting in eights as the 8 times table	
Course Topic	Activities Title
Number and Place Value (1)	Counting up in 8s
Multiply and Divide	Groups of 8

7. Pupils explain the relationship between adjacent multiples of eight	
Course Topic	Activities Title
Teacher directed	Teacher directed

8. Pupils explain the relationship between multiples of 4 and multiples of 8	
Course Topic	Activities Title
Teacher directed	Teacher directed

9. Pupils use knowledge of the relationships between the 4 and 8 times	
tables to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

10. Pupils explain the relationship between multiples of 2, 4 and multiples of	
8	
Course Topic	Activities Title
Teacher directed	Teacher directed

11. Pupils use knowledge of the relationships between the 2, 4 and 8 times	
tables to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

12. Pupils use knowledge of the divisibility rules for divisors of 2 and 4 to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

13. Pupils use knowledge of the divisibility rules for divisors of 8 to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

14. Pupils scale known multiplication facts by 10	
Course Topic	Activities Title
Multiply and Divide	Multiply multiples of 10

15. Pupils scale division derived from multiplication facts by 10	
Course Topic	Activities Title
Teacher directed	Teacher directed

Unit 7: Column subtraction

1. Pupils identify the minuend and the subtrahend in column subtraction	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils explain the column subtraction algorithm	
Course Topic	Activities Title
Teacher directed	Teacher directed

3. Pupils subtract from a 2-digit number using column subtraction with	
exchanging from tens to ones	
Course Topic	Activities Title
Add and Subtract Written	2-Digit Differences: Regroup

4. Pupils subtract from a 3-digit number using column subtraction with	
exchanging from hundreds to tens (1)	
Course Topic	Activities Title
Add and Subtract Written	3-digit differences: Regrouping 2 (T to O and H to T)

5. Pupils subtract from a 3-digit number using column subtraction with	
exchanging from hundreds to tens (2)	
Course Topic	Activities Title
Add and Subtract Written	3-digit differences: Regrouping 2 (T to O and H to T)

6. Pupils evaluate the efficiency of strategies for subtraction	
Skill Quests	Skills
Estimate calculations	Recognising and using inverse relationship

Summer

Unit 8 Unit fractions

1. Pupils identify a whole and the parts that make it up	
Skill Quests	Skills
Recognise, find and write fractions	Recognising, finding and writing fractions
Course Topic	Activities Title
Fractions (1)	Fractions of a Collection
	Model Fractions
	Part Whole Rods 2
	Fraction Fruit Sets 1
	Unit Fractions
	What Fraction is Shaded?

2. Pupils explain why a part can only be defined when in relation to a whole	
Skill Quests	Skills
Recognise, find and write	Recognising, finding and writing fractions
fractions	

3. Pupils identify the number of equal or unequal parts in a whole	
Skill Quests	Skills
Recognise, find and write fractions	Recognising, finding and writing fractions
Course Topic	Activities Title
Fractions (1)	Model Fractions
	Part Whole Rods 2
	Fraction Fruit Sets 1
	Unit Fractions
	What Fraction is Shaded?
	Thirds and Sixths
Fractions (2)	Uneven Partitioned Shapes 2
	Equivalent Fraction Wall 1

4. Pupils identify equal parts when they do not look the same (i)	
Skill Quests	Skills
Recognise and show equivalent fractions	Recognise fractions equivalent to 1
Course Topic	Activities Title
Fractions (2)	Uneven Partitioned Shapes 2
	Equivalent Fraction Wall 1

5. Pupils explain the size of the part in relation to the whole	
Skill Quests	Skills
Recognise, find and write fractions	Recognising, finding and writing fractions
Recognise and show equivalent fractions	Recognise fractions equivalent to 1
Course Topic	Activities Title
Fractions (1)	Part Whole Rods 2

6. Pupils construct a whole when given a part and the number of parts		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

7. Pupils identify how many equal parts a whole has been divided into	
Skill Quests	Skills
Recognise, find and write fractions	Recognising, finding and writing fractions
Course Topic	Activities Title
Fractions (1)	Thirds and Sixths

8. Pupils use fraction notation to describe an equal part of the whole	
Skill Quests	Skills
Recognise, find and write fractions	Recognising, finding and writing fractions
Course Topic	Activities Title
Fractions (1)	Unit Fractions
	What Fraction is Shaded?

9. Pupils represent a unit fractions in different ways	
Course Topic	Activities Title
Fractions (2)	Uneven Partitioned Shapes 2

10. Pupils identify parts and wholes in different contexts (i)	
Skill Quests	Skills
Recognise and use fractions as numbers	Recognising and using fractions as numbers
Course Topic	Activities Title
Fractions (1)	Fraction Fruit Sets 1

11. Pupils identify parts and wholes in different contexts (ii)	
Course Topic	Activities Title
Fractions (2)	Identifying Fractions on a Number Line

12. Pupils identify equal parts when they do not look the same (ii)	
Skill Quests	Skills
Recognise and show equivalent fractions	Recognise fractions equivalent to 1
Course Topic	Activities Title
Fractions (2)	Uneven Partitioned Shapes 2
	Equivalent Fraction Wall 1

13. Pupils compare and order unit fractions by looking at the denominator	
Skill Quests	Skills
Compare and order simple fractions	Comparing and ordering fractions
Course Topic	Activities Title
Fractions (2)	Compare Fractions 1a
	Comparing Fractions 1

14. Pupils identify when unit fractions cannot be compared	
Course Topic	Activities Title
Teacher directed	Teacher directed

15. Pupils construct a whole when given one part and the fraction that it	
represents	
Course Topic	Activities Title
Teacher directed	Teacher directed

16. Pupils use knowledge of the relationship between parts and wholes in	
unit fractions to solve problems	
Skill Quests	Skills
Solve problems: fractions	Estimating/adding to find fractions of sets
Course Topic	Activities Title
Fractions (2)	Uneven Partitioned Shapes 2

17. Pupils identify the whole, the number of equal parts and the size of each	
part as a unit fraction	
Skill Quests	Skills
Recognise, find and write	Recognising, finding and writing fractions
fractions	
Recognise and use fractions as	Recognising and using fractions as numbers
numbers	
Course Topic	Activities Title
Fractions (1)	Partition into equal parts
	Unit Fractions
	What Fraction is shaded?

18. Pupils quantify the number of items in each part and connect to the unit fraction operator	
Skill Quests	Skills
Recognise and use fractions as numbers	Recognising and using fractions as numbers

19. Pupils calculate the value of a part by using knowledge of division and division facts	
Skill Quests	Skills
Recognise and use fractions	Recognising and using fractions as numbers
as numbers	

20. Pupils calculate the value of a part by connecting knowledge of division and division facts with finding a fraction of a quantity		
Skill Quests	Skills	
Recognise and use fractions as numbers	Recognising and using fractions as numbers	

21. Pupils find fractions of quantities using knowledge of division facts with increasing fluency	
Skill Quests	Skills
Solve problems: fractions	Estimating/adding to find fractions of sets
Course Topic	Activities Title
Fractions (1)	Fraction Fruit Sets 1

Unit 9: Non-unit fractions

1. Pupils explain that non-unit fractions are composed of more than one unit	
fraction	
Skill Quests	Skills
Count up and down in tenths	Introducing tenths

2. Pupils identify non-unit fractions	
Skill Quests	Skills
Count up and down in tenths	Introducing tenths

3. Pupils identify the number of equal or unequal parts in a whole	
Skill Quests	Skills
Recognise, find and write fractions	Recognising, finding and writing fractions
Course Topic	Activities Title
Fractions (1)	Partition into equal parts
	What fraction is shaded?

4. Pupils use knowledge of non-unit fractions to solve problems	
Skill Quests	Skills
Compare and order simple fractions	Comparing and ordering fractions
Course Topic	Activities Title
Fractions (1)	Part Whole Rods 2
	Fraction Fruit sets 1
	What Fraction is Shaded?

5. Pupils use knowledge of unit fractions to find one whole	
Course Topic	Activities Title
Teacher directed	Teacher directed

6. Pupils place fractions between 0 and 1 on a numberline	
Course Topic	Activities Title
Fractions (2)	Identifying Fractions on a numberline

7. Pupils use repeated addition of a unit fraction to form a non-unit fraction		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

8. Pupils use repeated addition of a unit fraction to form 1	
Course Topic	Activities Title
Teacher directed	Teacher directed

9. Pupils compare using knowledge of non-unit fractions equivalent to one	
Skill Quests	Skills
Compare and order simple fractions	Comparing and ordering fractions
Course Topic	Activities Title
Fractions (2)	Equivalent Fractions Wall 1

10. Pupils compare non-unit fractions with the same denominator	
Skill Quests	Skills
Compare and order simple fractions	Comparing and ordering fractions
Course Topic	Activities Title
Fractions (2)	Add: Common Denominator
	Subtract: Common Denominator
	Compare Fractions 1a
	Compare Fractions 1

11. Pupils compare unit fractions	
Skill Quests	Skills
Compare and order simple fractions	Comparing and ordering fractions
Course Topic	Activities Title
Fractions (2)	Compare Fractions 1a

12. Pupils compare fractions with the same numerator	
Skill Quests	Skills
Compare and order simple fractions	Comparing and ordering fractions
Course Topic	Activities Title
Fractions (2)	Compare Fractions 1a
	Compare Fractions 1

13. Pupils add up fractions with the same denominator	
Skill Quests	Skills
Add fractions up to 1 whole	Adding unit fractions with the same denominator
Course Topic	Activities Title
Fractions (2)	Add: Common Denominator

14. Pupils add on fractions with the same denominator	
Skill Quests	Skills
Add fractions up to 1 whole	Adding unit fractions with the same denominator
Course Topic	Activities Title
Fractions (2)	Add: Common Denominator

15. Pupils add fractions with the same denominator using a generalised rule	
Skill Quests	Skills
Add fractions up to 1 whole	Adding unit fractions with the same denominator
Course Topic	Activities Title
Fractions (2)	Add: Common Denominator

16. Pupils subtract fractions with the same denominator	
Course Topic	Activities Title
Fractions (2)	Subtract: Common Denominator

17. Pupils identify the whole, the number of equal parts and the size of each	
part as a unit fraction	
Skill Quests	Skills
Recognise, find and write	Recognising, finding and writing fractions
fractions	

Course Topic	Activities Title
Fractions (1)	Unit Fractions

18. Pupils explain that addition and subtraction of fractions are inverse operations	
Course Topic	Activities Title
Teacher directed	Teacher directed

19. Pupils subtract fractions from a whole by converting the whole to a	
fraction	
Course Topic	Activities Title
Teacher directed	Teacher directed

20. Pupils represent a whole as a fraction in different ways and use this to	
solve problems involving subtraction	
Course Topic	Activities Title
Problem Solving	Fraction Length Models 1
	Fraction Word Problems

Unit 10: Parallel and perpendicular sides in polygons

1. Pupils make compound shapes by joining two polygons in different ways	
(same parts, different whole)	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils investigate different ways of composing and decomposing a	
polygon (same whole, different parts)	
Course Topic	Activities Title
Teacher directed	Teacher directed

3. Pupils draw polygons on isometric paper	
Course Topic	Activities Title
Teacher directed	Teacher directed

4. Pupils use geostrips to investigate quadrilaterals with and without	
parallel and perpendicular sides	
Course Topic	Activities Title
Properties of Shape	What Line am I?

5. Pupils make and draw compound shapes with and without parallel and		
perpendicular sides		
Course Topic	Activities Title	
Properties of Shape	What line am I?	

6. Pupils learn to extend lines and sides to identify parallel and perpendicular		
lines		
Course Topic	Activities Title	
Properties of Shape	Collect the Polygons	

7. Pupils make and draw triangles on circular geoboards	
Skill Quests	Skills
Compare and describe 2-D	Comparing and describing 2-D shapes
shapes	

8. Pupils make and draw quadrilaterals on circular geoboards	
Skill Quests	Skills
Compare and describe 2-D	Comparing and describing 2-D shapes
shapes	

9. Pupils draw shapes with given properties on a range of geometric grids	
Skill Quests	Skills
Compare and describe 2-D shapes	Comparing and describing 2-D shapes

Unit 11: Time

1. Tell and write the time from an analogue clock, including using Roman	
numerals from I to XII, and 12-hour and 24-hour clocks	
Skill Quests	Skills
Tell the time: analogue clock	Telling the time to 5 minutes on analogue clocks
Course Topic	Activities Title
Time and Money	Five minute times
Time	Tell Time to the Half Hour

2. Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and

midnight

Skill Quests	Skills
Tell the time: analogue clock	Telling the time to 5 minutes on analogue clocks
Estimate and read time	Comparing and ordering time in seconds and minutes
Course Topic	Activities Title
Time	What is the Time?

24 hour time

3. Know the number of seconds in a minute and the number of days in each month, year and leap year		
Skill Quests	Skills	
Relationships between units of	Recalling relationships between units of time	
time		

4. Compare durations of events [for example to calculate the time taken by	
particular events or tasks]	
Skill Quests	Skills
Compare durations of events	Comparing durations in hours, minutes and seconds

Year 4

Autumn

Unit 1: Review of column addition and subtraction

1. Pupils identify the addends and the sum in column addition	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils use their knowledge of place value to correctly lay out column addition	
Course Topic	Activities Title
Add and Subtract Written	Strategies for Column Addition
	Add 3-digit Numbers
	Add 3-digit Numbers: Regroup (UK)
	Add Three 3-digit Numbers: Regroup
	Adding Colossal Columns (UK)

3. Pupils add a pair of 2-digit numbers using column addition	
Course Topic	Activities Title
Add and Subtract Written	Strategies for Column Addition

4. Pupils add using column addition	
Course Topic	Activities Title
Add and Subtract Written	Strategies for Column Addition
	Add 3-digit Numbers
	Add 3-digit Numbers: Regroup (UK)
	Add Three 3-digit Numbers: Regroup
	Adding Colossal Columns (UK)

5. Pupils use their knowledge of column addition to solve problems	
Skill Quests	Skills
Solve 2-step problems in context	Solving addition and subtraction two-step problems
Course Topic	Activities Title
Problem Solving	Magic Symbols 1
	Magic Symbols 2
	Bar Model Problems 2
	Find the Missing Number 1
	Pyramid Puzzles 2
	I am Thinking of a Number!

6. Pupils add a pair of 2-digit numbers using column addition with regrouping in the ones column	
Course Topic	Activities Title
Add and Subtract Written	Strategies for Column Addition

7. Pupils add a pair of 2-digit numbers using column addition with	
regrouping in the tens column	
Course Topic	Activities Title
Teacher directed	Teacher directed

8. Pupils add using column addition with regrouping	
Course Topic Activities Title	
Add and Subtract Written	Strategies for Column Addition
	Add 3-digit Numbers: Regroup (UK)
	Add Three 3-digit Numbers: Regroup
	Adding Colossal Columns (UK)

9. Pupils use known facts and strategies to accurately and efficiently calculate and check column addition	
Skill Quests	Skills
Add and Subtract multiples of 100	Adding and subtracting multiples of 100
Estimate and use inverse operations	Estimating and using inverse operations

10. Pupils identify the minuend and the subtrahend in column subtraction	
Course Topic	Activities Title
Teacher directed	Teacher directed

11. Pupils subtract using column subtraction	
Course Topic	Activities Title
Add and Subtract Written	3-digit Differences With Zeros
	Subtracting Colossal Columns

12. Pupils subtract from a 2-digit number using column subtraction with	
exchanging from tens to ones	
Course Topic	Activities Title
Teacher directed	Teacher directed

13. Pupils subtract from a 3-digit number using column subtraction with	
exchanging from hundreds to tens (1)	
Course Topic	Activities Title
Add and Subtract Written	3-digit Differences With Zeros

Subtracting Colossal Columns

14. Pupils subtract from a 3-digit number using a column subtraction with	
exchanging from hundreds to tens (2)	
Course Topic	Activities Title
Add and Subtract Written	3-digit Differences With Zeros
	Subtracting Colossal Columns

15. Pupils evaluate the efficiency of strategies for subtraction	
Course Topic	Activities Title
Teacher directed	Teacher directed

Unit 2: Numbers to 10,000

1. Pupils explain how many tens, hundreds and ones 1,000 is composed of	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils use knowledge of 1,000 to explain common measure conversions	
Skill Quests	Skills
Convert units of measure – length	Converting – km, m, cm and mm
Course Topic	Activities Title
Units of Measurement	Kilometre Conversions
	Metres and Kilometres
	Grams and Milligrams
	Grams and Kilograms
	Kilogram Conversions
	Litre Conversions
	Millilitres and Litres

3. Pupils use knowledge of 1,000 to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

4. Pupils use different strategies to add multiples of 100	
Skill Quests	Skills
Add and Subtract multiples	Adding and Subtracting multiples of 100
of 100	

5. Pupils use different strategies to subtract multiples of 100	
Skill Quests	Skills
Add and Subtract multiples	Adding and Subtracting multiples of 100
of 100	

6. Pupils use knowledge of calculation and common measure conversions to solve problems	
Skill Quests	Skills
Measure and calculate	Measuring and calculating perimeters
perimeter	

7. Pupils compose and decompose four-digit numbers in different ways	
Skill Quests	Skills
Recognise place value in 4- digit numbers	Recognising the place value of 4-digit numbers
Course Topic	Activities Title
Number and Place Value	Place Value to Thousands
	Place Value 3
	Partition and Rename 3
	Expanding Numbers

8. Pupils use strategies to make solving calculations more efficient	
Skill Quests	Skills
Round numbers	Rounding numbers to the nearest 10, 100 or 1000
Course Topic	Activities Title
Number and Place Value	Missing Numbers 1
Add and Subtract Mental	Estimate Sums
	Estimate Differences

9. Pupils compare and order four-digit numbers	
Skill Quests	Skills
Order and compare numbers beyond 1000	Ordering numbers beyond 1000
Course Topic	Activities Title
umber and Place Value	Put in Order 1

10. Pupils calculate efficiently by using knowledge of place value, addition		
and subtraction		
Skill Quests	Skills	
Recognise place value in 4-digit numbers	Recognising the place value of 4-digit numbers	
Estimate and use inverse	Estimating and using inverse operations	
operations		
Course Topic	Activities Title	
Course Topic Number and Place Value	Activities Title Place Value to Thousands	
Course Topic Number and Place Value	Activities Title Place Value to Thousands Partition and Rename 3	
Course Topic Number and Place Value	Activities Title Place Value to Thousands Partition and Rename 3 Expanding Numbers	
Course Topic Number and Place Value Add and Subtract Mental	Activities Title Place Value to Thousands Partition and Rename 3 Expanding Numbers Split add and Subtract	
Course Topic Number and Place Value Add and Subtract Mental	Activities Title Place Value to Thousands Partition and Rename 3 Expanding Numbers Split add and Subtract Bump add and Subtract	

Estimate Differences

11. Pupils explain what rounding is	
Skill Quests	Skills
Round Numbers	Rounding numbers to the nearest 10, 100 or 1000
Course Topic	Activities Title
Number and Place Value	Nearest 10?
Rounding	Nearest 100?
	Nearest 1000?
	Rounding Numbers

12. Pupils round a four-digit number to the nearest thousand	
Skill Quests	Skills
Round Numbers	Rounding numbers to the nearest 10, 100 or 1000
Course Topic	Activities Title
Number and Place Value	Nearest 1000?
Rounding	

13. Pupils round a four-digit number to the nearest hundred and ten	
Skill Quests	Skills
Round Numbers	Rounding numbers to the nearest 10, 100 or 1000
Course Topic	Activities Title
Number and Place Vale	Rounding Numbers
Rounding	

14. Pupils round a four-digit number to the nearest thousand, hundred and	
ten	
Skill Quests	Skills
Round Numbers	Rounding numbers to the nearest 10, 100 or 1000
Course Topic	Activities Title
Number and Place Vale	Rounding Numbers
Rounding	

15. Pupils add up to 3 four-digit numbers using a column addition	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils subtract four-digit numbers using a column subtraction	
Course Topic	Activities Title
Teacher directed	Teacher directed

17. Pupils use strategies to make solving calculations more efficient	
Skill Quests	Skills
Recognise place value in 4- digit numbers	Recognising the place value of 4-digit numbers
Estimate and use inverse	Estimating and using inverse operations
operations	
Course Topic	Activities Title
Add and Subtract Mental	Split add and Subtract
	Bump add and Subtract
	Estimate Sums
	Estimate Differences

18. Pupils explain how many '100s' and '200s', 1,000 is composed of	
Course Topic	Activities Title
Teacher directed	Teacher directed

19. Pupils explain how many '500s' and '250s', 1,000 is composed of	
Course Topic	Activities Title
Teacher directed	Teacher directed

Unit 3: Perimeter

1. A regular polygon has sides that are all the same length and interior angles that are all equal in size	
Skill Quests	Skills
Compare and classify	Comparing and classifying quadrilaterals
geometric shapes	

2. Perimeter is the distance around the edge of a two-dimensional shape	
Skill Quests	Skills
Measure and calculate	Measuring and calculating perimeters
perimeter	
Course Topic	Activities Title
Length, Perimeter and Area	Perimeter of Shapes
	Perimeter: Squares and Rectangles

3. Different shapes can have the same perimeter	
Skill Quests	Skills
Measure and calculate perimeter	Measuring and calculating perimeters
Course Topic	Activities Title
Length, Perimeter and Area	Perimeter of Shapes
	Perimeter: Squares and Rectangles

4. Perimeter is measured in units of length and can be found by counting units	
Skill Quests	Skills
Measure and calculate perimeter	Measuring and calculating perimeters
Course Topic	Activities Title
Length, Perimeter and Area	Perimeter of Shapes
	Perimeter: Squares and Rectangles

5. Perimeter can be calculated by adding together the side lengths of a 2D shape	
Skill Quests	Skills
Measure and calculate perimeter	Measuring and calculating perimeters
Course Topic	Activities Title
Length, Perimeter and Area	Perimeter of Shapes
	Perimeter: Squares and Rectangles

6. The perimeter of a rectangle can be calculated by addition and multiplication	
Skill Quests	Skills
Measure and calculate perimeter	Measuring and calculating perimeters

7. Unknown side lengths can be calculated from perimeter and known side	
lengths	
Skill Quests	Skills
Measure and calculate	Measuring and calculating perimeters
perimeter	
Course Topic	Activities Title
Length, Perimeter and Area	Perimeter of Shapes
	Perimeter: Squares and Rectangles

8. The perimeter of a regular polygon can be calculated by multiplication	
Course Topic	Activities Title
Length, Perimeter and Area	Perimeter of Shapes
	Perimeter: Squares and Rectangles

9. The side length of a regular polygon can be calculated by division where	
the perimeter is known	
Course Topic	Activities Title
Teacher directed	Teacher directed

Unit 4: 3,6,9 times tables

1. Pupils represent counting in threes as the three times table	
Skill Quests	Skills
Multiply by 3	Exploring multiplication by 3
Course Topic	Activities Title
Multiply and Divide	Groups of 3

2. Pupils explain the relationship between adjacent multiples of three	
Skill Quests	Skills
Multiply by 3	Exploring multiplication by 3

3. Pupils use knowledge of the three times table to solve problems	
Skill Quests	Skills
Solve problems:	Solving correspondence problems
multiplication/division	

4. Pupils represent counting in sixes as the six times table	
Skill Quests	Skills
Explore multiplication by 6	Exploring multiplication by 6
Course Topic	Activities Title
Multiply and Divide Facts	Groups of Six

5. Pupils explain the relationship between adjacent multiples of six	
Skill Quests	Skills
Explore multiplication by 6	Exploring multiplication by 6

6. Pupils use knowledge of the six times table to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

7. Pupils use known facts from the five times table to solve problems	
involving the six times table	
Course Topic	Activities Title
Teacher directed	Teacher directed

8. Pupils explain the relationship between multiples of three and multiples of six	
Skill Quests	Skills
Explore multiplication by 3	Exploring multiplication by 3
Explore multiplication by 6	Exploring multiplication by 6

9. Pupils use knowledge of the relationships between the three and six times	
tables to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

10. Pupils represent counting in nines as the nine times table	
Course Topic	Activities Title
Multiply and Divide Facts	Groups of Nine

11. Pupils explain the relationship between adjacent multiples of nine (1)	
Course Topic	Activities Title
Teacher directed	Teacher directed

12. Pupils explain the relationship between adjacent multiples of nine (2)	
Course Topic	Activities Title
Teacher directed	Teacher directed

13. Pupils use known facts from the ten times table to solve problems	
involving the nine times table	
Course Topic	Activities Title
Teacher directed	Teacher directed

14. Pupils explain the relationship between multiples of three and multiples of three and multiples	
Course Topic	Activities Title
Teacher directed	Teacher directed

15. Pupils explain the relationship between pairs of three and nine times table facts that have the same product (1)	
Course Topic	Activities Title
Teacher directed	Teacher directed

16, Pupils explain the relationship between pairs of three and nine times	
table facts that have the same product (2)	
Course Topic	Activities Title
Teacher directed	Teacher directed

17. Pupils use the divisibility rules for divisors of three	
Course Topic	Activities Title
Multiply and Divide	Dividing Threes

18. Pupils use the divisibility rules for divisors of six (1)	
Course Topic	Activities Title
Multiply and Divide Facts	Dividing Sixes

19. Pupils use the divisibility rules for divisors of six (2)	
Course Topic	Activities Title
Multiply and Divide Facts	Dividing Sixes

Spring

1. Pupils represent counting in threes as the three times table	
Skill Quests	Skills
Multiply by 3	Exploring multiplication by 3
Course Topic	Activities Title
Multiply and Divide	Groups of 3

Unit 4	(cont.)	: 3.	6.9	times	tables
Unit T	conten	,,	\circ, \circ	0000	CONICO

2. Pupils explain the relationship between adjacent multiples of three		
Skill Quests	Skills	
Multiply by 3	Exploring multiplication by 3	

3. Pupils use knowledge of the three times table to solve problems		
Skill Quests	Skills	
Solve problems:	Solving correspondence problems	
multiplication/division		

4. Pupils represent counting in sixes as the six times table		
Skill Quests	Skills	
Explore multiplication by 6	Exploring multiplication by 6	
Course Topic	Activities Title	
Multiply and Divide Facts	Groups of Six	

5. Pupils explain the relationship between adjacent multiples of six		
Skill Quests	Skills	
Explore multiplication by 6	Exploring multiplication by 6	

6. Pupils use knowledge of the six times table to solve problems		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

7. Pupils use known facts from the five times table to solve problems		
involving the six times table		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

8. Pupils explain the relationship between multiples of three and multiples of		
six		
Skill Quests	Skills	
Explore multiplication by 3	Exploring multiplication by 3	

Explore multiplication by 6	Exploring multiplication by 6

9. Pupils use knowledge of the relationships between the three and six times tables to solve problems		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

10. Pupils represent counting in nines as the nine times table	
Skill Quests	Skills
Teacher directed	Teacher directed
Course Topic	Activities Title
Multiply and Divide Facts	Groups of Nine

11. Pupils explain the relationship between adjacent multiples of nine (1)		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

12. Pupils explain the relationship between adjacent multiples of nine (2)	
Course Topic	Activities Title
Teacher directed	Teacher directed

13. Pupils use known facts from the ten times table to solve problems	
involving the nine times table	
Course Topic	Activities Title
Teacher directed	Teacher directed

14. Pupils explain the relationship between multiples of three and multiples	
of nine	
Course Topic	Activities Title
Teacher directed	Teacher directed

15. Pupils explain the relationship between pairs of three and nine times table facts that have the same product (1)	
Course Topic	Activities Title
Teacher directed	Teacher directed

16. Pupils explain the relationship between pairs of three and nine times table facts that have the same product (2)	
Course Topic	Activities Title
Teacher directed	Teacher directed

17. Pupils use the divisibility rules for divisors of three	
Course Topic	Activities Title
Multiply and Divide	Dividing Threes

18. Pupils use the divisibility rules for divisors of six (1)	
Course Topic	Activities Title
Multiply and Divide Facts	Dividing Sixes

19. Pupils use the divisibility rules for divisors of six (2)	
Course Topic	Activities Title
Multiply and Divide Facts	Dividing Sixes

Unit 5: 7 times table and patterns

1. Pupils represent counting in sevens as the 7 times table	
Course Topic	Activities Title
Multiply and Divide Facts	Groups of Seven

2. Pupils explain the relationship between adjacent multiples of seven		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

3. Pupils use their knowledge of the 7 times table to solve problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

4. Pupils identify patterns of odd and even numbers in the times tables	
Course Topic	Activities Title
Teacher directed	Teacher directed

5. Pupils represent a square number	
Course Topic	Activities Title
Teacher directed	Teacher directed

6. Pupils use knowledge of divisibility rules to solve problems	
Skill Quests	Skills
Find and use factor pairs	Finding and using factor pairs

Unit 6: Understanding and manipulating multiplicative relationships

1. Pupils explain what each factor represents in a multiplication equation	
Skill Quests	Skills
Find and use factor pairs	Finding and using factor pairs

2. Pupils explain how each part of a multiplication and division equation	
relates to a story	
Course Topic	Activities Title
Teacher directed	Teacher directed

3. Pupils explain where zero can be part of a multiplication or division expression and the impact it has	
Skill Quests	Skills
Use place value to multiply and divide	Multiplying by 1 and 0

4. Pupils partition one of the factors in a multiplication equation in different	
ways using representations (I)	
Course Topic	Activities Title
Teacher directed	Teacher directed

5. Pupils partition one of the factors in a multiplication equation in different	
ways using representations (II)	
Course Topic	Activities Title
Teacher directed	Teacher directed

6. Pupils explain which is the most efficient factor to partition to solve a	
multiplication problem	
Skill Quests	Skills
Find and use factor pairs	Finding and using factor pairs

7. Pupils use knowledge of distributive law to solve two part addition and	
subtraction problems, efficiently	
Skill Quests	Skills
Solve 2-step problems in	Solving addition and subtraction two-step problems
context	

8. Pupils use knowledge of distributive law to calculate products beyond	
known times tables facts	
Course Topic	Activities Title
Multiply and Divide	Grid Methods 1

Multiply: 2-digit by 1-digit
Multiply: 1-digit number
Multiply: 1-digit Number, Regroup

9. Pupils explain the relationship between multiplying a number by 10 and multiples of 10	
Course Topic	Activities Title
Multiply and Divide	Mental Methods Multiplication

10. Pupils explain why a zero can be placed after the final digit of a single- digit number when we multiply it by 10	
Course Topic	Activities Title
Teacher directed	Teacher directed

11. Pupils explain why a zero can be placed after the final digit of a two- digit number when we multiply it by 10	
Course Topic	Activities Title
Teacher directed	Teacher directed

12. Pupils explain why the final digit zero can be removed from a two-digit	
indulple of 10, when we divide by 10	
Course Topic	Activities Title
Teacher directed	Teacher directed

13. Pupils explain why the final digit zero can be removed from a three-digit multiple of 10, when we divide by 10	
Skill Quests	Skills
Divide by 10 and 100	Dividing by 10

14. Pupils explain the relationship between multiplying a number by 100 and multiples of 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

15. Pupils explain why two zeros can be placed after the final digit of a single-digit number when we multiply it by 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

16. Pupils explain why two zeros can be placed after the final digit of a two-	
digit number when we multiply it by 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

17. Pupils explain why the last two zeros can be removed from a three-digit multiple of 100 when we divide it by 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

18. Pupils explain why the last two zeros can be removed from a four- digit multiple of 100 when we divide it by 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

19. Pupils use knowledge of the composition of 100 to multiply by 100 in different ways	
Course Topic	Activities Title
Teacher directed	Teacher directed

20. Pupils use knowledge of the composition of 100 to divide by 100 in	
different ways	
Course Topic	Activities Title
Teacher directed	Teacher directed

21. Pupils explain how making a factor 10 times the size affects the	
product	
Course Topic	Activities Title
Teacher directed	Teacher directed

22. Pupils explain how making the dividend 10 times the size affects	
the quotient	
Course Topic	Activities Title
Teacher directed	Teacher directed

23. Pupils explain how making a factor 100 times the size affects the	
product	
Course Topic	Activities Title
Teacher directed	Teacher directed

24. Pupils explain how making the dividend 100 times the size affects the quotient	
Course Topic	Activities Title
Teacher directed	Teacher directed

25. Pupils scale known multiplication facts by 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

26. Pupils scale division derived from multiplication facts by 100	
Course Topic	Activities Title
Teacher directed	Teacher directed

Unit 7: Coordinates

1. Pupils give directions from one position to another on a grid	
Skill Quests	Skills
Describe position – first quadrant	Describing positions on a 2-D grid as coordinates
Describe translations – coordinate grid	Describing movement between positions
Course Topic	Activities Title
Properties of Shape and	Transformations
Position	Rotations
	Horizontal and Vertical Change

2. Pupils move objects including polygons on a grid according to directions, and mark the new position	
Skill Quests	Skills
Describe position – first quadrant	Describing positions on a 2-D grid as coordinates
Describe translations – coordinate grid	Describing movement between positions
Course Topic	Activities Title
Properties of Shape and Position	Transformations
	Rotations
	Horizontal and Vertical Change

3. Pupils describe translations of polygons drawn on a square grid	
Skill Quests	Skills
Describe position – first quadrant	Describing positions on a 2-D grid as coordinates
Describe translations – coordinate grid	Describing movement between positions

Course Topic	Activities Title
Properties of Shape and	Transformations
Position	

4. Pupils draw polygons specified by translations	
Course Topic	Activities Title
Teacher directed	Teacher directed

5. Pupils mark points specified as a translation from the origin		
Course Topic	Activities Title	
Teacher directed	Teacher directed	

6. Pupils mark the position of points specified by coordinates in the first guadrant of a coordinate grid, and write coordinates for already-marked		
points		
Skill Quests	Skills	
Describe position – first quadrant	Describing positions on a 2-D grid as coordinates	
Find missing coordinates on	Plotting specified points to complete a polygon	
polygons		

7. Pupils draw polygons specified by coordinates in the first quadrant	
Skill Quests	Skills
Find missing coordinates on polygons	Plotting specified points to complete a polygon
Course Topic	Activities Title
Teacher directed	Teacher directed
8. Pupils translate polygons in the first quadrant	

Summer

Unit 8: Review of fractions

1. Pupils identify a whole and the parts that make it up	
Skill Quests	Skills
Solve problems: fractions	Making a whole
Course Topic	Activities Title
Fractions (Something	What Fraction is Shaded?
Easier)	

2. Pupils explain why a part can only be defined when in relation to a whole	
Skill Quests	Skills
Solve problems: fractions	Making a whole
Course Topic	Activities Title
Fractions (Something	What Fraction is Shaded?
Easier)	
Fractions	One Take Fraction

3. Pupils identify the number of equal or unequal parts in a whole	
Skill Quests	Skills
Solve problems: fractions	Making a whole
Course Topic	Activities Title
Fractions	Shading Equivalent Fractions
	Equivalent Fraction Wall 2
	One Take Fraction

4. Pupils identify equal parts when they do not look the same	
Skill Quests	Skills
Recognise and show	Investigating common equivalent fractions
equivalent fractions	
Course Topic	Activities Title
Fractions	Shading Equivalent
	Fractions
	Equivalent Fraction Wall 2

5. Pupils explain the size of the part in relation to the whole	
Skill Quests	Skills
Solve problems: fractions	Making a whole
Course Topic	Activities Title
Fractions (Something	What Fraction is Shaded?
Easier)	
Fractions	One Take Fraction

6. Pupils construct a whole when given a part and the number of parts		
Skill Quests	Skills	
Solve problems: fractions	Making a whole	

Unit 9: Fractions greater than 1

1. Pupils explain how to express quantities made up of both whole numbers and a fractional part	
Course Topic	Activities Title
Fractions	Counting With Fractions on a Number Line
	Add Like Fractions
	Subtract Like Fractions
	Common Denominator
	One Take Fraction

2. Pupils explain how a quantity made up of whole numbers and a fractional	
part is composed	
Course Topic	Activities Title
Fractions (Something Easier)	What Fraction is Shaded?

3. Pupils compose and decompose quantities made of whole numbers and	
fractional parts	
Course Topic	Activities Title
Fractions	Counting With Fractions on a Number Line
	One Take Fraction

4. Pupils accurately label a range of number lines and explain the meaning	
of each part	
Course Topic	Activities Title
Fractions	Counting With Fractions on a Number Line

5. Pupils identify numbers on marked but unlabelled number lines	
Course Topic	Activities Title
Fractions	Counting With Fractions on a Number Line

6. Pupils estimate the position of numbers on a number line using fraction	
sense	
Course Topic	Activities Title
Fractions	Counting With Fractions on a Number Line

7. Pupils compare and order mixed numbers using fraction sense	
Course Topic	Activities Title
Fractions	Counting With Fractions on a Number Line

8. Pupils compare and order mixed numbers when the whole number is the	
same	
Course Topic	Activities Title
Teacher directed	Teacher directed

9. Pupils compare and order mixed numbers when the whole number and the numerator of the fractional part is the same	
the numerator of the nuctional part is the same	
Course Topic	Activities Title
Teacher directed	Teacher directed

10. Pupils make efficient choices about the order they solve an addition problem in	
Skill Quests	Skills
Add fractions: same denominator	Adding fractions with the same denominator
Course Topic	Activities Title
Fractions	Add Like Fractions
	Common Denominator

11. Pupils make efficient choices about the order they solve a subtraction problem in	
Course Topic	Activities Title
Fractions	Subtract Like Fractions
	Common Denominator

12. Pupils express a quantity as a mixed number and an improper fraction	
(quarters)	
Course Topic	Activities Title
Fractions	Counting with Fractions on a Number Line

13. Pupils convert a quantity from an improper fraction to a mixed number	
(quarters)	
Course Topic	Activities Title
Fractions	Counting with Fractions on a Number Line

14. Pupils express and convert a quantity from an improper fraction to a	
mixed number (fifths)	
Course Topic	Activities Title
Teacher directed	Teacher directed

15. Pupils explain how an improper fraction is converted into a mixed	
number (any unit)	
Course Topic	Activities Title
Teacher directed	Teacher directed

16. Pupils explain how a mixed number is converted into an improper	
fraction	
Course Topic	Activities Title
Teacher directed	Teacher directed

17. Pupils add mixed numbers	
Course Topic	Activities Title
Teacher directed	Teacher directed

18. Pupils subtract a proper fraction from a mixed number (converting to an	
improper fraction first)	
Course Topic	Activities Title
Teacher directed	Teacher directed

19. Pupils subtract a mixed number from a mixed number and explain which	
strategy is most efficient	
Course Topic	Activities Title
Teacher directed	Teacher directed

20. Pupils use knowledge of subtraction to choose correct and efficient approaches when subtracting mixed numbers	
Course Topic	Activities Title
Fractions	Subtract Like Fractions
	Common Denominator

Unit 10: Symmetry in 2D shapes

1. Pupils complete a symmetrical pattern	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils compose symmetrical shapes from two congruent shapes	
Course Topic	Activities Title
Teacher directed	Teacher directed

3. Pupils investigate lines of symmetry in 2D shapes by folding paper shape	
cut-outs	
Skill Quests	Skills
Identify lines of symmetry in 2-D shapes	Identifying lines of symmetry in 2-D shapes
Course Topic	Activities Title
Properties of Shape	Symmetry or Not?

4. Pupils find lines of symmetry in 2D shapes using a mirror	
Skill Quests	Skills
Draw lines of symmetry	Drawing lines of symmetry
Course Topic	Activities Title
Properties of Shape	Symmetry or Not?

5. Pupils reflect polygons in a line of symmetry	
Course Topic	Activities Title
Teacher directed	Teacher directed

6. Pupils reflect polygons that are dissected by a line of symmetry	
Course Topic	Activities Title
Teacher directed	Teacher directed

Unit 11: Time

1. Read, write and convert time between analogue and digital 12- and 24- hour clocks	
Skill Quests	Skills
Read, write and convert units of time	Reading, writing and converting units of time
Course Topic	Activities Title
Time	24 Hour Time

2. Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	
Course Topic	Activities Title
Time	Using Timetables
	Elapsed Time
	What time will it be?
	Hours and Minutes

Unit 12: Division with remainders

1. Pupils interpret a division story when there is a remainder and represent it with an equation (i)	
Course Topic	Activities Title
Teacher directed	Teacher directed

2. Pupils interpret a division story when there is a remainder and represent it	
with an equation (ii)	
Course Topic	Activities Title
Teacher directed	Teacher directed

3. Pupils interpret a division story when there is a remainder and represent it	
with an equation (iii)	
Course Topic	Activities Title
Teacher directed	Teacher directed

4. Pupils explain how the remainder relates to the divisor in a division	
equation	
Course Topic	Activities Title
Teacher directed	Teacher directed

5. Pupils explain when there will and will not be a remainder in a division	
equation	
Course Topic	Activities Title
Teacher directed	Teacher directed

6. Pupils use knowledge of division equations and remainders to solve	
problems	
Course Topic	Activities Title
Teacher directed	Teacher directed

7. Pupils interpret the answer to a division calculation to solve a problem (i)	
Course Topic	Activities Title
Teacher directed	Teacher directed

8. Pupils interpret the answer to a division calculation to solve a problem (ii)	
Course Topic	Activities Title
Teacher directed	Teacher directed



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