Mathletics

NCETM Curriculum Prioritisation Alignment

Activities and Skill Quests

Years 5-6

June, 2023

Mathletics

National Centre for Excellence in the Teaching of Mathematics

June 2023

Year 5

Autumn

Unit 1: Decimal Fractions

1. Pupils identify tenths as part of a whole	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

2. Pupils describe and represent tenths as a decimal fraction	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

3. Pupils count in tenths in different ways	
Skill Quests	**Skills**
Count up and down in tenths	Introducing tenths

4. Pupils describe and write decimal numbers with tenths in different ways	
Skill Quests	**Skills**
Write tenths as decimals	Introducing tenths as decimals

5. Pupils compare and order decimal numbers with tenths	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

6. Pupils explain that decimal numbers with tenths can be composed additively	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

7. Pupils explain that decimal numbers with tenths can be composed multiplicatively	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

8. Pupils use their knowledge to calculate with decimal numbers within and across one whole	
Skill Quests	**Skills**
Add Decimals	Adding decimals to 1 decimal place

	Adding decimals to 2 decimal places
	Adding decimals to 3 decimal places
	Investigating decimal compliments to 1
Subtract Decimals	Subtracting decimals within 1
	Subtracting decimals up to 3 decimal places
Course Topic	**Activities Title**
Fraction Calculations	Adding Decimals
	Subtracting Decimals
	Estimating Decimal Sums 1
	Estimating Decimal Differences 1
	Add decimals 1
	Subtract Decimals 1
	Decimal Complements
Fractions, Decimals and Percentage	Multiply Decimals 10 100 1000
Add and Subtract Decimals	Add Decimals 2
	Subtract Decimals 2
	Missing Values: Decimals

9. Pupils use their knowledge to calculate with decimal numbers using mental methods	
Skill Quests	**Skills**
Add Decimals	Adding decimals to 1 decimal place
	Adding decimals to 2 decimal places
	Adding decimals to 3 decimal places
	Investigating decimal compliments to 1
Subtract Decimals	Subtracting decimals within 1
	Subtracting decimals up to 3 decimal places
Course Topic	**Activities Title**
Fraction Calculations	Adding Decimals
	Subtracting Decimals
	Estimating Decimal Sums 1
	Estimating Decimal Differences 1
	Add decimals 1
	Subtract Decimals 1
	Decimal Complements
Fractions, Decimals and Percentage	Multiply Decimals 10 100 1000
Add and Subtract Decimals	Add Decimals 2
	Subtract Decimals 2
	Missing Values: Decimals

10. Pupils use their knowledge to calculate with decimal numbers using column addition and subtraction	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

11. Pupils use representations to round a decimal number with tenths to the nearest whole number	
Skill Quests	**Skills**
Round decimals with one decimals place	Rounding decimals to the nearest whole number
Course Topic	**Activities Title**
Fraction Calculations	Estimate Decimal Sums 1 Estimating Decimal Differences 1
Fractions, Decimals and Percentages	

12. Pupils identify hundredths as part of a whole	
Skill Quests	**Skills**
Count in hundredths	Counting in hundredths

13. Pupils describe and represent hundredths as a decimal fraction	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

14. Pupils describe and write decimals numbers with hundredths in different ways	
Course Topic	**Activities Title**
Fractions, Decimals and Percentages	Decimals from Words to Digits 1

15. Pupils compare and order decimal numbers with hundredths	
Skill Quests	**Skills**
Compare and order decimal numbers to 2dp	Comparing and ordering decimal numbers
Course Topic	**Activities Title**
Fractions, Decimals and Percentages	Comparing Decimals 2

16. Pupils explain that decimal numbers with hundredths can be partitioned in different ways	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

17. Pupils use their knowledge of decimal place value to convert between and compare metres and centimetres	
Skill Quests	**Skills**
Convert units of measure - length	Converting – km, m, cm and mm
Convert units of length	Converting between m, cm and mm
Course Topic	**Activities Title**
Length, Perimeter and Area	Converting units of Length

	Operations with Length

18. Pupils explain that different lengths can be composed additively and multiplicatively	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

19. Pupils use their knowledge of decimal place value to solve problems in different contexts	
Skill Quests	**Skills**
Add and subtract amounts of money	Adding and subtracting amounts of money
Money: estimate, compare, calculate	Estimating and rounding amounts of money
Solve measure problems with decimals	Equivalent measures to 3 decimal places
	Comparing/ ordering units of mass to 3dp
	Solving money problems, multiplication and division
Course Topic	**Activities Title**
Problem Solving	Money Problems: Four Operations with Pounds
Add and Subtract Decimals	Missing Values: Decimals

20. Pupils use their knowledge to calculate with decimal numbers up to and bridging one tenth	
Skill Quests	**Skills**
Add and subtract decimals	Adding and subtracting decimals
Add decimals	Adding decimals to 1 decimal place
	Adding decimals to 2 decimal places
	Adding decimals to 3 decimal places
Subtract decimals	Subtracting decimals within 1
	Subtracting decimals up to 3 decimal places

21. Pupils use their knowledge to calculate with decimal numbers using column addition and subtraction	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

22. Pupils round a decimal number with hundredths to the nearest tenth	
Skill Quests	**Skills**
Round decimals	Rounding decimals

23. Pupils round a decimal number with hundredths to the nearest whole number	
Skill Quests	**Skills**
Round decimals	Rounding decimals

Course Topic	Activities Title
Fraction Calculations	Estimating Decimal Sums 1
	Estimating Decimal Differences 1
Fractions, Decimals and Percentages	Rounding Decimals

24. Pupils read and write numbers with up to 3 decimal places	
Skill Quests	**Skills**
Introduce thousandths	Introducing thousandths
Course Topic	**Activities Title**
Fractions, Decimals and Percentages	Decimals from Words to Digits 1

25. Pupils compare and order numbers with up to 3 decimal places	
Skill Quests	**Skills**
Order and compare decimals	Ordering/comparing decimals, up to 3 decimal places
Course Topic	**Activities Title**
Fractions, Decimals and Percentages	Comparing Decimals 2

Unit 2: Money

1. Pupils explain and represent whole pounds as a quantity of money	
Course Topic	**Activities Title**
Problem Solving	Money Problems: Four Operations with Pounds

2. Pupils explain and represent whole pounds and pence as a quantity of money	
Course Topic	**Activities Title**
Problem Solving	Money Problems: Four Operations with Pounds

3. Pupils explain how to compare amounts of money	
Skill Quests	**Skills**
Money: estimate, compare, calculate	Estimating and rounding amounts of money
Course Topic	**Activities Title**
Problem Solving	Money Problems: Four Operations with Pounds

4. Pupils convert quantities of money between pounds and pence	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

5. Pupils use their knowledge of addition to efficiently add commonly used prices	
Skill Quests	**Skills**
Add and subtract amounts of money	Adding and subtracting amounts of money
Course Topic	**Activities Title**
Problem Solving	Money Problems: Four Operations with Pounds

6. Pupils use their knowledge of subtraction to calculate the change due when paying whole pounds or notes	
Skill Quests	**Skills**
Add and subtract amounts of money	Adding and subtracting amounts of money
Course Topic	**Activities Title**
Problem Solving	Money Problems: Four Operations with Pounds

7. Pupils use and explain the most efficient strategies when adding quantities of money	
Skill Quests	**Skills**
Add and subtract amounts of money	Adding and subtracting amounts of money

8. Pupils use and explain the most efficient strategies when subtracting quantities of money	
Skill Quests	**Skills**
Add and subtract amounts of money	Adding and subtracting amounts of money

9. Pupils find the change when purchasing several items	
Skill Quests	**Skills**
Add and subtract amounts of money	Adding and subtracting amounts of money
Course Topic	**Activities Title**
Problem Solving	Money Problems: Four Operations with Pounds

10. Pupils use the most efficient and reliable strategy to find the change when purchasing several items	
Skill Quests	**Skills**
Solve measure problems with decimals	Solving money problems, multiplication and division
Course Topic	**Activities Title**
Problem Solving	Money Problems: Four Operations with Pounds

Unit 3: Negative numbers

1. Pupils represent a change story using addition and subtraction symbols	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

2. Pupils interpret numbers greater than and less than zero in different contexts	
Skill Quests	**Skills**
Interpreting negative numbers in context	Interpreting negative numbers in context
Course Topic	**Activities Title**
Number and Place Value	Integers on a Number Line

3. Pupils read and write negative numbers	
Course Topic	**Activities Title**
Number and Place Value	Integers on a Number Line

4. Pupils explain how the value of a number relates to its position from zero	
Course Topic	**Activities Title**
Number and Place Value	Integers on a Number Line

5. Pupils identify and place negative numbers on a number line	
Course Topic	**Activities Title**
Number and Place Value	Integers on a Number Line

6. Pupils interpret sets of negative and positive numbers in a range of contexts	
Skill Quests	**Skills**
Interpreting negative numbers in context	Interpreting negative numbers in context

7. Pupils use their knowledge of positive and negative numbers to calculate intervals	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

8. Pupils explain how negative numbers are used on a coordinate grid	
Course Topic	**Activities Title**
Properties of Shapes and Position	Coordinate Graphs Transformations: Coordinate Plane

9. Pupils use their knowledge of positive and negative numbers to interpret graphs	
Skill Quests	**Skills**
Solve problems using line graphs	Solving problems using line graphs

Unit 4: Short multiplication and short division

1. Pupils multiply a two-digit number by a single-digit number using partitioning and representations (no regroups)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit

2. Pupils multiply a two-digit number by a single-digit number using partitioning and representations (one regroup)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit

3. Pupils multiply a two-digit number by a single-digit number using partitioning and representations (two regroups)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit

4. Pupils multiply a two-digit number by a single-digit number using partitioning	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit

5. Pupils multiply a two-digit number by a single-digit number using expanded multiplication (no regroups)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit

6. Pupils multiply a two-digit number by a single-digit number using short multiplication (no regroups)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit
Course Topic	**Activities Title**
Multiply and Divide Written	Short Multiplication
	Contracted Multiplication

7. Pupils multiply a two-digit number by a single-digit number using expanded multiplication (regrouping ones to tens)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit

8. Pupils multiply a two-digit number by a single-digit number using short multiplication (regrouping ones to tens)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit
Course Topic	**Activities Title**
Multiply and Divide Written	Short Multiplication
	Contracted Multiplication

9. Pupils multiply a two-digit number by a single-digit number using expanded multiplication (regrouping tens to hundreds)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit

10. Pupils multiply a two-digit number by a single-digit number using short multiplication (regrouping tens to hundreds)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit
Course Topic	**Activities Title**
Multiply and Divide Written	Short Multiplication
	Contracted Multiplication

11. Pupils multiply a two-digit number by a single-digit number using both expanded and short multiplication (two regroups)	
Skill Quests	**Skills**
Multiply 2 digits by 1 digit	Multiplying 2 digits by 1 digit
Course Topic	**Activities Title**
Multiply and Divide Written	Short Multiplication
	Contracted Multiplication

12. Pupils use estimation to support accurate calculation	
Course Topic	**Activities Title**
Multiply and Divide Mental	Estimate Products
	Estimation: Multiply and Divide

13. Pupils multiply a three-digit number by a single-digit number using partitioning and representations	
Skill Quests	**Skills**
Multiply two-digit and three-digit numbers	Multiplying 2- and 3-digit numbers by 1-digit

14. Pupils multiply a three-digit number by a single-digit number using partitioning	
Skill Quests	**Skills**
Multiply two-digit and three-digit numbers	Multiplying 2- and 3-digit numbers by 1-digit

15. Pupils multiply a three-digit number by a single-digit number using expanded and short multiplication (no regroups)	
Skill Quests	**Skills**
Multiply two-digit and three-digit numbers	Multiplying 2- and 3-digit numbers by 1-digit
Course Topic	**Activities Title**
Multiply and Divide Written	Short Multiplication
	Contracted Multiplication

16. Pupils multiply a three-digit number by a single-digit number using expanded and short multiplication (one regroup)	
Skill Quests	**Skills**
Multiply two-digit and three-digit numbers	Multiplying 2- and 3-digit numbers by 1-digit
Course Topic	**Activities Title**
Multiply and Divide Written	Short Multiplication
	Contracted Multiplication *Includes some three-digit number and other regroupings*

17. Pupils multiply a three-digit number by a single-digit number using expanded and short multiplication (multiple regroups)	
Skill Quests	**Skills**
Multiply two-digit and three-digit numbers	Multiplying 2- and 3-digit numbers by 1-digit
Course Topic	**Activities Title**
Multiply and Divide Written	Short Multiplication
	Contracted Multiplication *Includes some three-digit number and other regroupings*

18. Pupils use estimation to support accurate calculation	
Course Topic	**Activities Title**
Multiply and Divide Mental	Estimate Products
	Estimation: Multiply and Divide

19. Pupils divide a two-digit number by a single-digit number using partitioning and representations (no remainders, no exchanging)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

20. Pupils divide a two-digit number by a single-digit number using partitioning and representations (with exchanging)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

21. Pupils divide a two-digit number by a single-digit number using partitioning and representations (with exchanging and remainders)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

22. Pupils divide a two-digit number by a single-digit number using short division (no exchanging, no remainders)	
Course Topic	**Activities Title**
Multiply and Divide Written	Short Division

23. Pupils divide a two-digit number by a single-digit number using short division (with exchanging)	
Course Topic	**Activities Title**
Multiply and Divide Written	Short Division

24. Pupils divide a two-digit number by a single-digit number using short division (with exchanging and remainders)	
Course Topic	**Activities Title**
Multiply and Divide Written	Short Division

25. Pupils divide a three-digit number by a single-digit number using partitioning and representations (no exchanging, no remainders)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

26. Pupils divide a three-digit number by a single-digit number using partitioning and representations (one exchange, no remainders)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

27. Pupils divide a three-digit number by a single-digit number using partitioning and representations (with exchanging and remainders)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

28. Pupils divide a three-digit number by a single-digit number using short division	
Course Topic	**Activities Title**
Multiply and Divide Written	Short Division

29. Pupils divide a three-digit number by a single-digit number using short division (with exchanging and remainders)	
Course Topic	**Activities Title**
Multiply and Divide Written	Short Division

30. Pupils solve short division problems accurately when the hundreds digit is smaller than the divisor	
Course Topic	**Activities Title**
Multiply and Divide Written	Short Division

31. Pupils will use efficient strategies of division to solve problems	
Skill Quests	**Skills**
Solve multiplication/division problems 1	Solving problems using factors and multiples
	Solving multiplication word problems
	Solving division word problems
Solve multiplication/division problems 2	Scaling by fractions
	Solving problems involving simple rates
Course Topic	**Activities Title**
Multiply and Divide Written	Word Problems: Multiply and Divide

Spring

Unit 5: Area and scaling

1. Pupils explain what area is and can measure using counting as a strategy (1)	
Skill Quests	**Skills**
Calculate and compare area	Introducing the square centimetre and square metre
Course Topic	**Activities Title**
Length, Perimeter and Area	Biggest Shape
	Equal Areas

2. Pupils explain what area is and can measure using counting as a strategy (2)	
Skill Quests	**Skills**
Calculate and compare area	Introducing the square centimetre and square metre
Course Topic	**Activities Title**
Length, Perimeter and Area	Biggest Shape
	Equal Areas

3. Pupils explain how to make different shapes with the same area	
Skill Quests	**Skills**
Calculate and compare area	Comparing and ordering areas
	Estimating and comparing areas of irregular shapes
Course Topic	**Activities Title**
Length, Perimeter and Area	Equal Areas

4. Pupils explain how to compare the area of different shapes	
Skill Quests	**Skills**
Calculate and compare area	Comparing and ordering areas
	Estimating and comparing areas of irregular shapes
Course Topic	**Activities Title**
Length, Perimeter and Area	Biggest Shape
	Equal Areas

5. Pupils measure the area of flat shapes area using square centimetres	
Skill Quests	**Skills**
Calculate and compare area	Calculate the area of a rectangle
Course Topic	**Activities Title**
Length, Perimeter and Area	Area of Shapes

6. Pupils measure the area of flat shapes area using square metres	
Skill Quests	**Skills**
Calculate and compare area	Calculate the area of a rectangle

Course Topic	Activities Title
Length, Perimeter and Area	Area: Squares and Rectangles

7. Pupils calculate the area of a rectangle using multiplication	
Skill Quests	**Skills**
Calculate and compare area	Calculate the area of a rectangle
Course Topic	**Activities Title**
Length, Perimeter and Area	Area of Shapes
Length, Perimeter and Area	Area: Squares and Rectangles
Perimeter, Area and Volume	Area: Squares and Rectangles 2

8. Pupils calculate the area of rectilinear shapes	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

9. Pupils use their knowledge of area to solve problems	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

10. Pupils compare and describe lengths by using their knowledge of multiplication	
Skill Quests	**Skills**
Solve measure problems with decimals	Equivalent measures to 3 decimal places
Course Topic	**Activities Title**
Properties of Shape and Rotation	Scale Measurement

11. Pupils use their knowledge of multiplication to solve comparison and change problems	
Course Topic	**Activities Title**
Length, Perimeter and Area	Perimeter, Area, Dimension Change
Properties of Shape and Rotation	Scale Measurement

12. Pupils compare and describe lengths by using their knowledge of division	
Skill Quests	**Skills**
Solve measure problems with decimals	Equivalent measures to 3 decimal places
Course Topic	**Activities Title**
Properties of Shape and Rotation	Scale Measurement

13. Pupils use their knowledge of division to solve comparison and change problems	
Course Topic	**Activities Title**
Properties of Shape and Rotation	Scale Measurement

14. Pupils compare and describe measurements by using their knowledge of multiplication and division (mass/capacity/time) (1)	
Skill Quests	**Skills**
Convert units of mass	Converting between kilograms and grams
Convert units of length	Converting between m, cm and mm
Convert units of capacity	Converting between litres and millilitres
Course Topic	**Activities Title**
Problem Solving	Fraction Length Models 1
Volume, Capacity and Mass	Grams and Kilograms
	Kilogram Conversions
	Litre Conversions

15. Pupils compare and describe measurements by using their knowledge of multiplication and division (mass/capacity/time) (2)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

16. Pupils describe the changes in measurements using their knowledge of multiplication and division	
Course Topic	**Activities Title**
Properties of Shape and Rotation	Scale Measurement

17. Pupils use their knowledge of multiplication and division to solve comparison and change problems	
Skill Quests	**Skills**
Solve multiplication/division problems 2	Scaling by fractions
	Solving problems involving simple rates
Course Topic	**Activities Title**
Properties of Shape and Rotation	Scale Measurement

Unit 6: Calculating with decimal fractions

1. Pupils explain the effect of multiplying and dividing a number by 10, 100 and 1,000 (1)	
Skill Quests	**Skills**
Multiply and divide by 10, 100 and 1000	Multiplying whole numbers by 10, 100 and 1000
	Dividing whole numbers by 10, 100 and 1000

Course Topic	Activities Title
Multiply and Divide (mental)	Multiplying Whole Numbers by 10 100 1000
	Dividing by 10 100 1000

2. Pupils explain the effect of multiplying and dividing a number by 10, 100 and 1,000 (2)	
Skill Quests	**Skills**
Multiply and divide by 10, 100 and 1000	Multiplying decimals by 10, 100 and 1000
	Dividing decimals by 10, 100 and 1000

3. Pupils explain how to multiply and divide a number by 10, 100 and 1,000 (first 'number' two or more non-zero digits)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

4. Pupils use their knowledge of multiplication and division by 10/100/1,000 to convert between units of measure (length)	
Skill Quests	**Skills**
Convert units of length	Converting between m, cm and mm
Course Topic	**Activities Title**
Length, Perimeter and Area	Metres and Kilometres
	Kilometre Conversions

5. Pupils use their knowledge of multiplication and division by 10/100/1,000 to convert between units of measure (mass and capacity)	
Skill Quests	**Skills**
Convert units of mass	Converting between kilograms and grams
Convert units of capacity	Converting between litres and millilitres
Course Topic	**Activities Title**
Volume, Capacity and Mass	Grams and Kilograms
	Comparing Volume
	Kilogram Conversions
	Litre Conversions

6. Pupils explain how to use known multiplication facts and unitising to multiply decimal fractions by whole numbers (tenths)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

7. Pupils explain how to use known multiplication facts and unitising to multiply decimal fractions by whole numbers (hundredths)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

8. Pupils use their knowledge of multiplying decimal fractions by whole numbers to solve measures problems	
Skill Quests	**Skills**
Solve measure problems with decimals	Equivalent measures to 3 decimal places
	Comparing/ ordering units of mass to 3 decimal places
	Solving money problems, multiplication and division

9. Pupils explain the relationship between multiplying by 0.1 dividing by 10	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

10. Pupils explain the relationship between multiplying by 0.01 dividing by 100	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

11. Pupils explain how to use multiplying by 10 or 100 to multiply one-digit numbers by decimal fractions (1)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

12. Pupils explain how to use multiplying by 10 or 100 to multiply one-digit numbers by decimal fractions (2)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

13. Pupils explain how to use the size of the multiplier to predict the size of the product compared to the multiplicand	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

14. Pupils explain how to use multiplying by 10 or 100 to divide decimal fractions by one-digit numbers (1)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

15. Pupils explain how to use multiplying by 10 or 100 to divide decimal fractions by one-digit numbers (2)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

Unit 7: Factors, multiples and primes

1. Pupils explain what 'volume' is using a range of contexts	
Skill Quests	**Skills**
Estimate Volume	Estimating volume using 1cm³ blocks
Course Topic	**Activities Title**
Volume, Capacity and Mass	Capacity Word Problems

2. Pupils describe the units used to measure volume	
Skill Quests	**Skills**
Estimate Volume	Estimating volume using 1cm³ blocks
Course Topic	**Activities Title**
Volume, Capacity and Mass	Converting Volume

3. Pupils explain how to calculate the volume of a cuboid	
Course Topic	**Activities Title**
Perimeter, Area and Volume	Volume: Cuboid 1

4. Pupils explain what a cube number is	
Skill Quests	**Skills**
Solve multiplication/division problems 1	Comparing square and cube numbers

5. Pupils use their knowledge of calculating volume to solve problems in a range of contexts	
Course Topic	**Activities Title**
Volume, Capacity and Mass	Capacity Word Problems
	How Many Blocks?
Perimeter, Area and Volume	Volume: Cuboid 1

6. Pupils explain how to calculate the volume of compound shapes	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

7. Pupils explain the use of the commutative and distributive laws when multiplying three or more numbers	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

8. Pupils explain the reasons for changing two-factor multiplication calculations to three-factor multiplications	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

9. Pupils explain what a factor is and how to use arrays and multiplication/division facts to find them	
Skill Quests	**Skills**
Identify multiples and factors	Identifying factors and common factors

10. Pupils explain how to systematically find all factors of a number and how they know when they have found them all	
Course Topic	**Activities Title**
Multiply and Divide Facts	Factors

11. Pupils use a complete list of factors to explain when a number is a square number	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

12. Pupils explain how to identify a prime number or a composite number	
Skill Quests	**Skills**
Introduce prime and composite numbers	Introducing prime and composite numbers
Course Topic	**Activities Title**
Number and Place Value	Prime or Composite?

13. Pupils explain how to identify a common factor or a prime factor of a number	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

14. Pupils explain how to identify a multiple or common multiple of a number	
Skill Quests	**Skills**
Identify multiples and factors	Identifying multiples up to 100
Course Topic	**Activities Title**
Multiply and Divide Facts	Multiples

15. Pupils use knowledge of properties of number to solve problems in a range of contexts	
Skill Quests	**Skills**
Solve multi-step add/subtract problems	Solving two-step addition and subtraction problems
Solve add/sub, mult/div problems	Using distributive properties
	Solving missing number problems

Solve multiplication/division problems 2	Scaling by fractions
	Solving problems involving simple rates
Course Topic	**Activities Title**
Add and Subtract Mental	Pyramid Puzzles 2
	Find the Missing Number 2
Add and Subtract Decimals	Missing Values: Decimals
Multiply and Divide Written	Word Problems: Multiply and Divide
Problem Solving	Magic Symbols 2
	Pyramid Puzzles q
	Bar Model Problems 2
	I am Thinking of a Number!
	Missing Numbers: Multiplication and Division facts

16. Pupils explain how to use the factor pairs of '100' to solve calculations efficiently	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

Summer

Unit 8: Fractions

1. Pupils explain the relationship between repeated addition of a proper fraction and multiplication of fractions (unit fractions)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

2. Pupils explain the relationship between repeated addition of a proper fraction and multiplication of fractions (non-unit fractions)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

3. Pupils multiply a proper fraction by a whole number (within a whole)	
Skill Quests	**Skills**
Multiply fractions by whole numbers	Multiplying fractions by whole numbers
Course Topic	**Activities Title**
Fraction Calculations	Fraction by Whole Number
	Model Fractions to Multiply

4. Pupils multiply a proper fraction by a whole number (greater than a whole)	
Skill Quests	**Skills**
Multiply fractions by whole numbers	Multiplying fractions by whole numbers
Course Topic	**Activities Title**
Fraction Calculations	Fraction by Whole Number
	Model Fractions to Multiply

5. Pupils multiply an improper fraction by a whole number	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

6. Pupils multiply a mixed number by a whole number (product is within a whole)	
Skill Quests	**Skills**
Multiply mixed numbers by whole numbers	Multiplying mixed numbers by whole numbers

7. Pupils multiply a mixed number by a whole number (product is greater than a whole)	
Skill Quests	**Skills**
Multiply mixed numbers by whole numbers	Multiplying mixed numbers by whole numbers

8. Pupils find a unit fraction of a quantity	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

9. Pupils explain the relationship between finding a fraction of a quantity and multiplying a whole number by a unit fraction	
Course Topic	**Activities Title**
Fraction Calculations	Fraction by Whole Number

10. Pupils explain the relationship between dividing by a whole number and multiplying a whole number by a unit fraction	
Course Topic	**Activities Title**
Fraction Calculations	Fraction by Whole Number
	Model Fractions to Multiply
Fraction Calculations	Divide Fractions Visual Model

11. Pupils use their knowledge of multiplying a whole number by a unit fraction to solve problems	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

12. Pupils find a non-unit fraction of a quantity (mental calculation)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

13. Pupils find a non-unit fraction of a quantity (written calculation)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

14. Pupils multiply a whole number by a proper fraction	
Skill Quests	**Skills**
Multiply fractions by whole numbers	Multiplying fractions by whole numbers
Course Topic	**Activities Title**
Fraction Calculations	Fraction by Whole Number
	Model Fraction to Multiply

15. Pupils explain when a calculation represents scaling down and when it represents repeated addition	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

16. Pupils find the whole when the size of a unit fraction is known	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

17. Pupils find a unit fraction when the size of a non-unit fraction is known	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

18. Pupils find the whole when the size of a non-unit fraction is known	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

19. Pupils find the unit fraction when the size of a non-unit fraction is known	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

20. Pupils use representations to describe and compare two fractions (1/4 and 3/12)	
Skill Quests	**Skills**
Compare and order fractions	Comparing/ordering fractions, related denominators
Course Topic	**Activities Title**
Fractions	Ordering Fractions
	Compare Fractions 1b
	Compare Fractions 2

21. Pupils use representations to describe and compare two fractions (1/5 and 5/10)	
Skill Quests	**Skills**
Compare and order fractions	Comparing/ordering fractions, related denominators
Course Topic	**Activities Title**
Fractions	Ordering Fractions
	Compare Fractions 1b
	Compare Fractions 2

22. Pupils use representations to describe and compare two fractions (pouring context)	
Skill Quests	**Skills**
Compare and order fractions	Comparing/ordering fractions, related denominators

23. Pupils correctly use the language of equivalent fractions	
Skill Quests	**Skills**
Investigate equivalent fractions	Investigating equivalent fractions
Course Topic	**Activities Title**
Fractions	Equivalent Fractions
	Equivalent Fractions 1
	Shading Equivalent Fractions

24. Pupils explain the vertical relationship between numerators and denominators within equivalent fractions (1/5, 1/3 and equivalent)	
Course Topic	**Activities Title**
Fractions	Equivalent Fractions
	Equivalent Fractions 1
	Shading Equivalent Fractions

25. Pupils use their knowledge of the vertical relationship to solve equivalent fractions problems	
Skill Quests	**Skills**
Investigate equivalent fractions	Investigating equivalent fractions

26. Pupils explain the horizontal relationship between numerators and denominators across equivalent fractions (1/5, 1/3 and equivalent)	
Course Topic	**Activities Title**
Fractions	Equivalent Fractions
	Equivalent Fractions 1
	Shading Equivalent Fractions

27. Pupils explain the relationship within families of equivalent fractions	
Course Topic	**Activities Title**
Fractions	Equivalent Fractions
	Equivalent Fractions 1
	Shading Equivalent Fractions

28. Pupils use their knowledge of equivalent fractions to solve problems	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

29. Pupils explain and represent how to divide 1 into different amounts of equal parts	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

30. Pupils identify and describe patterns within the number system	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

31. Pupils use their knowledge of common equivalents to compare fractions with decimals	
Skill Quests	**Skills**
Convert simple fractions to decimals	Converting simple fractions to decimals
Course Topic	**Activities Title**
Fractions	Fractions to Decimals
	Fractions to Decimals 2

32. Pupils practise recalling common fraction-decimal equivalents	
Skill Quests	**Skills**
Convert simple fractions to decimals	Converting simple fractions to decimals
Course Topic	**Activities Title**
Fractions	Fractions to Decimals
	Fractions to Decimals 2

Unit 9: Converting units

1. Pupils apply memorised unit conversions to convert between units of measure (larger to smaller units - whole number conversions)	
Skill Quests	**Skills**
Convert units of mass	Converting between kilograms and grams
Convert units of length	Converting between m, cm and mm
Convert units of capacity	Converting between litres and millilitres
Course Topic	**Activities Title**
Length, Perimeter and Area	Converting Units of Length
	Converting Units of Area
Volume, Capacity and Mass	Converting Units of Mass
	Converting Volume

2. Pupils apply memorised unit conversions to convert between units of measure (smaller to larger units - whole number conversions)	
Skill Quests	**Skills**
Convert units of mass	Converting between kilograms and grams
Convert units of length	Converting between m, cm and mm
Convert units of capacity	Converting between litres and millilitres
Course Topic	**Activities Title**
Length, Perimeter and Area	Converting Units of Length
	Converting Units of Area
Volume, Capacity and Mass	Converting Units of Mass

	Converting Volume

3. Pupils convert from and to fraction and decimal fraction quantities of larger units	
Skill Quests	**Skills**
Convert units of mass	Converting between kilograms and grams
Convert units of length	Converting between m, cm and mm
Convert units of capacity	Converting between litres and millilitres
Course Topic	**Activities Title**
Fractions	Fractions to Decimals
	Fractions to Decimals 2

4. Pupils derive common conversions over 1	
Course Topic	**Activities Title**
Fractions	Fractions to Decimals
	Fractions to Decimals

5. Pupils carry out conversions that correspond to 100 parts	
Course Topic	**Activities Title**
Fractions	Fractions to Decimals
	Fractions to Decimals 2

6. Pupils solve measures problems involving different units	
Skill Quests	**Skills**
Solve measure problems with decimals	Equivalent measures to 3 decimal places Comparing/ordering units of mass to 3 decimal places Solving money problems, multiplication and division
Course Topic	**Activities Title**
Problem Solving	Fraction Length Models 2
	Money Problems: Four Operations with Pounds
Volume, Capacity and Mass	Capacity Word Problems
	Mass Word Problems

7. Pupils understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	
Skill Quests	**Skills**
Convert between metric and imperial units	Converting between metric and imperial (length)
	Converting between metric and imperial (capacity)

8. Pupils convert between miles and kilometres	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

9. Pupils solve problems involving converting between units of time	
Skill Quests	**Skills**
Convert units of time	Converting units of time
Course Topic	**Activities Title**
Time	What time will it be?
	Elapsed time
	Using timetables
	Time Mentals

Unit 10: Angles

1. Pupils compare the size of angles where there is a clear visual difference	
Skill Quests	**Skills**
Compare angles	Comparing angles
Course Topic	**Activities Title**
Properties of Shapes	Equal angles
Properties of Shapes	Comparing Angles

2. Pupils use the terms acute, obtuse and reflex when describing the size of angles or amount of rotation with relation to right angles	
Skill Quests	**Skills**
Classify angles	Classifying angles
Course Topic	**Activities Title**
Properties of Shapes	What type of Angle?
	Classifying Angles

3. Pupils use a unit called degrees (°) as a standard unit to measure angles	
Skill Quests	**Skills**
Measure angles	Measuring angles
Course Topic	**Activities Title**
Properties of Shapes	Measuring Angles

4. Pupils estimate the size of angles in degrees using angle sets	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

5. Pupils measure the size of angles accurately using a protractor	
Skill Quests	**Skills**
Measure angles	Measuring angles
Course Topic	**Activities Title**
Properties of Shapes	Measuring Angles

Year 6

Autumn

Unit 1: Calculating using knowledge of structures (1)

1. Pupils explain how a combination of different parts can be equivalent to the same whole and can represent this in an expression	
Skill Quests	**Skills**
Read and write numbers to 10 000 000	Using place value to partition 7-digit numbers
Course Topic	**Activities Title**
Number and Place Value	Partition and rename 3

2. Pupils identify structures within stories and use their knowledge of structures to create stories	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

3. Pupils identify the missing part using their knowledge of part whole relationships and structures	
Skill Quests	**Skills**
Read and write numbers to 10 000 000	Using place value to partition 7-digit numbers
Course Topic	**Activities Title**
Number and Place Value	Partition and rename 3

4. Pupils interpret and represent a part-whole problem with 3 addends using a model	
Course Topic	**Activities Title**
Number and Place Value	Partition and rename 3

5. Pupils create stories to correctly match a structure presented in a model	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

6. Pupils use their knowledge of additive structures to solve problems	
Skill Quests	**Skills**
Solve add/sub multi-step problems	Solving add/sub word problems
Solve problems with the 4 operations	Solving addition and subtraction word problems

Course Topic	Activities Title
Problem Solving	Order of operations 1 (BIDMAS)

7. Pupils calculate the value of a missing part (1)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

8. Pupils calculate the value of a missing part (2)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

9. Pupils correctly represent an equation in a part-whole model	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

10. Pupils explain how adjusting both addends affects the sum (2 digit numbers)	
Skill Quests	**Skills**
Check the accuracy of calculations	Checking accuracy, addition / subtraction

11. Pupils explain how adjusting both addends affects the sum (decimal fractions)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

12. Pupils use the ‘same sum’ rule to balance equations	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

13. Pupils use the ‘same sum’ rule to balance equations with an unknown	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

14. Pupils explain how adjusting one addend affects the sum	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

15. Pupils solve addition calculations mentally by using known facts	
Skill Quests	**Skills**
Perform mental calculations	Applying strategies for addition and subtraction

Course Topic	Activities Title
Add and Subtract	Negative or positive?
	Add integers
	Integers: Add and Subtract
	Add decimals 2

16. Pupils solve calculations with missing addends	
Course Topic	**Activities Title**
Patterns and Algebra	Find the missing number 2
	Missing numbers: Variables

17. Pupils explain how adjusting both the minuend and subtrahend by the same amount affects the difference	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

18. Pupils explain how using the 'same difference' rule can make mental calculation easier (1)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

19. Pupils explain how using the 'same difference' rule can make written calculation easier (2)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

20. Pupils use the 'same difference' rule to balance equations	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

21. Pupils explain how increasing or decreasing the minuend affects the difference (1)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

22. Pupils explain how increasing or decreasing the minuend affects the difference (2)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

23. Pupils solve subtraction calculations mentally by using known facts	
Skill Quests	**Skills**
Perform mental calculations	Applying strategies for addition and subtraction
Course Topic	**Activities Title**
Add and Subtract	Negative or positive?
	Integers: Add and Subtract
	Subtract decimals 2

24. Pupils explain how adjusting the minuend can make mental calculation easier	
Skill Quests	**Skills**
Perform mental calculations	Applying strategies for addition and subtraction

25. Pupils explain how adjusting the subtrahend affects the difference	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

26. Pupils explain how increasing or decreasing the subtrahend affects the difference	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

27. Pupils calculate the difference using their knowledge of an adjusted subtrahend (1)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

28. Pupils calculate the difference using their knowledge of an adjusted subtrahend (2)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

Unit 2: Multiples of 1000

1. Pupils explain how ten thousand can be composed	
Course Topic	**Activities Title**
Number and Place Value	Partition and rename 3
	Place Value - Millions

2. Pupils explain how one hundred thousand can be composed	
Course Topic	**Activities Title**
Number and Place Value	Partition and rename 3
	Place Value - Millions

3. Pupils read and write numbers up to one million (1)	
Skill Quests	**Skills**
Read and write numbers to 1,000,000	Reading and writing numbers to 1,000,00
Course Topic	**Activities Title**
Add and Subtract	Place Value - Millions

4. Pupils read and write numbers up to one million (2)	
Course Topic	**Activities Title**
Add and Subtract	Place Value - Millions

5. Pupils identify and place the position of five-digit multiple of one thousand numbers, on a marked, but unlabelled number line	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

6. Pupils identify and place the position of six-digit multiple of one thousand numbers, on a marked, but unlabelled number line	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

7. Pupils count forwards and backwards in steps of powers of 10, from any multiple of 1,000	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

8. Pupils explain that 10,000 is composed of 5,000s 2,500s and 2,000s	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

9. Pupils explain that 100,000 is composed of 50,000s 25,000s and 20,000s	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

10. Pupils read scales in graphing and measures contexts, by using their knowledge of the composition of 10,000 and 100,000	
Skill Quests	**Skills**
Identifying pie charts and line graphs	Interpreting and constructing line graphs

Unit 3: Numbers up to 10,000,000

1. Pupils use representations to identify and explain patterns in powers of 10	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

2. Pupils compose seven or eight-digit numbers using common intervals	
Skill Quests	**Skills**
Read and write numbers to 10 000 000	Reading and writing numbers to 10 000 000

3. Pupils use their knowledge of the composition of up to eight-digit numbers to solve problems	
Skill Quests	**Skills**
Read and write numbers to 10 000 000	Identifying place value up to 10 000 000
	Using place value to partition 7-digit numbers

4. Pupils explain how to read numbers with up to seven digits efficiently	
Skill Quests	**Skills**
Read and write numbers to 1 000 000	Reading and writing numbers to 1 000 000
Course Topic	**Activities Title**
Number and Place Value	Put in order 1
	Numbers from words to digits 1
	Numbers from words to digits 2
	Partition and rename 3
	Place Value – Millions

5. Pupils recognise and create numbers that contain place-holding zeroes	
Skill Quests	**Skills**
Reading and write numbers to 10 000 000	Identifying place value up to 10 000 000
	Using place value to partition 7-digit numbers
	Comparing and ordering numbers to 10 000 000
Course Topic	**Activities Title**
Number and Place Value	Put in order 1
	Numbers from words to digits 1
	Numbers from words to digits 2
	Partition and rename 3
	Place Value – Millions

6. Pupils determine the value of digits in numbers up to tens of millions	
Skill Quests	**Skills**
Reading and write numbers to 10 000 000	Identifying place value up to 10 000 000
	Using place value to partition 7-digit numbers
Course Topic	**Activities Title**
Number and Place Value	Put in order 1

	Numbers from words to digits 1
	Numbers from words to digits 2
	Partition and rename 3
	Place Value – Millions

7. Pupils explain how to compare up to eight-digit numbers	
Skill Quests	**Skills**
Reading and write numbers to 10 000 000	Comparing and ordering numbers to 10 000 000
Course Topic	**Activities Title**
Number and Place Value	Put in order 1
	Numbers from words to digits 1
	Numbers from words to digits 2
	Partition and rename 3
	Place Value – Millions

8. Pupils use their knowledge of the composition of seven-digit numbers to solve problems	
Course Topic	**Activities Title**
Patterns and Algebra	Number sequences up to 1 million

9. Pupils add and subtract mentally without bridging a boundary (only one and more than one digit changes)	
Skill Quests	**Skills**
Perform mental calculations	Applying strategies for addition and subtraction

10. Pupils add numbers whilst crossing the millions boundary	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

11. Pupils subtract numbers whilst crossing the millions boundary (multiples of 100,000 and different powers of 10)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

12. Pupils explain how a seven-digit number can be composed and decomposed into parts	
Skill Quests	**Skills**
Reading and write numbers to 10 000 000	Identifying place value up to 10 000 000
	Using place value to partition 7-digit numbers
Course Topic	**Activities Title**
Number and Place Value	Partition and rename 3

13. Pupils identify and explain a pattern in a counting sequence	
Skill Quests	**Skills**
Generate linear number sequences	Generating linear number sequences
	Finding the rule for a linear number sequence
	Finding the nth term of simple linear sequences

14. Pupils identify numbers with up to seven digits on marked number lines	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

15. Pupils estimate the value and position of numbers on unmarked or partially marked number lines	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

16. Pupils explain why we round and how to round seven-digit numbers to the nearest million	
Skill Quests	**Skills**
Round numbers of any size	Rounding numbers of any size
Course Topic	**Activities Title**
Number and Place Value	Rounding Numbers

17. Pupils explain how to round seven-digit numbers to the nearest hundred thousand	
Skill Quests	**Skills**
Round numbers of any size	Rounding numbers of any size
Course Topic	**Activities Title**
Number and Place Value	Rounding Numbers

18. Pupils explain how to round up to seven-digit numbers to any power of 10 in context	
Skill Quests	**Skills**
Round numbers of any size	Rounding numbers of any size
Course Topic	**Activities Title**
Number and Place Value	Rounding Numbers

19. Pupils identify and explain the most efficient way to solve a calculation	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

20. Pupils add and subtract numbers with up to seven digits using column addition and subtraction	
Course Topic	**Activities Title**
Add and Subtract	Add multi-digit numbers 2
	3-digit differences: 2 regroupings

21. Pupils explore and explain different written and mental strategies to solving addition and subtraction problems	
Skill Quests	**Skills**
Solve add/sub multi-step problems	Solving add/sub word problems
Solve problems with the 4 operations	Solving addition and subtraction word problems
Course Topic	**Activities Title**
Add and Subtract	Estimation: add and subtract

22. Pupils solve addition and subtraction problems and explain whether a mental or written strategy would be most efficient	
Skill Quests	**Skills**
Solve add/sub multi-step problems	Solving add/sub word problems
Solve problems with the 4 operations	Solving addition and subtraction word problems

Unit 4: Draw, compose and decompose shapes

1. Use knowledge of shape properties to draw, sketch and identify shapes	
Skill Quests	**Skills**
Identify regular and irregular polygons	Identifying regular and irregular polygons
Recognise and describe simple 3-D shapes	Describing and naming prisms and pyramids
	Investigating cross-sections of prisms and pyramids

2. The same 3D shape can be composed from different 2D nets	
Skill Quests	**Skills**
Identify 3-D shapes from 2-D representations	Connecting nets of 3-D shapes
Recognise and describe simple 3-D shapes	Connecting 3-D shapes with their nets
Course Topic	**Activities Title**
Properties of Shape	Nets

3. When a 2D shape is decomposed and the parts rearranged, the area remains the same. The area of a compound shape is therefore equal to the total of the areas of the constituent parts	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

4. Any parallelogram can be decomposed and the parts rearranged to form a rectangular parallelogram	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

5. Two congruent triangles can be composed to form a parallelogram	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

6. Shapes with the same area can have different perimeters. Shapes with the same perimeters can have different areas	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

7. We can use the relationship between area and side length, and perimeter and side length, to reason about measurements of shapes, including compound shapes	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

Spring

Unit 5: Multiplication and division

1. Pupils explain why the product stays the same when one factor is doubled and the other is halved	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor

2. Pupils explain the effect on the product when scaling the factors by the same amount	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values
	Pattern Rules and Tables

3. Pupils use their knowledge of equivalence when scaling factors to solve problems	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values
	Pattern Rules and Tables

4. Pupils explain the effect on the quotient when scaling the dividend and divisor by 10	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

5. Pupils explain the effect on the quotient when scaling the dividend and divisor by the same amount	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor

6. Pupils explain how to multiply a three-digit by a two-digit number	
Skill Quests	**Skills**
Multiply multi-digit numbers	Multiplying 3-digits by 2-digits: expanded form

7. Pupils explain how to accurately use the method of long multiplication to multiply two, two-digit numbers (no regrouping of ones to tens)	
Course Topic	**Activities Title**
Multiply and Divide Written	Long Multiplication

8. Pupils explain how to accurately use the method of long multiplication (with regrouping of ones to tens)	
Skill Quests	**Skills**
Multiply multi-digit numbers	Multiplying 3-digits by 2-digits: expanded form
	Multiplying 4-digits by 2-digits: algorithm
Course Topic	**Activities Title**
Multiply and Divide Written	Long Multiplication

9. Pupils explain how to accurately use the method of long multiplication (with regrouping of ones to tens & tens to hundreds)	
Skill Quests	**Skills**
Multiply multi-digit numbers	Multiplying 3-digits by 2-digits: expanded form
	Multiplying 4-digits by 2-digits: algorithm
Course Topic	**Activities Title**
Multiply and Divide Written	Long Multiplication

10. Pupils explain how to accurately use the method of long multiplication to multiply a three-digit by a two-digit number	
Skill Quests	**Skills**
Multiply multi-digit numbers	Multiplying 3-digits by 2-digits: expanded form

11. Pupils explain how to accurately use the method of long multiplication to multiply a four-digit by a two-digit number	
Skill Quests	**Skills**
Multiply multi-digit numbers	Multiplying 4-digits by 2-digits: algorithm

12. Pupils explain how to use the associative law to multiply efficiently	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

13. Pupils explain when it is more efficient to use long multiplication or factorising to multiply by two-digit numbers	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

14. Pupils explain how to use accurately the methods of short and long division (two and three-digit number by multiples of 10)	
Skill Quests	**Skills**
Divide by 2-digits, long division	Dividing by 2-digits, expanded form: long division
	Dividing by 2-digits, algorithm (long division)
Divide by 2 digits, short division	Dividing by 2-digits, algorithm (short division)
Course Topic	**Activities Title**
Multiply and Divide Written	Short Division
	Long Division

15. Pupils explain how to use accurately the method of long division with and without remainders (two-digit by two-digit numbers)	
Skill Quests	**Skills**
Divide by 2-digits, long division	Dividing by 2-digits, expanded form: long division
	Dividing by 2-digits, algorithm (long division)
Course Topic	**Activities Title**
Multiply and Divide Written	Long Division

16. Pupils use knowledge of long division to solve problems in a range of contexts (with and without remainders)	
Skill Quests	**Skills**
Solve problems with the 4 operations	Solving multiplication and division word problems
Course Topic	**Activities Title**
Multiply and Divide Written	Divide : 1-Digit Divisor 1
	Divide : 1-Digit Divisor, remainder
	Divide: 2-Digit Divisor, remainder
	Long Division

17. Pupils explain how to use a ratio chart to solve efficiently: short division	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

18. Pupils explain how to use a ratio chart to solve efficiently: long division	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

19. Pupils explain how to use a ratio chart to solve efficiently: long division (II)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

20. Pupils explain how to use accurately the method of long division with and without remainders (three-digit by two-digit, four-digit by two-digit numbers)	
Skill Quests	**Skills**
Divide by 2-digits, long division	Dividing by 2-digits, expanded form: long division
	Dividing by 2-digits, algorithm (long division)
Course Topic	**Activities Title**
Multiply and Divide Written	Long Division

21. Pupils use long division with decimal remainders (1 decimal place)	
Course Topic	**Activities Title**
Multiply and Divide Written	Long Division
	Divide: 1-Digit Divisor, remainder
	Divide: 2-Digit Divisor, remainder

22. Pupils use long division with fraction remainders	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

23. Pupils use long division with decimal remainders (2 decimal places)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

24. Pupils use knowledge of the best way to interpret and represent remainders from a range of division contexts	
Skill Quests	**Skills**
Solve problems with the 4 operations	Solving multiplication and division word problems

25. Pupils explain how and why a product changes when a factor changes multiplicatively	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values

26. Pupils use their knowledge of multiplicative change to solve problems efficiently (multiplication)	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios

Solve problems involving scale factor	Solving problems involving scale factor

27. Pupils explain how and why a quotient changes when a dividend changes multiplicatively (increase or decrease)	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor

28. Pupils explain how and why a quotient changes when a divisor changes multiplicatively	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor

29. Pupils identify and explain the relationship between divisors and quotients	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor

Unit 6: Area, perimeter, position and direction

1. Pupils explain how to calculate the area of a parallelogram	
Skill Quests	**Skills**
Area of parallelograms and triangles	Calculating the area of a parallelogram

2. Pupils explain how to calculate the area of a triangle	
Skill Quests	**Skills**
Area of parallelograms and triangles	Calculating the area of a triangle

3. Pupils explain why shapes can have the same perimeters but different areas	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

4. Pupils explain why shapes can have the same areas but different perimeters	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

5. Pupils describe the relationship between scale factors and side lengths of two shapes	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

6. Pupils describe the relationship between scale factors and perimeters of two shapes	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

7. Pupils describe positions on the full coordinate grid (all four quadrants)	
Skill Quests	**Skills**
Describe positions, 4 quadrants	Describing positions, 4 quadrants
Course Topic	**Activities Title**
Properties of Shape and Position	Co-ordinate Graphs
	Transformations
	Rotations
	Horizontal and Vertical Change

8. Pupils draw and translate simple shapes on the coordinate plane and reflect them in the axes	
Skill Quests	**Skills**
Describe positions, 4 quadrants	Drawing polygons on the coordinate grid
Translations and reflections, 4 quadrants	Reflections, 4 quadrants
	Understanding translations, 4 quadrants
Course Topic	**Activities Title**
Properties of Shape and Position	Horizontal and Vertical

Unit 7: Fractions and percentages

1. Pupils explain how to write a fraction in its simplest form	
Skill Quests	**Skills**
Use common factors and multiples	Using common factors to simplify proper fractions
Course Topic	**Activities Title**
Fractions	Ratio
	Simplifying Fractions

2. Pupils reason and apply their knowledge of how to write a fraction in its simplest form	
Skill Quests	**Skills**
Use common factors and multiples	Using common factors to simplify proper fractions
Course Topic	**Activities Title**
Fractions	Ratio
	Simplifying Fractions

3. Pupils use their knowledge of how to write a fraction in its simplest form when solving addition and subtraction problems (1)	
Skill Quests	**Skills**
Use common factors and multiples	Using common factors to simplify proper fractions
Add and subtract fractions	Adding fractions, related denominators
	Adding fractions unrelated denominators
	Subtracting fractions, related denominators
	Subtracting fractions unrelated denominators
	Adding/subtracting fractions, related denominators
	Add/subtract fractions unrelated denominators
Course Topic	**Activities Title**
Fractions Calculating	Add Unlike Fractions
	Add Unlike Mixed Numbers
	Subtract Unlike Fractions
	Subtract Unlike Mixed Numbers
	No Common Denominator

4. Pupils use their knowledge of how to write a fraction in its simplest form when solving addition and subtraction problems (2)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

5. Pupils use their knowledge of how to write a fraction in its simplest form when solving multiplication problems	
Skill Quests	**Skills**
Use common factors and multiples	Using common factors to simplify proper fractions
Multiply proper fractions	Multiplying proper fractions
Multiply decimals and whole numbers	Multiplying decimals and whole numbers
Course Topic	**Activities Title**
Fractions Calculating	Multiply Fraction by Fraction
	Multiply Two Fractions 1

6. Pupils explain, using an image, how to add related fractions (unit fractions)	
Skill Quests	**Skills**
Add and subtract fractions	Adding fractions, related denominators
	Adding/subtracting fractions, related denominators
Course Topic	**Activities Title**
Fractions Calculating	Add Like Fractions
Fractions Calculating	Add Like Mixed Numbers

7. Pupils explain what is meant by 'related fractions'	
Skill Quests	**Skills**
Add and subtract fractions	Adding fractions, related denominators
	Adding fractions unrelated denominators
	Subtracting fractions, related denominators
	Subtracting fractions unrelated denominators
	Adding/subtracting fractions, related denominators
	Add/subtract fractions unrelated denominators
Course Topic	**Activities Title**
Fractions Calculating	Add Like Fractions
Fractions Calculating	Add Like Mixed Numbers

8. Pupils explain, without using an image, how to add related fractions	
Skill Quests	**Skills**
Add and subtract fractions	Adding fractions, related denominators
	Adding/subtracting fractions, related denominators

9. Pupils use their knowledge of adding related fractions to solve problems in a range of contexts	
Course Topic	**Activities Title**
Problem Solving	More Fraction Problems

10. Pupils explain, with and without using an image, how to subtract related fractions (unit fractions)	
Skill Quests	**Skills**
Add and subtract fractions	Subtracting fractions, related denominators
	Adding/subtracting fractions, related denominators
Course Topic	**Activities Title**
Fractions Calculating	Subtract Like Fractions
Fractions Calculating	Subtract Like Mixed Numbers

11. Pupils use their knowledge of adding and subtracting related fractions to solve problems in a range of contexts	
Course Topic	**Activities Title**
Problem Solving	More Fraction Problems

12. Pupils explain, with and without using an image, how to add and subtract related fractions (non-unit fractions)	
Skill Quests	**Skills**
Add and subtract fractions	Adding fractions, related denominators
	Subtracting fractions, related denominators
	Adding/subtracting fractions, related denominators

13. Pupils explain, with and without using an image, how to add and subtract related fractions (non-unit fractions that bridge the whole)	
Skill Quests	**Skills**
Add and subtract fractions	Adding fractions, related denominators
	Subtracting fractions, related denominators
	Adding/subtracting fractions, related denominators

14. Pupils use their fraction sense to fraction addition, subtraction and comparison	
Skill Quests	**Skills**
Compare and order fractions	Comparing and ordering proper fractions
	Comparing and ordering mixed numbers
	Comparing and ordering improper fractions
	Comparing and ordering fractions and mixed numbers
Add and subtract fractions	Adding fractions, related denominators
	Subtracting fractions, related denominators
	Adding/subtracting fractions, related denominators
Course Topic	**Activities Title**
Fractions	Compare Fractions 2
	Comparing Fractions 2
Fractions Calculating	Subtract Like Mixed Numbers
	Add Like Mixed Numbers
	Add Unlike Fractions
	Add Unlike Mixed Numbers
	Subtract Unlike Fractions
	Subtract Unlike Mixed Numbers
	No Common Denominator
	Mixed Numerals

15. Pupils explain how to add or subtract non-related fractions with different denominators	
Skill Quests	**Skills**
Add and subtract fractions	Adding fractions unrelated denominators
	Subtracting fractions, unrelated denominators
	Add/subtract fractions unrelated denominators

Course Topic	Activities Title
Fractions Calculating	Add Unlike Fractions
	Subtract Unlike Fractions
	No Common Denominator

16. Pupils use their knowledge of adding or subtracting non-related fractions with different denominators to solve problems in a range of contexts (non related fractions)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

17. Pupils explain how to compare pairs of non-related fractions (converting to common denominators)	
Skill Quests	**Skills**
Compare and order fractions	Comparing and ordering proper fractions
	Comparing and ordering mixed numbers
	Comparing and ordering improper fractions
	Comparing and ordering fractions and mixed numbers

18. Pupils explain how to compare pairs of non-related fractions (using fraction sense)	
Skill Quests	**Skills**
Compare and order fractions	Comparing and ordering proper fractions
	Comparing and ordering mixed numbers
	Comparing and ordering improper fractions
	Comparing and ordering fractions and mixed numbers
Course Topic	**Activities Title**
Fractions	Compare Fractions 2
	Comparing Fractions 2

19. Pupils explain how to compare pairs of non-related fractions (using common numerators)	
Skill Quests	**Skills**
Compare and order fractions	Comparing and ordering proper fractions
	Comparing and ordering mixed numbers
	Comparing and ordering improper fractions
	Comparing and ordering fractions and mixed numbers

20. Pupils explain which method for comparing non-related fractions is most efficient	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

21. Pupils explain how to multiply two unit fractions	
Skill Quests	**Skills**
Multiply proper fractions	Multiplying proper fractions
Course Topic	**Activities Title**
Fractions Calculating	Multiplying Fraction by Fraction
	Multiply Two Fractions 1

22. Pupils explain how to multiply two non-unit fractions	
Skill Quests	**Skills**
Multiply proper fractions	Multiplying proper fractions
Course Topic	**Activities Title**
Fractions Calculating	Multiplying Fraction by Fraction
	Multiply Two Fractions 1

23. Pupils explain how to divide a unit fraction by a whole number	
Skill Quests	**Skills**
Divide proper fractions by whole numbers	Dividing proper fractions by whole numbers
Course Topic	**Activities Title**
Fractions Calculating	Divide Fractions: Visual model

24. Pupils explain how to divide a non-unit fraction by a whole number	
Skill Quests	**Skills**
Divide proper fractions by whole numbers	Dividing proper fractions by whole numbers
Course Topic	**Activities Title**
Fractions Calculating	Divide Fractions: Visual model

25. Pupils explain when and how to divide efficiently a fraction by a whole number	
Skill Quests	**Skills**
Divide proper fractions by whole numbers	Dividing proper fractions by whole numbers
Course Topic	**Activities Title**
Fractions Calculating	Divide Fractions: Visual model

26. Pupils explain what percent means	
Skill Quests	**Skills**
Introduce percentages	Introducing percentages

27. Pupils explain how to represent a percentage in different ways	
Skill Quests	**Skills**
Introduce percentages	Introducing percentages
Course Topic	**Activities Title**
Decimals and Percentages	Calculating Percentages (Mental)
	Calculating Percentages

28. Pupils explain how to convert percentages to decimals and fractions (with a denominator of 100)	
Skill Quests	**Skills**
Calculate percentages	Calculating simple percentages
Course Topic	**Activities Title**
Decimals and Percentages	Decimal to Percentage

29. Pupils explain how to convert a percentage to a fraction (without denominator of 100)	
Skill Quests	**Skills**
Solve percentage equivalence problems	Converting common fractions to percentages
Course Topic	**Activities Title**
Decimals and Percentages	Percentage to Fraction

30. Pupils use their knowledge of fraction-decimal-percentage conversions to solve conversion problems in a range of contexts	
Course Topic	**Activities Title**
Problem Solving	Percentage Word Problems

31. Pupils use their knowledge of calculating 50%, 10% and 1% of a number to solve problems in a range of contexts	
Skill Quests	**Skills**
Calculate percentages	Calculating simple percentages
Course Topic	**Activities Title**
Problem Solving	Percentage Word Problems

32. Pupils use their knowledge of calculating common percentages of a number to solve problems in a range of contexts	
Course Topic	**Activities Title**
Problem Solving	Percentage Word Problems

33. Pupils use their knowledge of calculating any percentage of a number to solve problems in a range of contexts	
Course Topic	**Activities Title**
Problem Solving	Percentage Word Problems

34. Pupils explain how to solve problems where the percentage part and the size of the part is known and the whole is unknown	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

35. Pupils explain how to solve problems where the known percentage part and the size of the part changes the whole	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

Summer

Unit 8: Statistics

1. Interpret and construct pie charts and line graphs and use these to solve problems	
Skill Quests	**Skills**
Identifying pie charts and line graphs	Interpreting and constructing pie charts
	Interpreting and constructing line graphs
Course Topic	**Activities Title**
Statistics	Travel Graphs
	Pie Charts

2. Calculate and interpret the mean as an average	
Skill Quests	**Skills**
Calculate and interpret the mean	Calculating and interpreting the mean
Course Topic	**Activities Title**
Statistics	Finding the Average
	Mean

Unit 9: Ratio and proportion

1. Pupils describe the relationship between two factors (in a ratio context)	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Solve problems with unequal quantities	Solving problems involving unequal quantities

2. Pupils explain how to use multiplication and division to calculate unknown values (two variables)	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Solve problems with unequal quantities	Solving problems involving unequal quantities
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values Missing Numbers: Variables

3. Pupils explain how to use multiplication and division to calculate unknown values (three variables)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

4. Pupils explain how to use a ratio grid to calculate unknown values	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Solve problems with unequal quantities	Solving problems involving unequal quantities
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values

5. Pupils explain how to use multiplication to solve correspondence problems	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Solve problems with unequal quantities	Solving problems involving unequal quantities
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values

6. Pupils explain how and why scaling is used to make and interpret maps	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Solve problems with unequal quantities	Solving problems involving unequal quantities

7. Pupils will use their knowledge of multiplication and division to solve scaling problems in a range of contexts	
Skill Quests	**Skills**
Solve problems involving ratios	Solving problems involving ratios
Solve problems involving scale factor	Solving problems involving scale factor
Solve problems with unequal quantities	Solving problems involving unequal quantities

Course Topic	Activities Title
Patterns and Algebra	Table of Values
Properties of Shape and Position	Scale
	Scale Measurement

8. Pupils identify and describe the relationship between two shapes using scale factors (squares)	
Course Topic	**Activities Title**
Properties of Shape and Position	Scale
	Scale Measurement

9. Pupils identify and describe the relationship between two shapes using scale factors and ratios (regular polygons)	
Course Topic	**Activities Title**
Properties of Shape and Position	Scale
	Scale Measurement

10. Pupils identify and describe the relationship between two shapes using scale factors and ratios (irregular polygons)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

Unit 10: Calculating using knowledge of structures (2)

1. Pupils explain how to balance equations with addition expressions	
Skill Quests	**Skills**
Write and solve missing number problems	Writing and solving equations
Course Topic	**Activities Title**
Patterns and Algebra	Find the Missing Number 2

2. Pupils explain how to balance equations with subtraction expressions	
Skill Quests	**Skills**
Write and solve missing number problems	Writing and solving equations
Course Topic	**Activities Title**
Patterns and Algebra	Find the Missing Number 2

3. Pupils explain how to balance equations with addition or subtraction expressions	
Skill Quests	**Skills**
Write and solve missing number problems	Writing and solving equations

Course Topic	Activities Title
Patterns and Algebra	Find the Missing Number 2

4. Pupils use their knowledge of balancing equations to solve problems	
Skill Quests	**Skills**
Write and solve missing number problems	Writing and solving equations
Course Topic	**Activities Title**
Patterns and Algebra	Find the Missing Number 2

Unit 11: Solving problems with two unknowns

1. Pupils compare the structure of problems with one or two unknowns	
Skill Quests	**Skills**
Equations with 2 unknowns	Equations with 2 unknowns
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values
	Pattern Rules and Tables
	Find the Missing Number 2
	Missing Numbers: Variables
Problem Solving	Missing Values: Decimals

2. Pupils compare the structure of problems with two unknowns	
Skill Quests	**Skills**
Equations with 2 unknowns	Equations with 2 unknowns
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values
	Pattern Rules and Tables

3. Pupils represent the structure of contextual problems with two unknowns	
Skill Quests	**Skills**
Equations with 2 unknowns	Equations with 2 unknowns

4. Pupils represent a problem with two unknowns using a bar model	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

5. Pupils explain why sometimes there is only one solution to a sum and difference problem	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

6. Pupils explain why sometimes there is only one solution to a sum and multiple problem	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

7. Pupils explain the values a part-whole model could represent	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

8. Pupils use a bar model to visualise how to solve a problem with two unknowns	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

9. Pupils use diagrams to explain how to solve a spatial problem	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

10. Pupils explain how to represent an equation with a bar model	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

11. Pupils solve problems with two unknowns in a range of contexts	
Skill Quests	**Skills**
Equations with 2 unknowns	Equations with 2 unknowns
Course Topic	**Activities Title**
Patterns and Algebra	Table of Values
	Pattern Rules and Tables

12. Pupils systematically solve problems with two unknowns using 'trial and improvement' (one and several solutions)	
Skill Quests	**Skills**
Equations with 2 unknowns	Equations with 2 unknowns

13. Pupils explain how I know I have found all possible solutions to problems with two unknowns	
Skill Quests	**Skills**
Equations with 2 unknowns	Equations with 2 unknowns
Course Topic	**Activities Title**
Patterns and Algebra	How Many Combinations?

14. Pupils explain how to balance an equation with two unknowns	
Skill Quests	**Skills**
Equations with 2 unknowns	Equations with 2 unknowns
Write and solve missing number problems	Writing and solving equations

15. Pupils systematically solve problems with two unknowns using 'trial and improvement' (one, several and infinite solutions)	
Skill Quests	**Skills**
Equations with 2 unknowns	Equations with 2 unknowns

Unit 12: Order of operations

1. Pupils explain how addition and subtraction can help to solve multiplication problems efficiently (I)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

2. Pupils explain how addition and subtraction can help to solve multiplication problems efficiently (II)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

3. Pupils explain how the distributive law applies to multiplication expressions with a common factor (addition)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

4. Pupils use their knowledge of the distributive law to solve equations including multiplication, addition and subtraction	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

5. Pupils explain how addition and subtraction can help to solve division problems efficiently	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

6. Pupils explain how the distributive law applies to division expressions with a common divisor (addition)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

7. Pupils explain how the distributive law applies to division expressions with a common divisor (subtraction)	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

8. Pupils use their knowledge of the distributive law to solve equations including division, addition and subtraction	
Course Topic	**Activities Title**
Teacher directed	Teacher directed

Unit 13: Mean average

1. Pupils explain the relationship between the mean and sharing equally	
Skill Quests	**Skills**
Calculate and interpret the mean	Calculating and interpreting the mean

2. Pupils explain how to calculate the mean of a set of data	
Skill Quests	**Skills**
Calculate and interpret the mean	Calculating and interpreting the mean

3. Pupils explain how the mean changes when the total quantity or number of values changes	
Skill Quests	**Skills**
Calculate and interpret the mean	Calculating and interpreting the mean

4. Pupils explain how to calculate the mean when one of the values in the data set is zero or missing	
Skill Quests	**Skills**
Calculate and interpret the mean	Calculating and interpreting the mean

5. Pupils explain how to use the mean to make comparisons between two sets of information	
Skill Quests	**Skills**
Calculate and interpret the mean	Calculating and interpreting the mean

6. Pupils explain when the mean is not an appropriate representation of a set of data	
Skill Quests	**Skills**
Calculate and interpret the mean	Calculating and interpreting the mean

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