Transformation
Trust Primary Academy


## Iceni Primary Academy Maths Long Term Plan

## Maths planning at Iceni Academy Hockwold

| Class | Year | Scheme of learning followed | Notes |
| :---: | :---: | :--- | :--- |
| Acorn | $\mathbf{R}$ | White Rose Maths scheme of learning |  |
| Willow | $\mathbf{1}$ | White Rose scheme of learning version 3.0 |  |
| Elm | $\mathbf{2}$ | White Rose scheme of learning version 3.0 |  |
| Beech | $3 / 4$ | White Rose scheme of learning version 3.0 mixed age teaching | Beech and Oak use v2.0's pacers because the mixed age |
| Oak | $5 / 6$ | White Rose scheme of learning version 3.0 mixed age teaching | content remains aligned more frequently than v3.0. |

Years 1-6 will use White Rose 'small steps' which the subject leader has collated into one side-by-side document to demonstrate progression and aid adaptive teaching.
Daily Assessment for Learning is carried out in all classes to determine if a 'small step' can be moved on from and if resources/strategies other than those suggested by White Rose can be utilised effectively before moving on.
Resources and strategies chosen by teachers for their known effectiveness in teaching a small step will also be used.
NB Using White Rose version 3.0 small steps as a basis for teaching has been chosen as a new scheme of learning for our Academy from September 2022 for the following reasons:

- EEF recommendations about using manipulatives, concrete resources and representations more across all year groups
- Being able to combine Assessment for Learning with taking small steps and consolidating them as needed
- A consistent language of maths across the school
- Subject leader investigation into our previous Long Term Plan's interlocking at key termly assessment points using NTS tests; research into White Rose's fit with our testing arrangements demonstrated our bespoke Long Term Plan was no longer fit for purpose
- Preferred by Early Career Teachers and staff new to the school because of the additional planning and resourcing ideas in one place

Supporting documents: White Rose 'ready to progress' document which maps the national curriculum across years 1-6 for each topic against where it is covered within the small steps; White Rose Year 1-6 Calculation Policies for Addition and Subtraction/Multiplication and Division; Third Space Learning's 'The Ultimate Maths Vocabulary List' for Years 1-6 with definitions.
Our new Maths Long Term Plan is a working document; once new 'small steps' are published for the next term they will be added as below

| Progression colour key: | Autumn Term colour | Spring Term colour | Summer Term colour |
| :--- | :---: | :---: | :---: |

EEF's Summary of recommendations for improving Maths in EYFS and KS1 (2020)

## 1

Develop practitioners understanding of how children learn mathematics
 be used to raise the quaity of practitioner' knowedge of mathematics, of children's mathematical development and of etfective mathematica pedagogy.

- Developmenta progressions show us how children typically learn mathernatical concepts and can inform teaching.
- Practitioners should be aware that developing a secure grasp of early mathernatical ideas takes time, and specific skdls mas emerge in dfferent orders.
- The developmert of selfregulation and metacogritive skils are inked to successtul learning in early mathematics.

2
Dedicate time for children to learn mathematics and integrate mathematics throughout the day


- Dedicate time to focus on mathematics each day.
- Explore mathematics through different contexts, including storybooks, puzzles, songs. rtymes, puppet play, and games
- Make the most of moments ttroughout the day to highight and use mathematics, for example, in daily routines, play activities, and other curriculum aress.
- Seize chances to reinforce mathematical vocabulary.
- Create opporturities for extended discussion of
mathematical ideas with children.


## 3

Use manipulatives and representations to develop understanding


- Manipulatives and representations can be powerful tools for supporting young children to engage with mathematical ideas
- Ensure that children understand the inks between the manioulatives and the mathematical ideas they represent.
- Ensure that there is a dear rationale for using a particular manipuative or representation to teach a specific mathematical concept.
- Encourage children to represent problems in ther onn way, for example with drawings and marks.
- Use manipulatives and representations to encourage discussion about mathematics
- Encourage children to use their fingers-an important maripuiative for children.

4
Ensure that teaching builds on what children already know


- It is important to assess what ctiidren do, and do not, know in order to extend learring for al children.
- A variety of methods should be used to assess children's mathematical understanding, and practifioners should check what children know in a variety of contexts.
- Careluly listen to childreri's responses and conside the right questions to ask to reveal understanding.
- Information colected should be used to inform next steps for teaching. Develcomental progressions can be useful in informing decisions around what a child should learn next.


## 5

Use high quality targeted support to help all children tearn mathematics


- High quality targeted suppor can provide effective extra support for ctildren

Smal-group support is more likely to be effective wherr
a. criidren with the greatest needs are supported by the most experienced staft;
b. training, support and resources are provided for staff using targeted activities;
c. sessions are brief and regular
d. explicit comections are made between targeted support and everyday activities or teaching.

- Using an approach or programme that is evidencebased and has been independently evaluated is a good starting point.


## 1 <br> Use assessment to build on pupls: and understandiny

- Assmsmant should be used not only to track puplas' iosming but also to provide trachers with teachers with
information abou riormanon about do not hrow
- This shouid inform the plarring of future lessores and the focus of
targated surport
- Effoctive foochadik wil be an important elament of taschers' resporse to asseremert
- Foodback should be spocifo and clear, encourage and spport furter effort, and be givan sparingy
- Teachers nat orily have to adhress mboancoptions but also
undorstand vity pupis may persist whin arars
- Knowlodga of cormon mbeanceptions inplarninglessors nplarninglessons before fnoy arise

Use manipulatives
and representations

- Maripulthves (physical cbliocts usod to toach mathe) and mapresentations iepresentanars such as nurtber can help pupls angrep wh angage wh marnorm
- However, maripulatives and mpresentations we pat tods: how somartal
- Thay noad to be sod purposerily and asprocribtaly to have an irpact
- There muzt boa doar nationale for zaing a partoular mariplitive or mprosontation to trach a spoctic mathomatcal conoept
- Maripuitivas shoud be tamporary, froy should act as a be memovod anco ndependarce is achioved


Enable pupils to develop a mathetwork of knowledoe

- Emphasise the mary comections botvoon mathernatical facts, procodire: tacts, procedir
- Ersura trat pupla dovilop fuart rocall of facts
- Tach pupls to undorstand procodurs
* Tach pupls to consciouely croces botwoen mathernatical stratogios
- Buition puples' iforma understanding of staring and proporionality to introdice procodurs
- Tasch pupis trat Tasch pupts t docimsta edand dacmuse ar the numbar syatam beyanci
- Tanch pupla Tasch pupls to recognis and use structure


## 5

Develop pupils independence

- Encourage pupls to take resporsblity for, and play an active rolo n, ther own learing
* This roquiras pupis to dovelop motacogrition the asaily to indeponidenty play montor and valume ther thirking and baring
Iritally, taschers may hive to model motacogrition by doscrbing fine own thiring
* Atovido rogiar opportuntios for pupls to dovolop metacogrition by ancouraging them to eqpitin thet thirting femsokes and others
Aocid doing too much too naty
- Poathe ath rids are Impotant, but forels mpart evidorce on the sart evidericeron the fositer them
- Schod logeses hai onsere that all stath including ron toacting thff, encourage anjoyment in mates tor all ctildan


Support pupils to make a successful orimary and primary and

* Thare ts a large dip in mathernatical In mathernatical athanmartand muthe sas childron move from primary to move fromiry school
Pirmary and seconday schooks shoud dovelop sharod umbistroirns of and loarning
- When pupls arive in Yoar 7, quichly attain a good understanding, of thei strongths and woskiness
- Stuctrod Intavartion support masy be required for Year 7 pupts who srestroging to make progross
- Carchilly corsidar how pults are allocatod to muths cluses
- Sottingis libaly to load to a widoring of the atainment grop botwoen dsadvantaged pulis dsadanthgod and ther poors, bacamore lively to be assigned to be assigned lower groups


## Acorn Class



Getting to know you
(Take this time to play and get to know the children!)

Contains overviews and frequently asked questions

VIEW

## Alive in 5!

Introducing zero
Comparing numbers to 5
Composition of 4 \& 5
Compare mass (2)
Compare capacity (2)

VIEW

## To 20 and beyond

Build numbers beyond 10
Count patterns beyond 10
Spatial reasoning 1
Match, rotate, manipulate

## Just like me!

Match and sort
Compare amounts
Compare size, mass \&
capacity
Exploring pattern

## Growing 6, 7, 8

$6,7 \& 8$
Combining two amounts
Making pairs
Length \& height
Time (2)
VIEW

## It's me 1, 2, 3!

Representing 1, 2 \& 3
Comparing 1, 2 \& 3
Composition of $1,2 \& 3$
Circles and triangles
Positional language

## Light \& dark

Representing numbers to 5
One more or less
Shapes with 4 sides
Time

## Building 9 \& 10

Counting to $9 \& 10$
Comparing numbers to 10
Bonds to 10
Consolidation
3-D shapes
Spatial awareness
Patterns
VIEW

## First, then, now

Adding more
Taking away
Spatial reasoning 2
Compose and decompose

## Willow Class



Elm Class


Beech Class Y3/4


Oak Class Y4/5


Oak Class Y5/6 (2)


## Place Value Progression (EYFS with KS1 from p25)

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Roman numerals | Roman numerals to 1,000 |  |
| Sort objects | Numbers to 20 | Represent numbers to 100 | Represent numbers to 1,000 | Numbers to 10,000 | Numbers to 1,000,000 <br> Numbers to 10,000,000 |
| Count objects | Count objects to 100 by making 10s | Partition numbers to 100 | Partition numbers to 1,000 | Numbers to 100,000 |  |
| Count objects from a larger group | Recognise 10 and 1s | Number line to 100 | Number line to 1,000 | Numbers to 1,000,000 |  |
| Represent objects | Use a place value chart | Hundreds | Thousands | Read and write numbers to 1,000,000 | Read and write numbers to 10,000,000 |
| Recognise number as words | Partition numbers to 100 | Represent numbers to 1,000 | Represent numbers to 10,000 | Powers of 10 | Powers of 10 |
| Count on from any number | Write numbers to 100 in words | Partition numbers to 1,000 | Partition numbers to 10,000 | 10/100/1,000/10,000/100,000 <br> more or less |  |
| 1 more | Flexibly partition numbers to 100 | Flexible partitioning of numbers to 1,000 | Flexible partitioning of number to 10,000 | Partition numbers to $1,000,000$ |  |
| Count backwards within 10 | Write numbers to 100 in expanded form | Hundreds, tens and ones | Find 1, 10, 100, 1,000 less | Number line to 1,000,000 | Number line to 10,000,000 |
| 1 less |  | Find 1,10 or 100 more or less | Number line to 10,000 | Compare and order numbers to 100,000 | Compare and order any integers |
| Compare groups by matching | 10s on the number line to 100 | Number line to 1,000 | Estimate on a number line to 10,000 | Compare and order numbers to $1,000,000$ |  |
| Fewer, more, same | 10s and 1s on the number line to 100 | Compare numbers to 1,000 | Compare numbers to 10,000 |  | Round any integer |
| Less than, greater than, equal to | Estimate numbers on a number line | Order numbers to 1,000 | Order numbers to 10,000 |  |  |
| Compare numbers | Compare objects | Count in 50s |  |  |  |
| Order objects and numbers | Order objects and numbers |  | Round to the nearest 10 | Round to the nearest 10, 100 or 1,000 |  |
| The number line | Count in 2s, 5s, 10s |  | Round to the nearest 100 | Round within 100,000 |  |
| Count within 20 | Count in 3s |  | Round to the nearest 1,000 | Round within 1,000,000 |  |
| Understand 10 |  |  | Round to the nearest 10,100 or 1,000 |  |  |
| Understand 11, 12 and 13 |  |  |  | Understand negative numbers | Negative numbers |
| Understand 14, 15 and 16 |  |  |  | Count through zero in 1s |  |
| Understand 17, 18 and 19 |  |  |  | Count through zero in multiples |  |
| Understand 20 |  |  |  | Compare and order negative numbers |  |
| 1 more and 1 less |  |  |  | Find the difference |  |
| The number line to 20 |  |  |  |  |  |
| Use a number line to 20 |  |  |  |  |  |


| Estimate on a number line to 20 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Compare numbers to 20 |  |  |  |  |  |
| Order numbers to 20 |  |  |  |  |  |
| Count from 20 to 50 |  |  |  |  |  |
| 20, 30, 40 and 50 |  |  |  |  |  |
| Count by making groups of tens |  |  |  |  |  |
| Groups of tens and ones |  |  |  |  |  |
| Partition into tens and ones |  |  |  |  |  |
| The number line to 50 |  |  |  |  |  |
| Estimate on a number line to 50 |  |  |  |  |  |
| 1 more, 1 less |  |  |  |  |  |
| Count from 50 to 100 |  |  |  |  |  |
| Tens to 100 |  |  |  |  |  |
| Partition into tens and ones |  |  |  |  |  |
| The number line to 100 |  |  |  |  |  |
| 1 more, 1 less |  |  |  |  |  |
| Compare numbers with the same number of tens |  |  |  |  |  |
| Compare any two numbers |  |  |  |  |  |

## Addition and Subtraction Progression

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Mental strategies |  |
| Introduce parts and wholes | Bonds to 10 | Apply number bonds within 10 | Add and subtract 1s, 10s, 100s and 1000s | Add whole numbers with more than four digits | Add and subtract integers |
| Part-whole model | Face families - addition and subtraction bonds within 20 | Add and subtract 1s | Add up to two 4-digit numbers - no exchange | Subtract whole numbers with more than four digits |  |
| Write number sentences | Related facts | Add and subtract 10s | Add two 4-digit numbers one exchange | Round to check answers |  |
| Fact families - addition facts | Bonds to 100 (tens) | Add and subtract 100s | Add two 4-digit numbers more than one exchange | Inverse operation + and - |  |
| Number bonds within 10 | Add and subtract 1s | Spot the pattern | Subtract two 4-digit numbers - no exchange | Multi-step + and - problems |  |
| Systematic number bonds within 10 | Add by making 10 | Add 1s across a 10 | Subtract two 4-digit numbers <br> - one exchange | Compare calculations |  |
| Number bonds to 10 | Add three 1-digit numbers | Add 10s across a 100 | Subtract two 4-digit numbers <br> - more than one exchange | Find missing numbers |  |
| Addition - add together | Add to the next 10 | Add 10s across a 100 | Efficient subtraction |  |  |
| Addition - add more | Add across 10 | Subtract 1s across a 10 | Estimate answers |  |  |
| Addition problems | Subtract across 10 | Subtract 10s across a 100 | Checking strategies |  |  |
| Find a part | Subtract from a 10 | Make connections |  |  |  |
| Subtraction - find a part | Subtract a 1-digit number from a 2-digit number (across a 10) | Add two numbers (no exchange) |  |  |  |
| Fact families - the eight facts | 10 more, 10 less | Add two numbers (across a 10) |  |  |  |
| Subtraction - take away/cross out (How many left?) | Add and subtract 10s | Add two numbers (across a 100) |  |  |  |
| Take away (How many left?) | Add two 2-digit numbers (not across a 10) | Subtract two numbers (across a 10) |  |  |  |
| Subtraction on a number line | Add two 2-digit numbers (across a 10) | Subtract two numbers (across a 100) |  |  |  |
| Add or subtract 1 or 2 | Subtract two 2-digit numbers (not across a 10) | Add 2-digit and 3-digit numbers |  |  |  |
| Add by counting on within 20 | Subtract two 2-digit numbers (across a 10) | Subtract a 2-digit number from a 3-digit number |  |  |  |
| Add ones using number bonds | Mixed addition and subtraction | Complements to 100 |  |  |  |
| Find and make number bonds to 20 | Compare number sentences | Estimate answers |  |  |  |
| Doubles | Miss number problems | Inverse operations |  |  |  |


| Near doubles | Make decisions |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Subtract ones using number bonds |  |  |  |  |
| Subtraction - counting back |  |  |  |  |
| Subtraction - finding the difference |  |  |  |  |
| Related facts |  |  |  |  |
| Missing number problems |  |  |  |  |

## Multiplication and Division Progression

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Count in 2 s | Recognise equal groups | Multiplication - equal groups | Multiples of 3 | Multiples | Common multiples |
| Count in 10s | Make equal groups | Use arrays | Multiply and divide by 6 | Common multiples |  |
| Count in 5s | Add equal groups | Multiples of 2 | 6 times-table and division facts | Factors | Common factors |
| Recognise equal groups | Introduce the x symbol | Multiples of 5 and 10 | Multiply and divide by 9 | Common factors |  |
| Add equal groups | Multiplication sentences | Sharing and grouping | 9 times-table and division facts | Prime numbers | Primes to 100 |
| Make arrays | Use arrays | Multiply by 3 | The 3, 6 and 9 times tables | Square numbers | Square and cube numbers |
| Make doubles | Make equal groups - grouping | Divide by 3 | Multiply and divide by 7 | Cube numbers |  |
| Make equal groups - grouping | Make equal groups - sharing | The 3 times-table | 7 times-table and division facts | Multiply by 10, 100 and 1,000 |  |
| Make equal groups - sharing. | The 2 times-table | Multiply by 4 | 11 times-table and division facts | Divide by 10, 100, 1,000 |  |
|  | Divide by 2 | Divide by 4 | 12 times-table and division facts | Multiples of 10, 100, 1,000 |  |
|  | Doubling and halving | The 4 times-table | Multiply by 1 and 0 | Multiply up to a 4-digit number by a 1-digit number | Rules of divisibility |
|  | Odd and even numbers | Multiply by 8 | Divide a number by 1 and itself | Multiply a 2-digit number by a 2-digit number (area model) | Multiply up to a 4-digit number by a 2-digit number |
|  | The 10 times table | Divide by 8 | Multiply three numbers | Multiply a 2-digit number by a 2-digit number | Solve problems with multiplication |
|  | Divide by 10 | The 8 times-table | Factor pairs | Multiply a 3-digit number by a 2-digit number | Short division |
|  | The 5 times table | The 2, 4 and 8 times-tables | Use factor pairs | Multiply a 4-digit number by a 2-digit number | Division using factors |
|  | Divide by 5 | Multiples of 10 | Multiply by 10 | Solve problems with multiplication | Introduction to long division |
|  | The 5 and 10 times tables | Related calculations | Multiply by 100 | Short division | Long division with remainders |
|  |  | Reasoning about multiplication | Divide by 10 | Divide a 4-digit number by a 1-digit number | Solve problems with division |
|  |  | Multiply a 2-digit number by a 1-digit number - no exchange | Divide by 100 | Divide with remainders | Solve multi-step problems |
|  |  | Multiply a 2-digit number by a 1-digit number - with exchange | Related facts - multiplication and division | Efficient division | Order of operations |
|  |  | Link multiplication and division | Informal written methods for multiplication | Solve problems with multiplication and division | Mental calculations and estimation |



| Fractions Progression |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Recognise a half of an object or a shape | Introduction to parts and whole | Understand the denominators of unit fractions | Understand the whole | Find fractions equivalent to a unit fraction | Equivalent fractions and simplifying <br> Equivalent fractions on a number line |
| Find a half of an object or a shape | Equal and unequal parts | Compare and order unit fractions | Count beyond 1 | Find fractions equivalent to a non-unit fractions |  |
| Recognise a half of a quantity | Recognise a half | Understand the numerators of non-unit fractions | Partition a mixed number | Recognise equivalent fractions |  |
| Find a half of a quantity | Find a half | Understand the whole | Number lines and mixed numbers | Convert improper fractions to mixed numbers |  |
| Recognise a quarter of an object or a shape | Recognise a quarter | Compare and order non-unit fractions | Compare and order mixed numbers | Convert mixed numbers to improper fractions |  |
| Find a quarter of an object or a shape | Find a quarter | Fractions and scales | Understand improper fractions | Compare fractions less than 1 | Compare and order (denominator) Compare and order (numerator) |
| Recognise a quarter of a quantity | Recognise a third | Fractions on a number line | Convert mixed numbers to improper fractions | Order fractions less than 1 |  |
| Find a quarter of a quantity | Find a third | Count in fractions on a number line | Convert improper fractions to mixed numbers | Compare and order fractions greater than 1 |  |
|  | Find the whole | Equivalent fractions on a number line | Equivalent fractions on a number line | Add and subtract fractions within the same denominator | Add and subtract simple fractions <br> Add and subtract any two fractions <br> Add mixed numbers Subtract mixed numbers |
|  | Unit fractions | Equivalent fractions as bar models | Equivalent fraction families | Add fractions within 1 |  |
|  | Non-unit fractions | Add fractions | Add two or more fractions | Add fractions with total greater than 1 |  |
|  | Recognise the equivalence of a half and two-quarters | Subtract fractions | Add fractions and mixed numbers | Add to a mixed number |  |
|  | Recognise three-quarters | Partition the whole | Subtract two fractions | Add two mixed numbers |  |
|  | Find three-quarters | Unit fractions of a set of objects | Subtract from whole amounts | Subtract fractions |  |
|  | Count in fractions up to a whole | Non-unit fractions of a set of objects | Subtract from mixed numbers | Subtract from a mixed number |  |
|  |  | Reasoning with fractions of an amount | Tenths as fractions | Subtract from a mixed number - breaking the whole |  |
|  |  |  | Tenths as decimals | Subtract two mixed fractions |  |
|  |  |  | Tenths on a place value chart | Multiply a unit fraction by an integer | Multi-step problems |
|  |  |  | Tenths on a number line | Multiply a non-unit fraction by an integer |  |
|  |  |  | Divide a 1-digit number by 10 | Multiply a mixed number by an integer | Multiply fractions by integers |


|  |  |  | Divide a 2-digit number by 10 | Calculate a fraction of a quantity | Multiply fractions by fractions |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Hundredths as fractions | Fraction of an amount | Divide a fraction by an integer |
|  |  |  | Hundredths as decimals | Find the whole | Divide any fraction by an integer |
|  |  |  | Hundredths on a place value chart | Use fractions as operators | Mixed questions with fractions |
|  |  |  | Step 10 Divide a 1- or 2-digit number by 100 | Decimals up to 2 decimal places | Fraction of an amount |
|  |  |  | Make a whole with tenths | Equivalent fractions and decimals (tenths) | Fraction of an amount - find the whole |
|  |  |  | Make a whole with hundredths | Equivalent fractions and decimals (hundredths) | Ratio |
|  |  |  | Partition decimals | Equivalent fractions and decimals | Add or multiply? |
|  |  |  | Flexibly partition decimals | Thousandths as fractions | Use ratio language |
|  |  |  | Compare decimals | Thousandths as decimals | Introduction to the ratio symbol |
|  |  |  | Order decimals | Thousandths on a place value chart | Ratio and fractions |
|  |  |  | Round to the nearest whole number | Order and compare decimals (same number of decimal places) | Scale drawing |
|  |  |  | Halves and quarters as decimals | Order and compare any decimals with up to 3 decimal places | Use scale factors |
|  |  |  |  | Round to the nearest whole number | Similar shapes |
|  |  |  |  | Round to 1 decimal place | Ratio problems |
|  |  |  |  | Understand percentages | Proportion problems |
|  |  |  |  | Percentages as fractions | Recipes |
|  |  |  |  |  | Decimals continued |
|  |  |  |  | Percentages as decimals | Place value within 1 |
|  |  |  |  | Equivalent fractions, decimals and percentages | Place value - integers and decimals |
|  |  |  |  | Use known facts to add and subtract decimals within 1 | Round decimals |
|  |  |  |  | Complements to 1 | Add and subtract decimals |
|  |  |  |  | Add and subtract decimals across 1 | Multiply by 10, 100 and 1,000 |
|  |  |  |  | Add decimals with the same number of decimal places | Divide by 10, 100 and 1,000 |


|  |  |  |  | Subtract decimals with the same number of decimal places | Multiply decimals by integers |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Add decimals with different numbers of decimal places | Divide decimals by integers |
|  |  |  |  | Subtract decimals with different numbers of decimal places | Multiply and divide decimals in context |
|  |  |  |  | Efficient strategies for adding and subtracting decimals | Decimal and fraction equivalents |
|  |  |  |  | Decimal sequences | ractions as division |
|  |  |  |  | Multiply by 10, 100 and 1,000 | Understand percentages |
|  |  |  |  | Divide by 10,100 and 1,000 | Fractions to percentages |
|  |  |  |  | Multiply and divide decimals missing values | Equivalent fractions, decimals and percentages |
|  |  |  |  |  | Order fractions, decimals and percentages |
|  |  |  |  |  | Percentage of an amount one step |
|  |  |  |  |  | Percentage of an amount -multi-step |

## Measures Progression

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Compare lengths and heights | Count money - pence | Measure in metres and centimetres | What is area? |  | Metric measures |
| Measure length using objects | Count money - pounds (notes and coins) | Measure in millimetres | Count squares |  | Convert metric measures |
| Measure length in centimetres | Count money - pounds and pence | Measure in centimetres and millimetres | Make shapes |  | Calculate with metric measures |
| Heavier and lighter | Choose notes and coins | Metres, centimetres and millimetres | Compare areas |  | Miles and kilometres |
| Measure and mass | Make the same amount | Equivalent lengths (metres and centimetres) | Measure in kilometres and metres |  | Imperial measures |
| Compare mass | Compare amounts of money | Equivalent lengths (centimetres and millimetres) | Equivalent lengths (kilometres and metres) | Perimeter of rectangles | Shapes - same area |
| Full and empty | Calculate with money | Compare lengths | Perimeter on a grid | Perimeter of rectilinear shapes | Area and perimeter |
| Compare volume | Make a pound | Add lengths | Perimeter of a rectangle | Perimeter of polygons | Area of a triangle - counting squares |
| Measure capacity | Find change | Subtract lengths | Perimeter of rectilinear shapes | Area of rectangles | Area of a right-angled triangle |
| Compare capacity | Two-step problems | What is a perimeter? | Find missing lengths in rectilinear shapes | Area of compound shapes | Area of any triangle |
| Money | Measure in centimetres | Measure perimeter | Calculate perimeter of rectilinear shapes | Estimate area | Area of a parallelogram |
| Unitising | Measure in metres | Calculate perimeter | Perimeter of regular polygons | Kilograms and kilometres | Volume - counting cubes |
| Recognise coins | Compare lengths and heights | Use scales | Perimeter of polygons | Millimetres and millilitres | Volume of a cuboid |
| Recognise notes | Order lengths and heights | Measure mass in grams |  | Convert units of length |  |
| Count in coins | Four operations with lengths and heights | Measure mass in kg and grams | Money | Convert between metric and imperial units |  |
| Time | Compare mass | Equivalent masses (kg and g) | Write money using decimals | Convert units of time |  |
| Before and after | Measure in grams | Compare mass | Convert between pounds and pence | Calculate with timetables |  |
| Days of the week | Measure in kilograms | Add and subtract mass | Compare amounts of money | Cubic centimetres |  |
| Months of the year | Four operations with mass | Measure capacity and volume in millimetres | Estimate with money | Compare volume |  |
| Hours, minutes and seconds | Compare volume and capacity | Measure capacity and volume in litres and millilitres | Calculate with money | Estimate volume |  |
| Tell the time to the hour | Measure in millilitres | Equivalent capacities and volumes (litres and millilitres) | Solve problems with money | Estimate capacity |  |
| Tell the time to the half hour | Measure in litres | Compare capacity and volume | Time |  |  |



## Shape Progression (Geometry)

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Recognise and name 3D shapes | Recognise 2D and 3D shapes | Turns and angles | Understand angles as turns | Understand and use degrees | Measure and classify angles |
| Sort 3D shapes | Count sides on 2D shapes | Right angles | Identify angles | Classify angles | Calculate angles |
| Recognise and name 2D shapes | Count vertices on 2D shapes | Compare angles | Compare and order angles | Estimate angles | Vertically opposite angles |
| Sort 2D shapes | Draw 2D shapes | Measure and draw accurately | Triangles | Measure angles up to $180^{\circ}$ | Angles in a triangle |
| Patterns with 2D and 3D shapes | Lines of symmetry on shapes | Horizontal and vertical | Quadrilaterals | Draw lines and angles accurately | Angles in a triangle - special cases |
|  | Use lines of symmetry to complete shapes | Parallel and perpendicular | Polygons | Calculate angles around a point | Angles in a triangle - missing angles |
|  | Sort 2D shapes | Recognise and describe 2D shapes | Lines of symmetry | Calculate angles on a straight line | Angles in a quadrilateral |
|  | Count faces on 3D shapes | Draw polygons | Complete a symmetric figure | Lengths and angles in shapes | Angles in polygons |
|  | Count edges on 3D shapes | Recognise and describe 3-D shapes |  | Regular and irregular polygons | Circles |
|  | Count vertices on 3D shapes | Make 3D shapes |  | 3D shapes | Draw shapes accurately |
|  | Sort 3D shapes |  |  |  | Nets of 3D shapes |
|  | Make patterns with 2D and 3D shapes |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

## Statistics Progression

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | Make tally charts | Interpret pictograms | Interpret charts | Draw line graphs |  |
|  | Tables | Draw pictograms | Comparison, sum and <br> difference | Read and interpret line graphs | Dual bar charts |
|  | Block diagrams | Interpret bar charts | Interpret line graphs | Read and interpret tables |  |
|  | Draw pictograms (1-1) | Draw bar charts | Draw line graphs | Two-way tables |  |
|  | Interpret pictograms (1-1) | Collect and represent data |  | Read and interpret timetables | Draw pie charts |
|  | Draw pictograms (2,5,and 10) | Two-way tables |  | Read and interpret line graphs | The Mean |
|  | Interpret pictograms (2,5 and <br> 10) |  | Read and interpret tables |  |  |

## Geometry Progression (Position and Direction)

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Describe turns | Language of position |  | Describe position using coordinates | Read and plot coordinates | The first quadrant |
| Describe position - left and right <br> right | Describe movement |  | Plot coordinates | Problem solvin with | Read and plot points in four quadrants |
| Describe position - forwards | Describe turns |  | Draw 2 S shapes on a git | Transation | Solve problems with coordinate |
| Describe position - above and | Describe movement and turns |  | Transate on a grid | Transation with cordinates | Transations |
| Ordinal Iumbers | Shape paterns with turn |  | Describe transation on a grid | Lines of symmetry <br> Reflection in horizontal and | Reflections |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

Algebra Progression

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | 1-step function machines |
|  |  |  |  |  | 2-step function machines |
|  |  |  |  |  | Form expressions |
|  |  |  |  |  | Substitution |
|  |  |  |  |  | Formulae |
|  |  |  |  |  | Form equations |
|  |  |  |  |  | Solve 1-step equations |
|  |  |  |  |  | Solve 2 -step equations |
|  |  |  |  |  | Find pairs of values |
|  |  |  |  |  | Solve problems with two unknowns |

## KS1 with EYFS

| Place Value Progression |  |  |
| :---: | :---: | :---: |
| EYFS | Year 1 | Year 2 |
| Match, Sort and Compare |  |  |
| Match objects | Sort objects | Numbers to 20 |
| Match pictures and objects | Count objects | Count objects to 100 by making 10s |
| Identify a set | Count objects from a larger group | Recognise 10 and 1s |
| Sort objects to a type | Represent objects | Use a place value chart |
| Explore sorting techniques | Recognise number as words | Partition numbers to 100 |
| Create sorting rules | Count on from any number | Write numbers to 100 in words |
| Compare amounts | 1 more | Flexibly partition numbers to 100 |
|  | Count backwards within 10 | Write numbers to 100 in expanded form |
| It's me-123 | 1 less |  |
| Find 1,2,3 | Compare groups by matching | 10s on the number line to 100 |
| Subitise 1, 2, 3 | Fewer, more, same | 10 s and 1 s on the number line to 100 |
|  | Less than, greater than, equal to | Estimate numbers on a number line |
| 1,2,3,4,5 | Compare numbers | Compare objects |
| Find 4 and 5 | Order objects and numbers | Order objects and numbers |
| Subitise 4 and 5 | The number line | Count in 2s, 5s, 10 s |
| Represent 4 and 5 | Count within 20 | Count in 3s |
|  | Understand 10 |  |
| Alive in 5 | Understand 11, 12 and 13 |  |
| Introducing zero | Understand 14, 15 and 16 |  |
| Find zero to 5 | Understand 17, 18 and 19 |  |
| Subitise zero to 5 | Understand 20 |  |
| Represent zero to 5 | 1 more and 1 less |  |
|  | The number line to 20 |  |
| Growing 6,7,8 | Use a number line to 20 |  |
| Find 6,7,8 | Estimate on a number line to 20 |  |
| Represent 6,7,8 | Compare numbers to 20 |  |
| One more | Order numbers to 20 |  |
|  | Count from 20 to 50 |  |


| Building 9 and 10 | 20,30,40 and 50 |  |
| :---: | :---: | :---: |
| Find 8 and 10 | Count by making groups of tens |  |
| Compare numbers to 10 | Groups of tens and ones |  |
| Represent 9 and 10 | Partition into tens and ones |  |
| Conceptual subitising to 10 | The number line to 50 |  |
| One more | Estimate on a number line to 50 |  |
| One less | 1 more, 1 less |  |
| Composition to 10 | Count from 50 to 100 |  |
| Bonds to 10 in two part | Tens to 100 |  |
| Make arrangements to 10 | Partition into tens and ones |  |
| Bonds to 10 in 3 parts | The number line to 100 |  |
| Doubles to 10 (find) | 1 more, 1 less |  |
| Doubles to 10 (make) | Compare numbers with the same number of tens |  |
| Explore even and odd | Compare any two numbers |  |
| To 20 and beyond |  |  |
| Build numbers beyond 10 (to 13) |  |  |
| Continue patterns beyond 10 (to 13) |  |  |
| Build numbers beyond 10 (1420) |  |  |
| Continue patterns beyond 10 (14-20) |  |  |
| Verbal counting beyond 20 |  |  |
| Verbal counting patterns |  |  |



| Multiplication and Division Progression |  |  |
| :---: | :---: | :---: |
| EYFS | Year 1 | Year 2 |
| Staring and Grouping |  | bus |
| Eppore saming | Contit 10 s | Mase equal grous |
|  |  |  |
| Grouping |  |  |
|  |  |  |
|  | Mate eauf gous. giguring | Mate ealalgouss Sharimg |
|  |  |  |
|  |  |  |
|  |  | Oode anderen unmer |
|  |  | owne brio |
|  |  |  |
|  |  | The Sond 10 tines |


| FractionS Progression |  |  |
| :--- | :--- | :--- |
| EYFS | Year 1 | Year 2 |
|  | Recognise a half of an object <br> or a shape | Introduction to parts and <br> whole |
|  | Find a half of an object or a <br> shape | Equal and unequal parts |
|  | Recognise a half of a quantity | Recognise a half |
|  | Find a half of a quantity | Find a half |
|  | Recognise a quarter of an <br> object or a shape | Recognise a quarter |
|  | Find a quarter of an object or <br> a shape | Find a quarter |
|  | Recognise a quarter of a <br> quantity | Recognise a third |
|  | Find a quarter of a quantity | Find a third |


|  |  | Find the whole |
| :--- | :--- | :--- |
|  |  | Unit fractions |
|  |  | Non-unit fractions |
|  |  | Recognise the equivalence of <br> a half and two-quarters |
|  |  | Recognise three-quarters |
|  |  | Find three-quarters |
|  | Count in fractions up to a <br> whole |  |


| Measures Progression |  |  |
| :--- | :--- | :--- |
| EYFS | Year 1 | Year 2 |$|$| Measure and Pattern | Compare lengths and heights | Count money - pence |
| :--- | :--- | :--- |
| Compare size | Measure length using objects | Count money - pounds (notes <br> and coins) |
| Compare mass | Measure length in <br> centimetres | Count money - pounds and <br> pence |
| Compare capacity | Heavier and lighter | Choose notes and coins |
| Explore simple patterns | Measure and mass | Make the same amount |
| Copy and continue simple <br> patterns | Compare mass | Compare amounts of money |
| Create simple patterns | Full and empty | Calculate with money |
|  | Compare volume | Make a pound |
| Mass and Capacity | Measure capacity | Find change |
| Compare mass | Compare capacity | Two-step problems |
| Find a balance | Money | Measure in centimetres |
| Explore capacity | Unitising | Measure in metres |
| Compare capacity | Recognise coins | Compare lengths and heights |
|  | Recognise notes | Order lengths and heights |
| Length, Height and Time | Count in coins | Four operations with lengths <br> and heights |
| Explore length | Compare mass |  |
| Compare length | Before and after | Measure in grams |
| Explore height | Days of the week | Measure in kilograms |
| Compare height | Months of the year | Four operations with mass |
| Talk about time | Hours, minutes and seconds | Compare volume and capacity |
|  | Tell the time to the hour | Measure in millilitres |


|  | Tell the time to the half hour | Measure in litres |
| :--- | :--- | :--- |
|  |  | Four operations with volume <br> and capacity |
|  |  | Temperature |
|  |  | Time |
|  |  | O'clock and half past |
|  |  | Quarter past and quarter to |
|  |  | Tell the time past the hour |
|  |  | Tell the time to the hour |
|  |  | Tell the time to 5 minutes |
|  |  | Minutes in an hour |
|  |  | Hours in a day |


| Shapes Progression |  |  |
| :--- | :--- | :--- |
| EYFS | Year 1 | Year 2 |
| Circles and Triangles | Recognise and name 3D <br> shapes | Recognise 2D and 3D shapes |
| Identify and name circles and <br> triangles | Sort 3D shapes | Count sides on 2D shapes |
| Compare circles and triangles | Recognise and name 2D <br> shapes | Count vertices on 2D shapes |
| Shapes in the environment | Sort 2D shapes | Draw 2D shapes |
|  | Patterns with 2D and 3D <br> shapes | Lines of symmetry on shapes |
| Shapes with 4 sides |  | Use lines of symmetry to <br> complete shapes |
| Identify and name shapes with <br> 4 sides |  | Sort 2D shapes |
| Combine shapes with 4 sides |  | Count faces on 3D shapes |
| Shapes in the environment |  | Count edges on 3D shapes |
|  |  | Count vertices on 3D shapes |
| 3D shapes |  | Make patterns with 2D and 3D <br> shapes |
| Recognise and name 3D <br> shapes |  |  |
| Find 2D shapes within a 3D <br> shape |  |  |
| Use 3D shapes for tasks |  |  |
| 3D shapes in the environment |  |  |


| Identify more complex <br> patterns |  |  |
| :--- | :--- | :--- |
| Copy and continue patterns |  |  |
| Patterns in the environment |  |  |
| Manipulate, Compose and <br> Decompose |  |  |
| Select shapes for a purpose |  |  |
| Rotate shapes |  |  |
| Manipulate shapes |  |  |
| Explain shape arrangements |  |  |
| Compose shapes |  |  |
| Decompose shapes |  |  |
| Copy 2D shape pictures |  |  |
| Find 2D shapes in 3D shapes |  |  |


| Geometry Progression - position and direction |  |  |
| :--- | :--- | :--- |
| EYFS | Year 1 | Year 2 |
| Visual, Build and Map | Describe turns | Language of position |
| Identify units of repeating <br> patterns | Describe position - left and <br> right | Describe movement |
| Create own pattern rules | Describe position - forwards <br> and backwards | Describe turns |
| Explore own pattern rules | Describe position - above and <br> below | Describe movement and turns |
| Replicate and build scenes <br> and constructions | Ordinal numbers | Shape patterns with turn |
| Visualise from different <br> positions |  |  |
| Describe positions :) |  |  |
| Give instructions to build |  |  |
| Explore mapping |  |  |
| Represent maps with models |  |  |
| Create own maps of familiar <br> places |  |  |
| Create own maps and plans <br> from story situations |  |  |
| Make connections |  |  |

## Powerful Knowledge and Skills

## By the end of EYFS:

- Count objects, actions and sounds
- Subitise
- Link the number symbol with the cardinal number value
- Count beyond 10
- Compare numbers
- Understand the one more than and one less than relationship with consecutive numbers
- Explore the composition of numbers to 10
- Automatically recall number bonds 0 to 10
- Select, rotate and manipulate shapes in order to develop spatial reasoning skills
- Compose and decompose shapes
- Continue, copy and create repeating patterns
- Compare length, weight and capacity


## By the end of Year 1:

- Count to and across 100, forwards \& backwards from any number
- Read and write numbers to 20 in numerals \& words
- Read and write numbers to 100 in numerals
- Say 1 more/1 less to 100
- Count in multiples of 2,5 \& 10
- Use bonds and subtraction facts to 20
- Add \& subtract: 1 digit \& 2 digit numbers to 20 , including zero
- Solve one-step multiplication and division using objects, pictorial
- representation and arrays
- Recognise half and quarter of object, shape or quantity
- Sequence events in chronological order
- Use language of day, week, month and year
- Tell time to hour \& half past


## By the end of Year 2:

- Recognise and use inverse (+/-)
- Calculate and write multiplication \& division calculations using multiplication tables
- Recognise, find, name and write $1 / 3 ; 1 / 4 ; 2 / 4 ; 3 / 4$
- Write and recognise equivalence of simple fractions
- Compare and order numbers up to 100 and use < > =
- Read and write all numbers to 100 in digits \& words
- Say 10 more/less than any number to 100
- Count in steps of $2,3 \& 5$ from zero and in 10s from any number (forwards and backwards)
- Recall and use multiplication \& division facts for 2, 5 \& 10 tables
- Recall and use +/- facts to 20
- Derive and use related facts to 100
- Recognise place value of any 2-digit number
- Add \& subtract: 2-digit numbers \& ones
- Add \& subtract 2-digit numbers \& tens
- Add \& subtract two 2-digit numbers
- Add \& subtract three 1-digit numbers
- Tell time to five minutes, including quarter past/to


## By the end of Year 3:

- Compare \& order numbers up to 1000
- Read \& write all numbers to 1000 in digits and words
- Find 10 or 100 more/less than a given number
- Count from 0 in multiples of $4,8,50$ and 100
- Recall \& use multiplication \& division facts for 3, 4, 8 tables
- Recognise place value of any 3-digit number
- Add and subtract: 3-digit numbers and ones
- 3-digit numbers and tens
- 3-digit numbers and hundreds
- Add and subtract: Numbers with up to 3-digits using written columnar
- method
- Estimate and use inverse to check
- Multiply: 2-digit by 1-digit
- Count up/down in tenths
- Compare and order fractions with same denominator
- Add and subtract fractions with same denominator within one whole
- Tell time using 12 and 24 hour clocks; and using Roman numerals
- Tell time to nearest minute
- Know number of days in each month and number of seconds in a minute


## By the end of Year 4:

- Count backwards through zero to include negative numbers
- Compare and order numbers beyond 1,000
- Compare and order numbers with up to 2 decimal places
- Read Roman numerals to 100
- Find 1,000 more or less than a given number
- Count in multiples of $6,7,9,25$ and 1000
- Recall and use multiplication and division facts for all tables to $12 \times 12$
- Recognise place value of any 4-digit number
- Round any number to the nearest 10,100 or 1,000
- Round decimals with 1 decimal-place to nearest whole number
- Add and subtract numbers with up to 4-digits using written columnar method
- Multiply 2-digit and 3-digit numbers by 1-digit numbers
- Count up and down in hundredths
- Recognise and write equivalent fractions
- Add and subtract fractions with same denominator
- Read, write and convert time between analogue and digital 12 and 24 hour clocks


## By the end of Year 5:

- Count forwards and backward with positive and negative numbers through zero
- Count forwards/backwards in steps of powers of 10 for any given number up to 1,000,000
- Compare and order numbers up to $1,000,000$
- Compare and order numbers with 3 decimal places
- Read Roman numerals to 1,000
- Identify all multiples and factors, including finding all factor pairs of two numbers
- Use known tables to derive other number facts
- Recall prime numbers up to 19
- Recognise and use square numbers and cube numbers
- Recognise place value of any number up to $1,000,000$
- Round any number up to $1,000,000$ to the nearest $10,100,1000,10,000$ or 100,000
- Round decimals with 2 decimal places to nearest whole number and 1 decimal place
- Add and subtract: Numbers with more than 4-digits using formal written method
- Use rounding to check answers
- Multiply: 4-digits by 1-digit/ 2-digit
- Divide: Up to 4-digits by 1-digit
- Multiply \& divide: Whole numbers \& decimals by 10, 100 and 1,000
- Recognise and use thousandths
- Recognise mixed numbers and improper fractions and convert from one to another
- Multiply proper fractions and mixed numbers by whole numbers
- Identify and write equivalent fractions
- Solve time problems using timetables and converting between different units of time


## By the end of Year 6:

- Use negative numbers in context and calculate intervals across zero
- Compare and order numbers up to 10,000,000
- Identify common factors, common multiples and prime numbers
- Round any whole number to a required degree of accuracy
- Identify the value of each digit to 3 decimal places
- Use knowledge of order of operations to carry out calculations involving four operations
- Multiply: 4-digit by 2-digit
- Divide: 4-digit by 2-digit
- Add and subtract fractions with different denominators and mixed numbers
- Multiply simple pairs of proper fractions, writing the answer in the simplest form.
- Divide proper fractions by whole numbers
- Calculate \% of whole number

