South View Community Primary School

Our Maths Curriculum

Reviewed:

October 2023

Next Review: October 2025

Contents

1. THE BASIC PRINCIPLES OF OUR CURRICULUM

Learning is a change to long term memory.

Our aims are to ensure that our children experience a wide breadth of study and have, by the end of each Key Stage, long -term memory of an ambitious body of procedural and semantic knowledge.

2. OUR CURRICULUM INTENT

Curriculum Drivers shape our curriculum breadth. They are derived from an exploration of the backgrounds of our children, our beliefs about high quality education and our values. They are used to ensure we give our children appropriate and ambitious curriculum opportunities. Our curriculum drivers, enabling us to ensure OUR children get what THEY need from us are that:

- Our children will develop vocabulary so that they are able to speak and understand spoken language, access more complex texts and write with eloquence.
- Our children will leave South View as successful readers. They will 'learn to read' and consequently 'read to learn'.
- Our children will explore their own cultures, surroundings and emotions and those of others, to gain a wider understanding of the world and their place within it.

3. MATHS INTENT

At South View Community Primary School our mathematics curriculum is designed and taught to ensure –

- **All learners are successful mathematicians.**
    - We believe everyone can be a successful mathematician.
    - Mistakes and misconceptions help us all learn.
    - Effort is recognised and praised.
    - Early success helps us all achieve.
    - Resilient, independent and motivated learners are what we aspire to.
- **Successful mathematicians make connections.**
    - Connections are explicitly taught and shared.
    - Models and representations are used to support understanding.
    - Exploring the underlying structure of our number system ensures depth of understanding.
- **Knowing key facts allows efficient problem solving.**
    - Recalling key facts regularly helps us feel free up working memory to solve increasingly complex problems.
    - We apply known facts in a variety of contexts.
    - Discussing, sharing and using mathematical vocabulary helps us efficiently describe and extend our learning.

4. MEETING THE NEEDS OF ALL CHILDREN IN MATHS

Supporting Children with Special Educational Needs

At South View we follow a mastery approach, which means for the majority of our children our lesson objectives are planned to ensure all learners can engage in the learning. Small steps are planned so that all children can participate in the lesson and have levels of early success to build confidence and esteem.

Additional support can be provided through –

- use of key resources,
- pre-teaching,
- same day intervention,
- carefully scaffolded sequences of learning,
- alternative ways of demonstrating understanding,
- careful grouping/pairing of children to encourage mathematical talk and exploration,
- early identification, and removal, of barriers which may prevent mathematical understanding (e.g. reading shouldn't be a barrier to maths achievement).

A minority of children may have significant gaps in their mathematical learning, requiring a more personalised approach. These children will have individual mathematical targets on their EHCP and/or their TIMS. The Class Teacher, with support from SENDCo and/or Maths Lead, will oversee a curriculum based on their individual needs. This curriculum may be based on a previous year group's learning; high quality planning and resources from that previous year group can be adapted and personalised further. For children with significant learning difficulties, their maths curriculum may be significantly adapted to focus on functional maths and using maths in real life situations, again this will be reflected in the child's EHCP and reviewed in line with the SEND policy.

The Class Teacher will take responsibility in ensuring that the curriculum and delivery is of high quality, providing support and advice to whoever is best placed to deliver this individualised plan, this is supported through regular opportunities for teacher and member of staff delivering maths to monitor child's progress, assess understanding and adjust planning. Each child and mathematical unit will be considered, for example a child who may need calculation units from 3 years prior to their peer year group may be able to access the geometry units taught in class.

Cognition and Learning		Communication and Interaction	
Subject Challenges for SEND	Provision for SEND	Subject Challenges for SEND	Provision for SEND
Accessing learning due to poor literacy skills	• Adult/peer to support with reading of word problems • 'Drawing'/annotating word problem to show steps needed. • Minimise redundant written information.	Children may struggle to communicate and express their understanding	• Minimise background noise • Child to face the teacher to support lip reading • Write new vocabulary down • Key resources, visuals and actions linked with vocabulary and concepts. • Talking tins/iPad to record explanations • Scribe for longer explanations
Children may struggle to remember information/facts/ vocabulary/ previous learning	• Lots of retrieval opportunities and reinforcement in lessons • Hear, repeat and use new vocabulary in full sentences with precision – multiple times. Revisit in following sessions. • Concrete and pictorial revisiting of key concepts. • Key resources, visuals and actions linked with vocabulary and concepts. • Key steps recorded/displayed for children to refer back to. E.g. finding a fraction of an amount, rounding to the nearest 10 etc. • Conceptual Variation	Language difficulties may make children unable to access their mathematics learning	• Lots of reinforcement • Lots of repetition • Use of simple instructions • Step by step instructions • Careful and appropriate modelling to support understanding • Visual aids and dual coding • Videos of examples and practice • Use of key resources/concrete equipment by adults and children • Bi-lingual resources if needed.

Physical and sensory		Social Emotional and Mental Health	
Subject Challenges for SEND	Provision for SEND	Subject Challenges for SEND	Provision for SEND
Children with visual impairment may find it difficult to see images. Children with fine motor difficulties may find it difficult to use key resources Children with hearing difficulties may find it difficult to access teaching	• Ensure images are enlarged and accessible • Ensure children are close to whiteboard/ resources • Coloured overlays/coloured paper/maths books • Provide additional ways to record e.g. video, drawings, verbal explanation • Use larger equipment e.g. multi-link for ones, rather than base 10 ones. • Pencil grips and tripod pencils • Consider Left handed/Right handed seating arrangements • Minimise background noise • Child to face the teacher to support lip reading • Write new vocabulary down • Key resources, visuals and actions linked with vocabulary and concepts.	Children may become frustrated/withdrawn/ aggressive when work is challenging Children's mental health and wellbeing may impact on their ability to access their learning	• Carefully sequenced learning for immediate success • Children provided with a role which may not involve active participation • Use of ICT to support access • Providing appropriate resources so that children can access the lesson e.g. resources • Providing a safe space for the children within the lesson if needed- breakout spaces • Teach with empathy and understanding • Ensure children have opportunities to have sensory breaks, etc., from their work • Consider cognitive overload and children's ability to manage this •

Challenging and Extending Children to achieve Greater Depth

At South View we follow a mastery approach, which means our lesson objectives are planned to ensure all learners can engage in the learning. However, one of the challenges facing us as teachers is engaging all learners throughout the lesson when adopting a whole-class teaching approach. As the guidance *'Teaching for Mastery: Questions, tasks and activities to support assessment'*, states, "It is inevitable that some pupils will grasp concepts more rapidly than others and will need to be stimulated and challenged to ensure continued progression" (Askew et al., 2015, p.6) *.

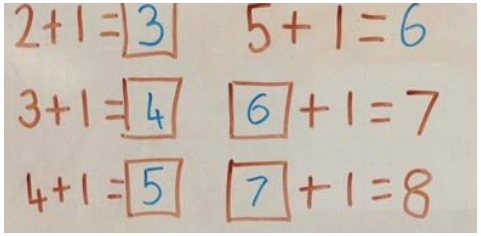
We have used the definition by Askew et al. (2015, p.7) * that pupils working at a greater depth level should be able to:

- solve problems of greater complexity (i.e. where the approach is not immediately obvious), demonstrating creativity and imagination;
- independently explore and investigate mathematical contexts and structures, communicate results clearly and systematically explain and generalise the mathematics.

As a result of this, at South View, we endeavour to challenge and extend thinking throughout mathematics lessons. We look to provide activities, problems and experiences that allow our children to work in increasingly complex contexts and structures. We look to model effective reasoning, generalising, explanation and layout of solutions to ensure children can communicate their results and understanding effectively. We seek for our best mathematicians to use sophistication, accuracy and precision in their mathematics.

We have identified the following whole school key strategies that can be used to extend our children to think at deeper levels: we recognise this is not an exhaustive list.

Askew, A., Bishop, S., Christie, C., Eaton, S., Griffin, P., & Morgan, D. (2015). Teaching for Mastery: Questions, tasks and activities to support assessment. Open University Press.

Strategies	Examples
Procedural Variation Looking for patterns, finding patterns and providing explanations and/or further examples.	**EYFS**  **Y1** Can you fill in the missing numbers to complete the number sentences? 9 + □ = 16 7 + 1 = □ 2 + 10 = □ 9 + □ = 17 □ - 1 = 7 2 + 20 = □ 9 + □ = 18 9 + 2 = □ 2 + 30 = □ 9 + □ = 19 □ - 2 = 9 2 + 40 = □ 9 + □ = 20 11 + 3 = □ 2 + 50 = □ 9 + □ = 21 □ - 3 = 11 2 + □ = 62 **Y2** 12 - 10 = 22 - 10 = 32 - 10 = 42 - 10 = 32 - 11 = 42 - 11 = 52 - 11 = 42 - 12 = 52 - 12 = 62 - 12 = 52 - 13 = 62 - 13 = □ - 14 = 48 **Year 3** 2 x 4 = 2 x 8 = 2 x 40 = 2 x 80 = 2 x 400 = 2 x □ = 1600 20 x 4= 20 x 8 = □ x 4 = 800 200 x 8 = 20 x 40 = 20 x 80 = **Year 4** What do you notice? 127 + 10 = 137 137 + 10 = 147 147 + 10 = 157 157 + 10 = 167 167 + 10 = 177 Can you explain what it happening? Why? Can you continue the pattern? What about? 1037 + 10 = ____ 2346 + 10 = ____ 10 321 + 10 = _____ **Year 5** 156 ÷ 4 = 157 ÷ 4 = 158 ÷ 4 = 159 ÷ 4 = 160 ÷ 4 = What do you notice? □ ÷ 4 = □ r2 What could the calculation be? **Year 6** 621 ÷ 27= 6210 ÷ 270= 27 x □ = 162 27 x □ = 162 x □ 27 x □ = 243 28 x □ = 252

Conceptual Variation which could include:

Identifying the odd one out (Y1 example)

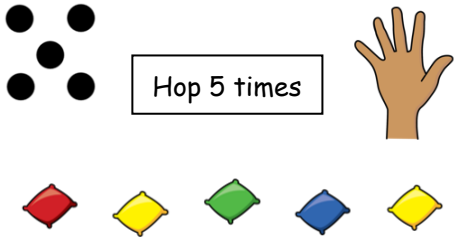
Non-obvious examples/ address misconceptions (Y3)

The Frayer Model (Y4 example)

Are some visuals more helpful to show a concept? (Y5 example)

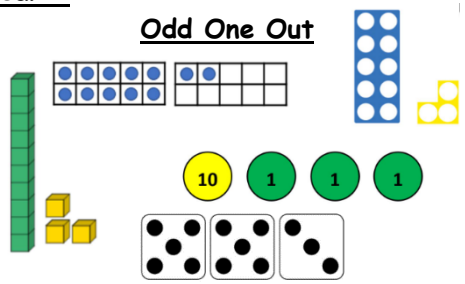
Why is this the answer? Show me this in a different way/with a different resource/in a different context.

EYFS



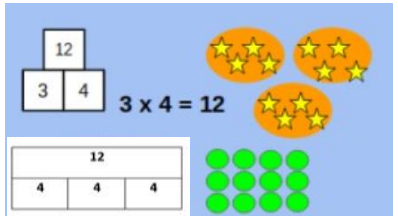
Can you find me 5 stones? Can you do 5 jumps? Can you ….

Year 1



How do you know it's the odd one out?

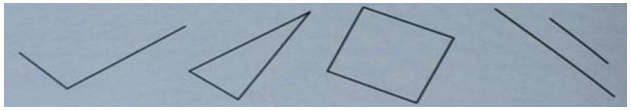
Year 2

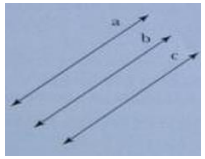


3 x 4 = 4 x 3 = 12 4 + 4 + 4 = 12.

3 cars have 4 wheels each. There are 12 wheels altogether.

Year 3



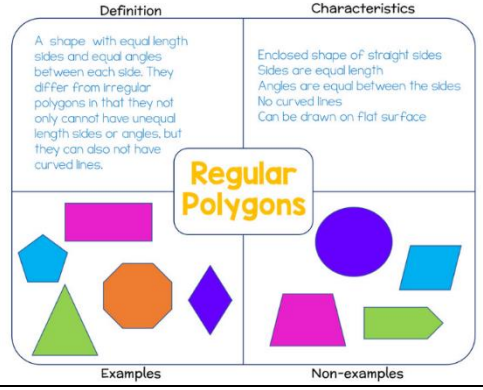


Which examples show parallel lines?

Which examples show perpendicular lines?

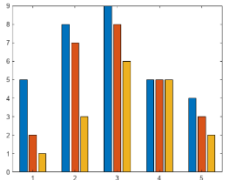
Is line a parallel to line c?

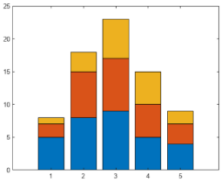
Year 4



Year 5

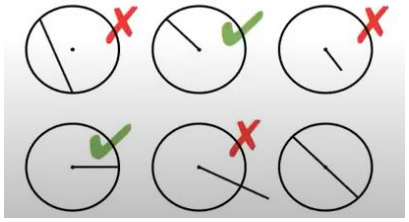
Year 1 to 5 were asked to vote between blue, orange or gold as a new school uniform colour. How many children voted in Year 1?
How many year 5 children voted blue?
Which is the most appropriate layout for the data? Why?





Year 6

Using these examples and non-examples of a radius. Can you write a definition for radius? What about the last example – is this a radius?



Questions with multiples answers

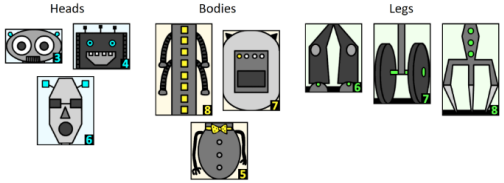
And another… and another… Collecting more than one example.

Can extend further – smallest example, largest example, an example no-one else will think of.

Working systematically.

EYFS

NRich – making different robots – how many different robots can you make?



https://nrich.maths.org/2404/index

Year 1

Different ways

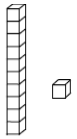
10 > ☐ + 6

10 > ☐ + 6

10 > ☐ + 6

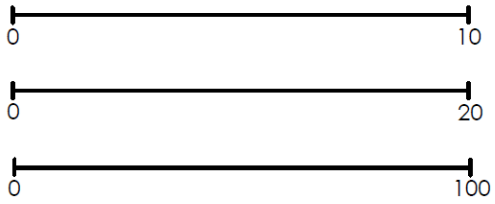
Make 32 using 10s and 1s

Do in different ways



Year 2

Show **8** on each number line.



Year 3

Different ways

To turn **2940** into **3000** you can…

add ____ tens

OR add ____ ones

OR add ____ tens and ____ ones

OR add ____ hundred and subtract ____ tens

Year 4

Complete in 3 different ways:

$\frac{1}{4}$ of ☐ = $\frac{1}{2}$ of ☐ *What do you notice?*

3 ways

Complete in 3 different ways:

$\frac{1}{2}$ of ☐ = $\frac{1}{10}$ of ☐ *What do you notice?*

Year 5

Working systematically – find all solutions.

On a digital clock showing 24-hour time, over a whole day, how many times does a 5 appear? Is it the same number for a 12-hour clock over a whole day?

Year 6

How many ways?

60 ÷ ____ = 12 ÷ ____

Complete using positive whole numbers.

Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

Developing the concept of proof and explanations

Explain the mistake. (EYFS example)

Always, Sometimes, Never Give children a statement and they decide if it's always true (prove it), never true (find a counter example) or sometimes true (examples for both). (Y3 example)

What's missing? This could be missing number problems or a graph with missing data or a shape with missing sides. (y5 example)

Which is easiest/hardest? Rank by difficulty (Y2 and Y4 example)

EYFS

What is the mistake?

How can you make this correct?

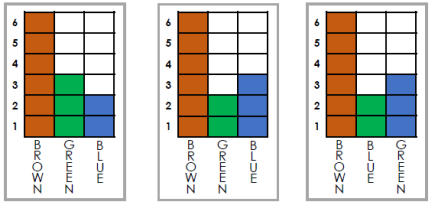
Year 1

Which graph?

Eye Colour of Teachers	
Brown	6 teachers
Green	2 teachers
Blue	3 teachers

Mr Harris found out the eye colours of all the teachers in the school.

Look at the three graphs. Which graph show this information correctly?



Explain why the other two could not be correct.

Year 2

Which is harder?

Circle the harder question in each pair.

16 + 7 **OR** 16 + 12

20 + 12 **OR** 19 + 12

70 + 14 **OR** 70 + 41

Explain your choices.

Year 3

Always true, sometimes true or never true

The sum of three numbers is odd

Year 4

Rank by difficulty

$\frac{4}{5} + \frac{1}{5}$

$\frac{3}{4} + \frac{3}{4}$

$\frac{3}{7} + \frac{2}{7}$

$\frac{1}{2} + \frac{2}{4}$

Year 5

Missing digits

$$\begin{array}{r} 5\square 3 \\ \times\ \square \\ \hline 3438 \end{array}$$

Explain how you solved this question.

Year 6

The area of the large square is 100cm².

The perimeter of the small square is half the perimeter of the large square.

What is the area of the small square?

Making connections

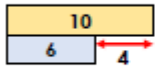
Link with inverse operations, place value knowledge, number bond knowledge, times table knowledge etc.

EYFS

I know... so...

Year 1

I know... so...



20 - 6 = 10 - 4 =
20 - 16 = 20 - 4 =
100 - 60 = 20 - 14 =

Year 2

I know... so...

36 + 20 = 56
36 + 23 =

36 + 20 = 56
36 + = 55

43 + 30 = 73
43 + 29 =

43 + 30 = 73
43 + = 75

Year 3

Is it the same?

63 take away 20, add 2

63 take away 20, take away 2

Is **63 – 18** the same as...

2 + 43

65 – 20

Year 4

I know... so...

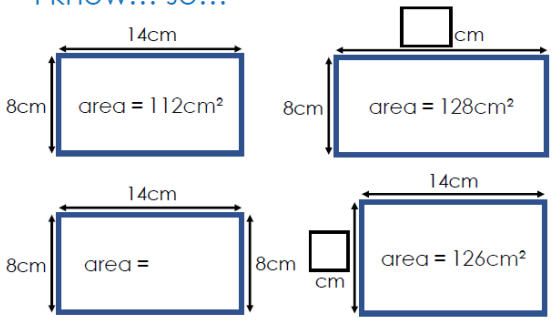
18 × 7 = ____

16 × 7 = 112

8 × 14 = ____

Year 5

I know... so...



Year 6

If I know... then I know...

6e + 4 = f

When e = 6, f =

When e = 8, f = 52

When e = f = 58

Application in different contexts/across strands of learning/across the wider curriculum

Identify opportunities to connect with other parts of the maths curriculum, to link thinking or to present current learning in a creative / unexpected way.

EYFS

Repeating patterns –

Ensure not always with colours that link with shapes, sometimes using shapes, items that change position, e.g., above then below etc., items that change size.

Year 1

Across the Wider Curriculum

Geography - using directional language to describe locations or routes on simple maps or plans will present the chance to use and understand these words accurately.

Year 2

Counting in 2s, 5s and 10s, using coins into a tin so lots of 2ps are 20p. 10 lots of 10ps and 100ps which we also call a pound. Repeat with lengths, weights etc.,

Count in 5 mins and link with 60 minutes in an hour so 60 minutes =1 hour, 65 minutes =1 hour and 5 minutes etc.

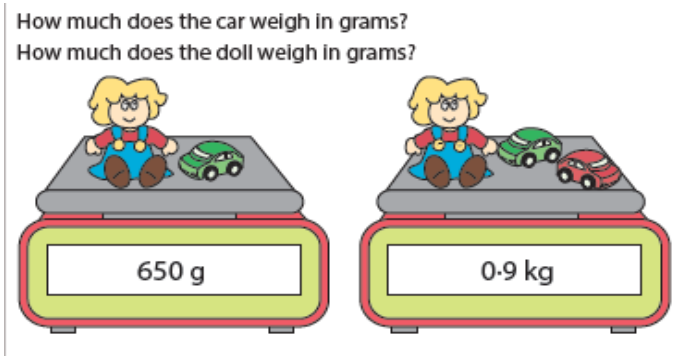
Year 3

There are some triangles and rectangles in a bag. There are 27 corners in the bag.

How many triangles are there? How many squares?

Is there more than one solution?

Year 4



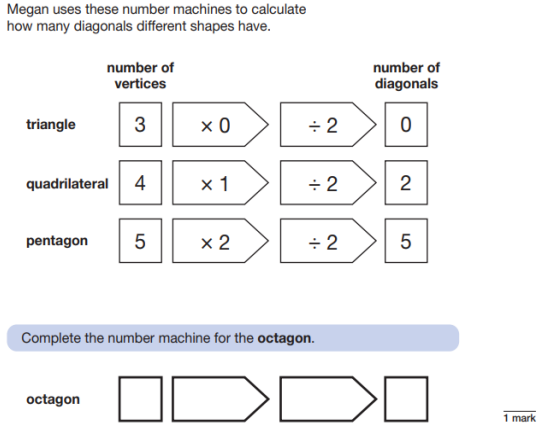
Year 5

A 1 m piece of ribbon is cut into equal pieces and a piece measuring 4 cm remains.

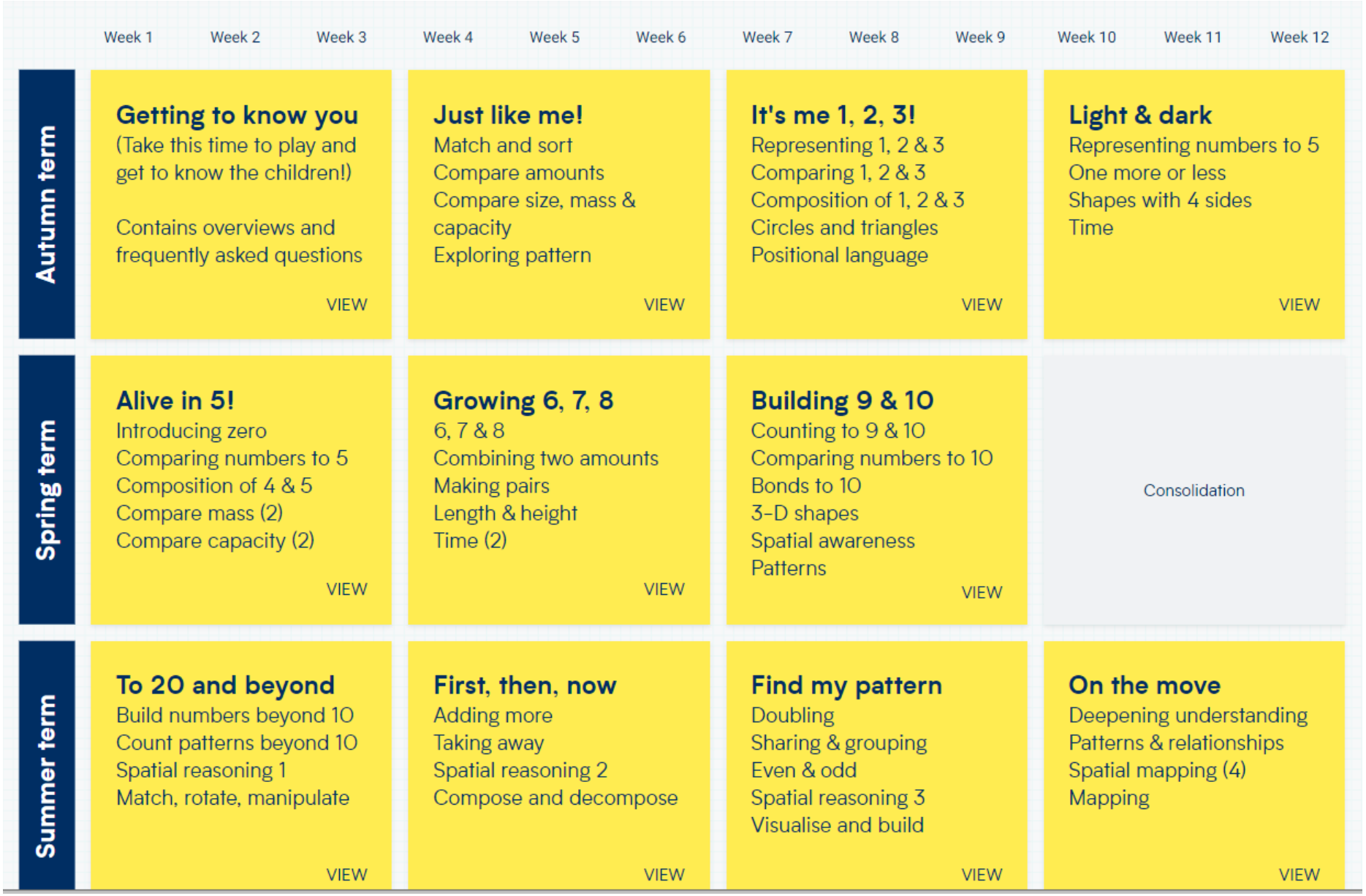
What might the lengths of the equal parts be?

In how many different ways can the ribbon be cut into equal pieces?

Year 6



5. EYFS LONG TERM PLAN



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	**Getting to know you** (Take this time to play and get to know the children!) Contains overviews and frequently asked questions VIEW			**Just like me!** Match and sort Compare amounts Compare size, mass & capacity Exploring pattern 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 VIEW			**Light & dark** Representing numbers to 5 One more or less Shapes with 4 sides Time VIEW		
Spring term	**Alive in 5!** Introducing zero Comparing numbers to 5 Composition of 4 & 5 Compare mass (2) Compare capacity (2) VIEW			**Growing 6, 7, 8** 6, 7 & 8 Combining two amounts Making pairs Length & height Time (2) VIEW			**Building 9 & 10** Counting to 9 & 10 Comparing numbers to 10 Bonds to 10 3-D shapes Spatial awareness Patterns VIEW			Consolidation		
Summer term	**To 20 and beyond** Build numbers beyond 10 Count patterns beyond 10 Spatial reasoning 1 Match, rotate, manipulate VIEW			**First, then, now** Adding more Taking away Spatial reasoning 2 Compose and decompose VIEW			**Find my pattern** Doubling Sharing & grouping Even & odd Spatial reasoning 3 Visualise and build VIEW			**On the move** Deepening understanding Patterns & relationships Spatial mapping (4) Mapping VIEW		

6. YEAR 1 LONG TERM PLAN

Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6

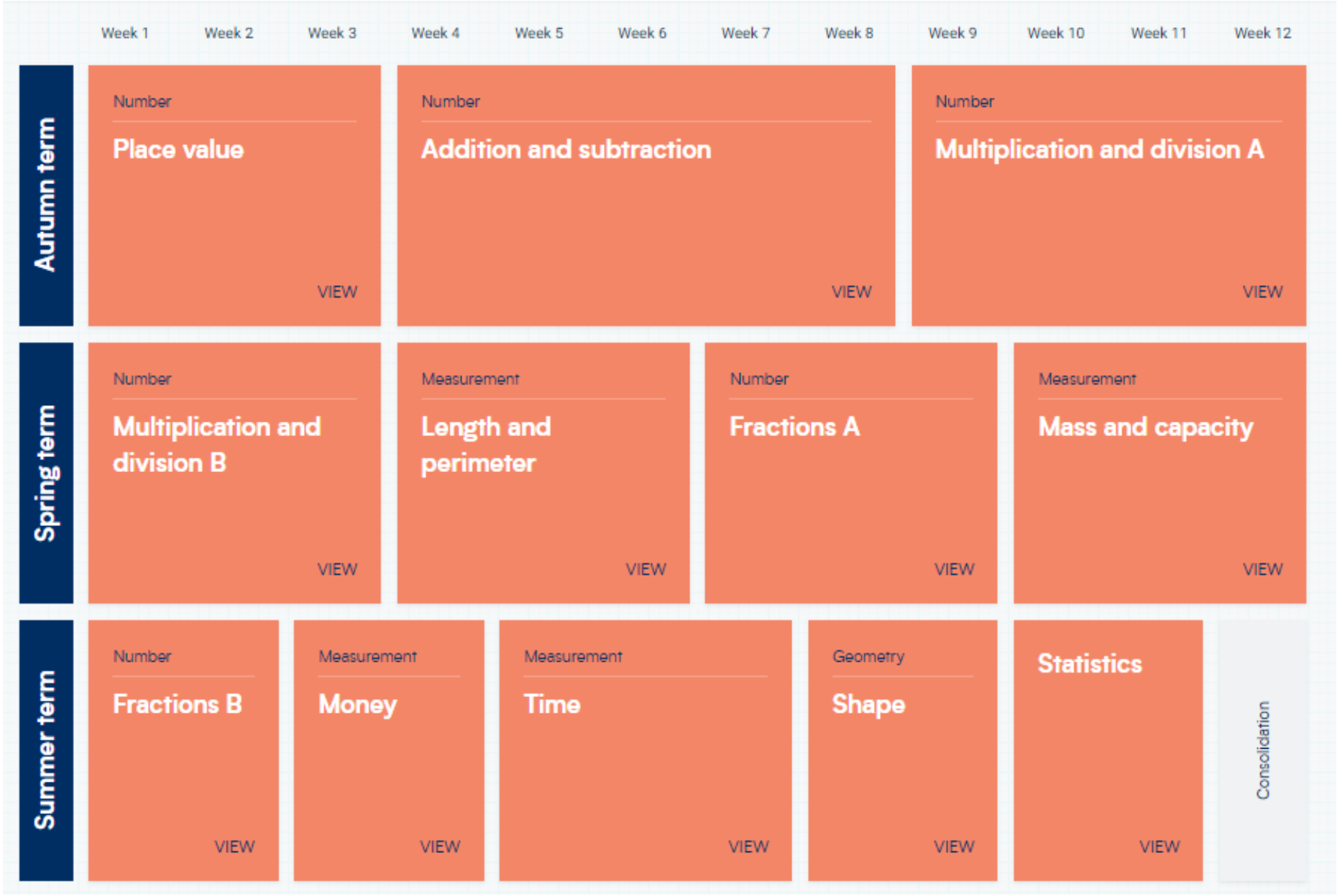
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value (within 10)				Number: Addition and Subtraction (within 10)					Geometry: Shape	Number: Place Value (within 20)	
Spring		Number: Addition and Subtraction (within 20)			Number: Place Value (within 50)			Number: Multiplication and Division			Number: Fractions	
Summer	Measurement: Length and Height		Measurement: Weight and Volume		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time		Consolidation, Problem Solving and Year 2 Readiness	

7. YEAR 2 LONG TERM PLAN

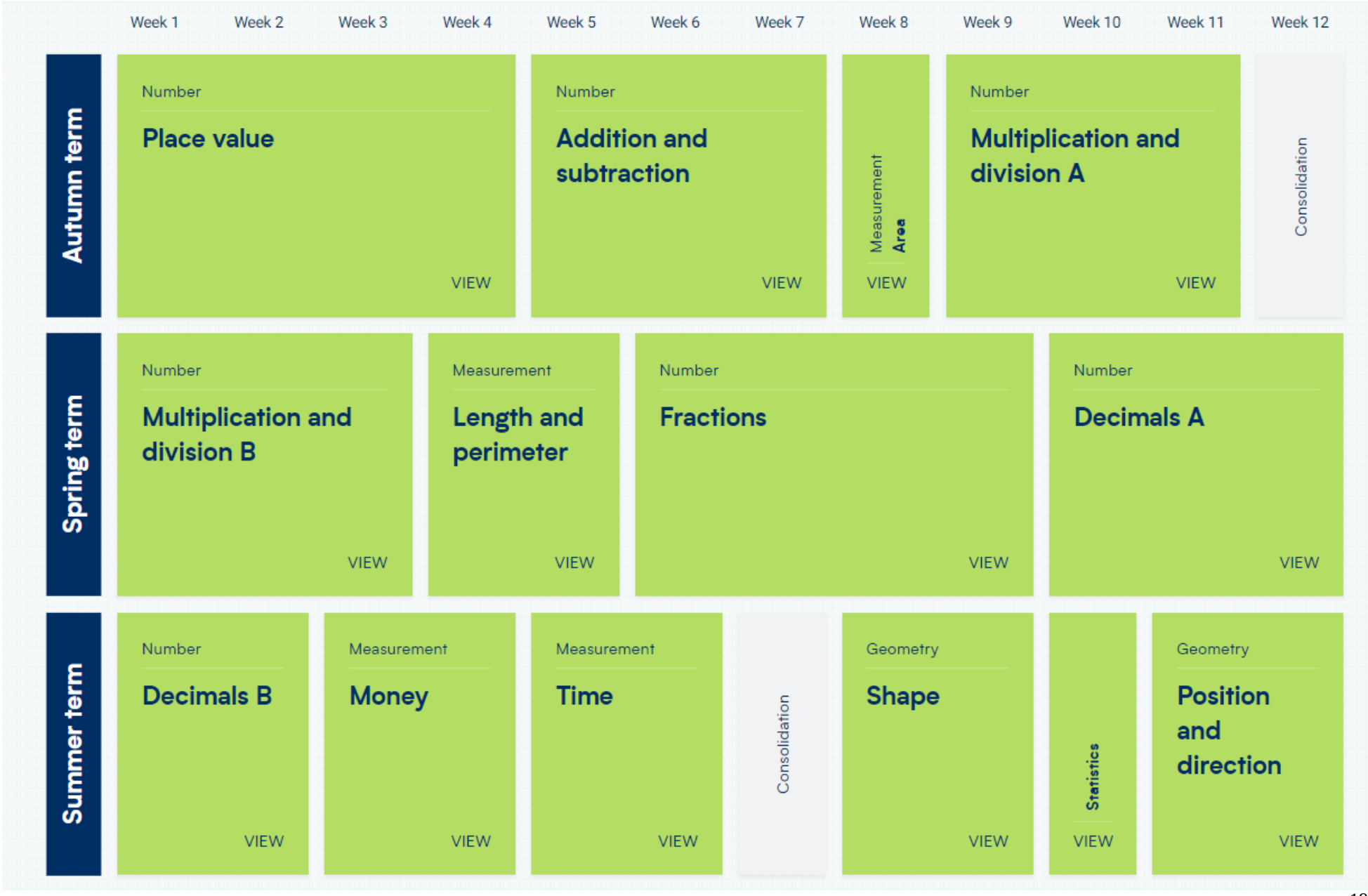
Year 1 | **Year 2** | Year 3 | Year 4 | Year 5 | Year 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition			Number: Subtraction		Number: Multiplication		Number: Division	
Spring	Measurement: Money		Geometry: Properties of shape		Number: Fractions				Measurement: Time		Geometry: Position and direction	Consolidation
Summer	Calculation, Consolidation and Problem Solving				Assessment	Statistics		Measurement: Length and Height		Measurement: Mass, Capacity and Temperature		Consolidation

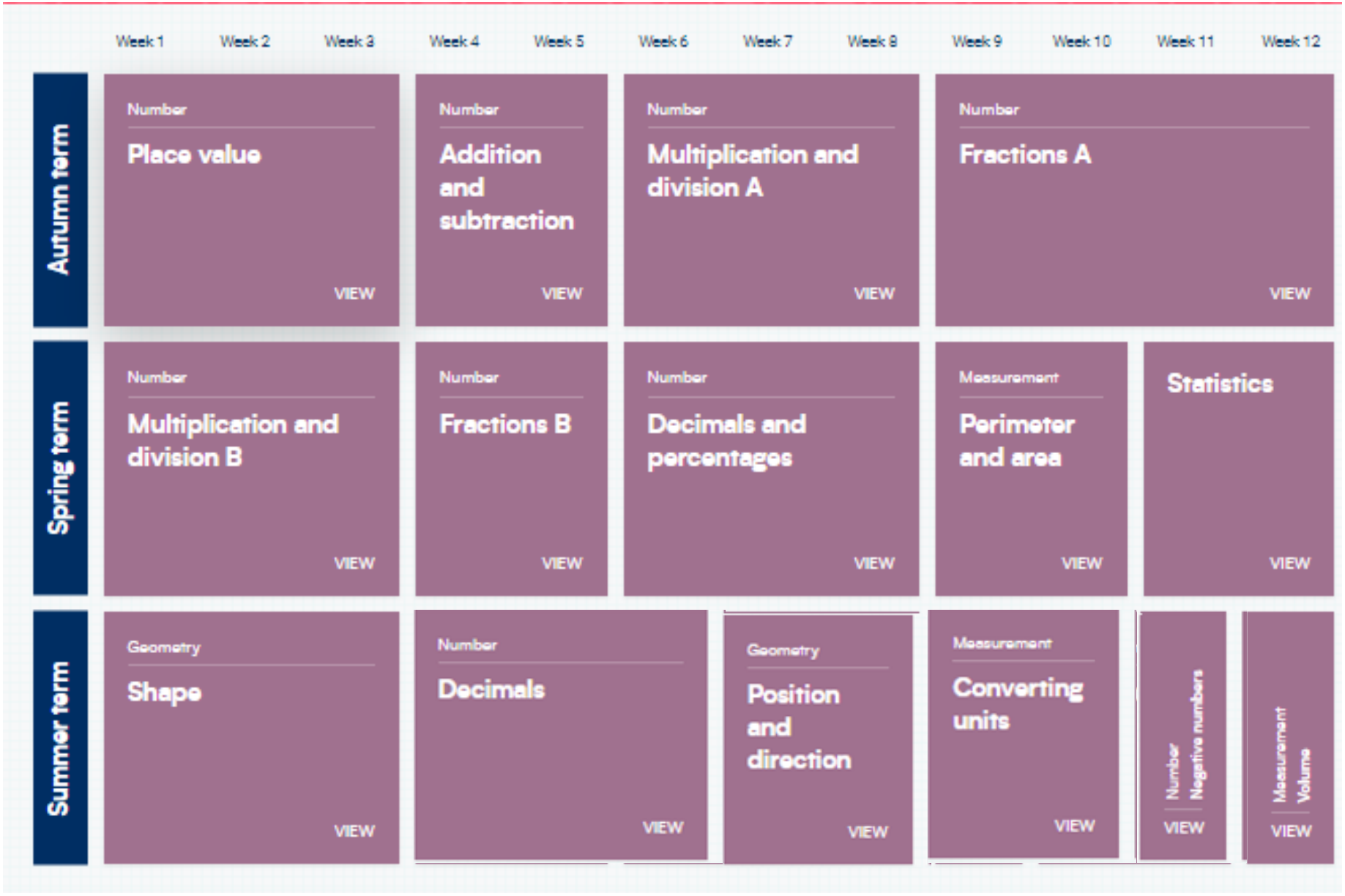
8. YEAR 3 LONG TERM PLAN



9. YEAR 4 LONG TERM PLAN



10. YEAR 5 LONG TERM PLAN



11. YEAR 6 LONG TERM PLAN

Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Year 6**

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition, Subtraction, Multiplication and Division					Number: Fractions				Geometry: Position and Direction
Spring	Number: Decimals		Number: Percentages		Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio		Statistics
Summer	Geometry: Properties of Shape			Consolidation or SATs preparation		Consolidation, investigations and preparations for KS3						

12. PROGRESSION IN PLACE VALUE

Foundation Stage Maths progression of skills document **Early Number sense - Counting**

Assessment Focus (1): Object Counting					
(a) I can use one-to-one correspondence when counting and understand that the last number said is the number in the set.	**(b)** I can count up to 5 objects (including different sized objects) moving each as they are counted.	**(c)** I understand that objects can be counted in any order or arrangement and the answer is still the same.	**(d)** I can count up to 10 objects (including different sized objects) moving each as they are counted.	**(e)** I can count out a given amount up to 10 (identified verbally or written) from a greater set.	**(f)** I can reliably count up to 20 objects moving each as they are counted and also take amounts up to 20 from a greater set.
Assessment Focus (2): Matching quantities and numerals - Counting sets of objects.					
(a) I can use one to one correspondence when counting and I understand the last number said is the number in the set	**(b)** I can count up to 3 objects (including different sized objects), moving each as they are counted. I can match the set to the numeral.	**(c)** I can count up to 5 objects (including different sized objects), moving each as they are counted. I can match the set to the numeral	**(d)** I can count up to 10 objects (including different sized objects), moving each as they are counted. I can match the set to the numeral.	**(e)** I can count up to 20 objects (including different sized objects), moving each as they are counted. I can match the set to the numeral. Count reliably with numbers from 1 to 20. Number ELG	
Assessment Focus (3): Perceptual Subitising (Instant recognition of small quantities) Conceptual Subitising (recognising small groups within a whole)					
(a) I can recognise familiar arrangements for numbers up to 5 when on a dice or domino	**(b)** I can identify quantities of objects up to 5 when placed in a dice or domino arrangement	**(c)** I can identify quantities of objects from 1 to 3 when arranged randomly	**(d)** I can explore arrangements of quantities within 5 using a ten frame	**(e)** I can state without counting (subitise) quantities within 5 **Subitise (recognise quantities without counting) up to 5. Number ELG**	
Assessment Focus (4): Counting pictures that cannot be moved.					
(a) I can count up to 5 objects, **moving** each as they are counted	**(b)** I can count up to 5 pictures that cannot be moved, **marking** each as they are counted.	**(c)** I can count up to 10 pictures that cannot be moved, **marking** each as they are counted	**(d)** I can count up to 20 pictures, that cannot be moved, **marking** each as they are counted	**(e)** I can count up to 20 pictures without marking using a strategy such as starting at one side, ensuring that all pictures are included and that none have been counted more than once. **Count reliably with numbers from 1 to 20. Number ELG**	

Foundation Stage Maths progression of skills document **Early Number sense - Counting**

Assessment Focus (1): Counting Objects - Counting Beyond Ten				
(a) I can count up to 10 objects, moving each as they are counted Count out a group of 10 objects from a greater set	**(b)** I can recognise that when a ten frame is full this represents 10 Recognise a 10 Numicon Shape	**(c)** I can arrange a group of 11 to 19 objects into 1 group of 10 plus another group	**(d)** I can use structured equipment number such as bundles of art straws, Unifix (tower of 10), Ten Frame with counters to create a group of 10 plus another group	**(e)** I can understand that 'teen' numbers are a group of 10 plus another number
Assessment Focus (2): Counting Objects - Counting in 10s				
(a) I can fill a Tens Frame and know this makes ten items.	**(b)** I can count out a tower of ten blocks. I know this is one full ten and no spare ones.	**(c)** I can make a series of tens towers and begin to count the pattern of multiples of 10, e.g., 10, 20, 30.	**(d)** I can make a given multiple of ten using Numicon, Tens Frames, Number Rods or Tens Towers. I can count in multiples of 10 and identify the number in the set.	**(e)** I can make a given multiple of ten using Numicon, Tens Frames, Number Rods or Tens Towers. I can count in multiples of 10 and identify the number in the set.
Assessment Focus (3): Counting Objects - Mathematical Representations and Graphics.				
(a) I can represent a given amount up to 3 using marks and pictures and explain my jottings.	**(b)** I can represent a given amount up to 5 using marks and pictures and explain my jottings.	**(c)** I can represent a given amount up to 10 using marks and pictures and explain my jottings.	**(d)** I can represent my simple mathematical ideas and calculations using pictures symbols and numerals and explain it.	**(e)** I can represent my simple mathematical ideas and calculations using pictures symbols and numerals and explain it.
Assessment Focus (4): Counting Objects - Mathematical Representations				
(a) I can represent a given amount up to 3 using objects and pictures.	**(b)** I can represent a given amount up to 5 using objects and pictures.	**(c)** I can represent a given amount up to 10 using objects and pictures.	**(d)** I can represent a given amount up to 20 using objects and pictures.	**(e)** I can represent my simple mathematical ideas and calculations using objects and pictures.
Assessment Focus (5): Comparing groups of objects or numbers				
(a) I can identify a set that has more and a set that has fewer by pointing/ highlighting when requested. (Sets are very obviously different)	**(b)** I can identify a set that has more and a set that has fewer by pointing/ highlighting when requested. (Range up to ten)	**(c)** I can identify a set that has more and a set that has fewer using the correct language. (Range up to ten)	**(d)** I can identify a set that has more and a set that has fewer using the correct language. (Range above ten and sets may be similar in amount)	**(e)** I can identify the difference in number between one set and another. **Have a deep understanding of number to 10, including the composition of each number. Number ELG**

ASSESSMENT FOCUS (1): Reading and ordering numerals				
(a) I can name the numerals 1-3 when shown out of order and I can place these numerals in order.	**(b)** I can name the numerals 1-5 when shown out of order and I can place these numerals in order.	**(c)** I can name the numerals 1-10 when shown out of order and I can place these numerals in order.	**(d)** I can name the numerals 1-20 when shown out of order and I can place these numerals in order.	**(e)** I can confidently identify and name the numeral that is after, before, between numerals to 20.
ASSESSMENT FOCUS (2): Ordering numerals				
(a) I can put the numerals 0 to 5 in order when all are given	**(b)** I can put the numerals 0 to 9 in order when all are given	**(c)** I can put the numerals 0 to 20 in order when all are given	**(d)** I can find the numeral that comes before, after or between a given numeral in a range to 20.	**(e)** I can order a random set of numerals within the range 0 to 20
ASSESSMENT FOCUS (3): Recording numerals				
(a) I can make marks to represent numerals.	**(b)** I can write the numerals 1 to 3 for a given purpose.	**(c)** I can write the numerals 0 to 5 for a given purpose.	**(d)** I can write the numerals 0 to 9 for a given purpose.	**(e)** I can write the numerals 0 to 20 for a given purpose.

Assessment Focus (1): Ordering pictorial number representations.				
(a) I can order the pictorial representations of the numbers from 0-5.	**(b)** I can order the pictorial representations of the numbers from 0-9.	**(c)** I can order the pictorial representations of the numbers from 0-20.	**(d)** I can find the pictorial number representation that comes before, after or between a given pictorial number representation in a range to 20.	**(e)** I can order a random set of pictorial number representations within the range 0 to 20.
Assessment Focus (2): Ordinal Numbers				
(a) I can follow instructions including ordinal numbers for first, second and third**.** (Lining up. Order in a game/ race)	**(b)** I can follow instructions including ordinal numbers for first, second, third- tenth. (Lining up. Order in a game/ race)	**(c)** I can correctly use some ordinal numbers in context, e.g., lining up or racing.	**(d)** I can correctly use many ordinal numbers in context, e.g., lining up or racing.	**(e)** I am beginning to read and write ordinal numbers. (Labelling a picture or results of a race)
Assessment Focus (3): Ordering numerals				
(a) I can put the numerals 0 to 5 in order when all are given	**(b)** I can put the numerals 0 to 9 in order when all are given	**(c)** I can put the numerals 0 to 20 in order when all are given	**(d)** I can find the numeral that comes before, after or between a given numeral in a range to 20.	**(e)** I can order a random set of numerals within the range 0 to 20

Foundation Stage Maths progression of skills document **Comparison**

Assessment Focus (1): More than/less than				
(a) I can compare two collections of items that are obviously different using the language 'more' and 'less'.	**(b)** I can count the amount of each group to find which has more and which has less.	**(c)** I can compare two groups of the same objects e.g. 2 groups of cubes.	**(d)** I can compare groups of different objects e.g. one group of cubes and one group of counters.	**(e)** I can compare two groups of different sized objects (where there are more of the smaller object) e.g. more small beads and less large animal toys.
Assessment Focus (2): Identify groups with the same number of things				
(a) I am beginning to understand through stories that groups can be equal.	**(b)** I can say when a group is 'equal' or 'the same'.	**(c)** I can check a group is equal by matching objects on a one-to-one basis.	**(d)** I can change two unequal groups into two equal groups e.g. a group of 5 and a group of 4.	
Assessment Focus (3): Comparing numbers/quantities				
(a) I can recognise when a quantity has been unfairly shared e.g. someone getting 5 and the other person getting 3.	**(b)** I can compare numbers that are far apart from each other (this could be supported with number lines, Unifix or Numicon)	**(c)** I can compare numbers that are near to each other (this could be supported with number lines, Unifix or Numicon)	**(d)** I can compare numbers that are next to each other (this could be supported with number lines, Unifix or Numicon)	**(e)** When shown two numerals I can compare these and say which is greater than, less than or the same as. **Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. NP:ELG**

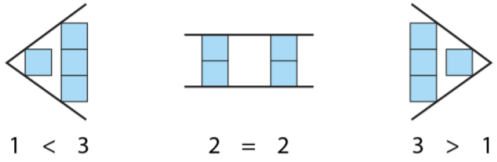
Primary Progression – Place Value

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value: Counting	• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • Count numbers to 100 in numerals; count in multiples of twos, fives and tens **Autumn 1 Autumn 4 Spring 2 Summer 4**	• count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward **Autumn 1**	• count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number **Autumn 1 Autumn 3**	• count in multiples of 6, 7, 9, 25 and 1000 • count backwards through zero to include negative numbers **Autumn 1**	• count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • count forwards and backwards with positive and negative whole numbers, including through zero **Autumn 1**	
Place Value: Represent	• identify and represent numbers using objects and pictorial representations • read and write numbers to 100 in numerals • read and write numbers from 1 to 20 in numerals and words. **Autumn 1 Autumn 4 Spring 2 Summer 4**	• read and write numbers to at least 100 in numerals and in words • identify, represent and estimate numbers using different representations, including the number line **Autumn 1**	• identify, represent and estimate numbers using different representations • read and write numbers up to 1000 in numerals and in words **Autumn 1**	• identify, represent and estimate numbers using different representations • read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value **Autumn 1**	• read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit • read Roman numerals to 1000 (M) and recognise years written in Roman numerals. **Autumn 1**	• read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit **Autumn 1**

Primary Progression – Place Value

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value : Use PV and Compare	• given a number, identify one more and one less **Autumn 1** **Autumn 4** **Spring 2** **Summer 4**	• recognise the place value of each digit in a two-digit number (tens, ones) • compare and order numbers from 0 up to 100; use <, > and = signs **Autumn 1**	• recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • compare and order numbers up to 1000 **Autumn 1**	• find 1000 more or less than a given number • recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • order and compare numbers beyond 1000 **Autumn 1**	• (read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit **Autumn 1**	• (read, write), order and compare numbers up to 10 000 000 and determine the value of each digit **Autumn 1**
Place Value: Problems& Rounding		• use place value and number facts to solve problems. **Autumn 1**	• solve number problems and practical problems involving these ideas **Autumn 1**	• round any number to the nearest 10, 100 or 1000 • solve number and practical problems that involve all of the above and with increasingly large positive numbers **Autumn 1**	• interpret negative numbers in context • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above **Autumn 1**	• round any whole number to a required degree of accuracy • use negative numbers in context, and calculate intervals across zero • solve number and practical problems that involve all of the above **Autumn 1**

13. PLACE VALUE - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
Odds Evens Ones Tens Hundreds Thousands Ten-thousands Hundred-thousands Millions Part Whole Digit Represents Exchange Compare More than >1 Less than < Equal (to) = Order Sequence Predict Pattern Rule Ascending Descending	One more than _ is _. On less than _ is _. The number before a given number is one less; the number after a given number is one more. 0 (zero) shows there is no amount. A whole can be split into two parts in lots of different ways. A whole is always bigger than a part of the whole. A part is always smaller than its whole. This is a whole group of _____ because we have all of them; none of them are missing. This is not a whole group of _____ because we don't have all of them; some of them are missing.  1 < 3 2 = 2 3 > 1 One is less than three. Two is equal to two. Three is more than/greater than one. 20 ones make 2 tens. There are 2 tens and 3 ones in 23. 2 tens + 3 ones = 23. 23 – the digit 2 represents 2 tens, the digit 3 represents 3 ones. 456 - The digit 5 is in the tens place. 456 - The digit in the hundreds place is 4. 456 - The value of the digit 6 is 6 ones. The number 326 can be written in words as three hundred and twenty-six. The number 1234 can be written in expanded form as 1000 + 200 + 30 +4. This number line starts at __. The last number on the line is ___. The value of each interval on the number line is ___. The number halfway along is ____ because it is halfway between ____ and ____.

Estimate Approximate exactly Round Positive Negative	To compare two-digit numbers, we need to compare the tens digit: if the tens digits are the same, we need to compare the ones digits. The blue square is in the 3rd place/position. This number sequence is ascending, the numbers are getting bigger in each step. This number sequence is descending, the numbers are getting smaller in each step. The odd one out is ___ because it is not a multiple of ___.

14. PROGRESSION IN ADDITION AND SUBTRACTION

Foundation Stage Maths progression of skills document **Finding one more and Addition**

Assessment Focus (1): Finding one more				
(a) I understand that to find one more, I need to add one object to an existing group of objects.	**(b)** I understand how to find one more object with sets in a range up to 5 by correctly adding on one more object.	**(c)** I know that one more is the next number in the counting sequence when counting forward in ones. -I find the number that is one more within 1-5 by using objects, number lines and mental recall.	**(d)** I know that one more is the next number in the counting sequence when counting forward in ones. -I find the number that is one more within 1-10 by using objects, number lines and mental recall.	**(e)** I know that one more is the next number in the counting sequence when counting forward in ones. -I find the number that is one more within 1-20 by using objects, number lines and mental recall.
Assessment Focus (2): Rote counting forwards				
(a) I can join in with rote counting from 1 to 5	**(b)** I can rote count from 1 to 5	**(c)** I can rote count from 1 to 10.	**(d)** I can rote count from 1 to 20.	**(e)** I can rote count from 1 to 20+ e.g. 50 or 100 **I can verbally count beyond 20, recognising the pattern of the counting system. NP. ELG.**
Assessment Focus (3): Counting On				
(a) I understand the concept of addition as combining sets of objects	**(b)** I know that two/three/four more is found by adding two/three/four objects to an existing group of objects	**(c)** I recognise that two more is one more and another one more, three more is one more, and one more and one more, etc.	**(d)** I understand and can use number lines to count on small jumps of 1, 2 or 3 more jumps.	**(e)** I can count on smaller numbers using mental calculation.
Assessment Focus (4): Addition - combining sets of objects				
(a) I understand the concept of addition as combining sets of objects	**(b)** I understand that the terms add, total, altogether relate to combining groups of objects	**(c)** I can combine two groups of objects (total within 5) counting how many are there.	**(d)** I can combine two groups of objects (total within 10) counting how many are there	**(e)** I can add two single-digit numbers totaling up to 10, using practical equipment
Assessment Focus (5): Addition using the Part-Part-Whole Model				
(a) I am beginning to combine two groups of objects to make a whole.	**(b)** I recognise that when the groups are combined the number of objects is more than either of the individual groups	**(c)** I can label the individual groups as **parts.**	**(d)** I can label the combined group of objects as the **whole**	**(e)** I understand the concept of addition by practically combining sets of objects to find how many using **"part – part – whole"**
Assessment Focus (6): Addition - First, Then and Now Stories				
(a) I am beginning to combine two groups of objects to make a whole.	**(b)** I can correctly follow an addition story, using First, Then and Now. I use practical equipment and my fingers to find the answers.	**(c)** I can correctly tell an addition story in the correct sequence using First, Then and Now using practical equipment to support me.	**(d)** I can correctly retell an addition story using first, then, now. I draw pictures and use the correct numerals to represent the parts and the whole.	**(e)** I can correctly retell an addition story using first, then and now. I draw out the pictures and record number sentences to represent the story.

Foundation Stage Maths progression of skills document **Finding one less and Subtraction**

Assessment Focus (1): Finding one less/ one fewer (objects)				
(a) I understand the concept of finding one less object as removing one amount from within another.	**(b)** I know that fewer and less mean the same thing, but fewer is used when counting objects and removing/ taking away objects from an existing group. (Working with objects to 5)	**(c)** I know that one less is the next number in the counting sequence when counting backwards in ones. -I find the number that is one less within 1-5 by using objects, number lines and mental recall.	**(d)** I know that one less is the next number in the counting sequence when counting backwards in ones. -I find the number that is one less within 1-10 by using objects, number lines and mental recall.	**(e)** I know that one less is the next number in the counting sequence when counting backwards in ones. -I find the number that is one less within 1-20 by using objects, number lines and mental recall.
Assessment Focus (2): Rote counting backwards				
(a) I can join in with rote count backwards from 5 to 1	**(b)** I can rote count backwards from 5 to 1	**(c)** I can rote count backwards from 10 to 1	**(d)** I can rote count backwards from 20 to 1.	**(e)** I can rote count backwards from larger numbers e.g. 50.
Assessment Focus (3): Counting Back				
(a) I understand the concept of take away and counting back one as the removal of one object.	**(b)** I know that two/three/four less is found by removing two/three/four objects from an existing group of objects	**(c)** I recognise that two less is one less and another one less, three less is one less, and one less and one less, etc.	**(d)** I understand and can use number lines to count back small jumps of 1, 2 or 3 more jumps.	**(e)** I can count back smaller numbers using mental calculation.
Assessment Focus (4): Subtraction - Removing items				
(a) I understand that the terms take away / subtract relate to removal of one group from another.	**(b)** I can remove a given amount from a greater set (with a whole of up to 5) counting to identify how many are left. I know the answer is how many are left.	**(c)** I can remove a given amount from a greater set (with a whole of up to 10) counting to identify how many are left	**(d)** I can use some mental calculation skills. **Automatically recall number bonds up to 5 (including subtraction facts) Number ELG**	**(e)** I can subtract a single-digit number from a number greater than 10 using practical equipment
Assessment Focus (5): Problem Solving with subtraction				
(a) I can solve simple problems using numbers to 5 with 1:1 support.	**(b)** I can solve simple problems using numbers to 5 with within a group.	**(c)** I can solve simple problems using numbers to 5. I can practically explore different ways using my own ideas. **Adding, subtracting and sharing.**	**(d)** I can solve simple problems using numbers to 10. I can practically explore different ways using my own ideas. **Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. NP:ELG**	**(e)** I can solve simple problems using numbers to 20. I can practically explore different ways using my own ideas. **Adding, subtracting and sharing.**

Foundation Stage Maths progression of skills document **Number Bonds and Problem solving**

Assessment Focus (1): Number Bonds				
(a) I can understand addition as combining sets of objects.	**(b)** I can understand the terms add, total, altogether relate to the idea of combing sets of objects.	**(c)** I can combine two sets (parts) to create five (whole) I can count sets in a range to 5 and practically find different ways using equipment. I can automatically recall number bonds to 5. **Automatically recall number bonds up to 5 and some number bonds to 10, including double facts. Number: ELG**	**(d)** I can combine two sets (parts) to create ten (whole) I can count sets in a range to 10 and practically find different ways using equipment.	**(e)** I can recall the pairs of numbers that bonds to total ten as a set of facts. **Automatically recall number bonds up to 5 and some number bonds to 10, including double facts. Number: ELG**
Assessment Focus (2): Problem Solving				
(a) I can solve simple problems using numbers to 5 with 1:1 support.	**(b)** I can solve simple problems using numbers to 5 with within a group.	**(c)** I can solve simple problems using numbers to 5. I can practically explore different ways using my own ideas. **Adding, subtracting and sharing.**	**(d)** I can solve simple problems using numbers to 10. I can practically explore different ways using my own ideas. **Adding, subtracting and sharing.** **Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. NP:ELG**	**(e)** I can solve simple problems using numbers to 20. I can practically explore different ways using my own ideas. **Adding, subtracting and sharing.**

Primary Progression – Addition & Subtraction

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition & Subtraction: Recall, Represent, Use	• read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • represent and use number bonds and related subtraction facts within 20 **Autumn 2 Spring 1**	• recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 • show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems **Autumn 2**	• estimate the answer to a calculation and use inverse operations to check answers **Autumn 2**	• estimate and use inverse operations to check answers to a calculation **Autumn 2**	• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy **Autumn 2**	

Primary Progression – Addition & Subtraction

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition & Subtraction: Calculations	• add and subtract one-digit and two-digit numbers to 20, including zero **Autumn 2** **Spring 1**	• add and subtract numbers using concrete objects, pictorial representations, and mentally, including: ➢ a two-digit number and ones ➢ a two-digit number and tens ➢ two two-digit numbers ➢ adding three one-digit numbers **Autumn 2**	• add and subtract numbers mentally, including: ➢ a three-digit number and ones ➢ a three-digit number and tens ➢ a three-digit number and hundreds • add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction **Autumn 2**	• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate **Autumn 2**	• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers **Autumn 2**	• perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations **Autumn 2**

Primary Progression – Addition & Subtraction

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition & Subtraction: Solve Problems	• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9 **Autumn 2 Spring 1**	• solve problems with addition and subtraction: ➢ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ➢ applying their increasing knowledge of mental and written methods **Autumn 2**	• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **Autumn 2**	• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why **Autumn 2**	• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign **Autumn 2**	• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why **Autumn 2**

15. ADDITION AND SUBTRACTION - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
Add Addition More Plus Increase Addend Sum Total Altogether	Addition 1 more is the next counting number. 2 more is the next odd/even number. 4 is a part, 3 is a part. The whole is 7. 4 apples plus 3 apples are equal to 7 apples. First, we have 4 apples, then we have 3 more apples, now we have 7 apples. 3 + 2 = 5 2 + 3 = 5 5 = 3 + 2 5 = 2 + 3 When 8 is the whole, the parts can be _and _. I need __ more to make 10. Addend plus addend is equal to the sum. Addend plus addend plus addend is equal to the sum addend + addend = sum addend + addend + addend = sum The sum of 3 and 5 is equal to the sum of 5 and 3. We can change the order of the addends and the sum remains the same. Addition can be done in any order. Addition is commutative. The ___ in the tens column represents ___ tens. In column addition we start at the right-hand side. The hundreds column represents __ hundreds plus __ hundreds which is equal to ___ hundreds. If there are ten or more ones we must regroup into tens and ones. If the column sum is equal to ten or more - we must regroup. 2 ones add 3 ones is equal to 5 ones. 2 tens add 3 tens is equal to 5 tens.

Subtract Take away Minus Less fewer Decrease Subtrahend Minuend Difference Inverse	2 hundreds add 3 hundreds is equal to 5 hundreds. <u>Subtraction</u> First, we have 6 apples, then 2 apples were eaten, now we have 4 apples. When zero is taken away the whole stays the same. When the whole group/amount is taken away, there will be nothing left. 6 take away 6 is 0. Minuend minus subtrahend is equal to the difference. minuend - subtrahend = difference Subtraction is not commutative. The order matters. The ___ in the tens column represents ___ tens. In column subtraction we start at the right-hand side. The hundreds column represents __ hundreds minus __ hundreds which is equal to ___ hundreds. If there are not enough ones to subtract from we must exchange from the tens. If there are insufficient units in any column sum we must exchange from the column to the left.

16. PROGRESSION IN MULTIPLICATION AND DVISION

Foundation Stage Maths progression of skills document **Doubling**

Assessment Focus (1): Identifying/ Finding sets that have been doubled and sets that have not been doubled.				
(a) I can find two sets of objects that are the same with 1:1 adult support. (1-3 objects)	**(b)** I can find two sets of objects that have the same number with some support. (1-5 objects)	**(c)** I can independently find two sets of objects that have the same number. (1-5 objects)	**(d)** I can independently find two sets of objects that have the same number. (1-10 objects)	**(e)** I can independently find two sets of objects that have the same number. (1-10 + objects- large sets)
Assessment Focus (2): Understand how to make sets the same in order to double them.				
(a) I can make another set that is the same for 1, 2 or 3 objects, with 1:1 adult support.	***(b)*** *I can make another set that is the same for 1-5 objects, with some adult support.*	***(c)*** *I can independently make another set that is the same. (1- 5 objects)*	***(d)*** *I can independently make another set that is the same. (1- 10 objects)*	***(e)*** *I can independently make another set that is the same. (1- 10+ objects – large sets)*
Assessment Focus (3): Combine two sets of objects to double a number and count to find an answer.				
(a) *I can begin to combine two sets of the same small number with 1:1 adult support. I am supported to use 1:1 counting and count all the objects.*	**(b)** I can combine two sets of the same number and count to find the total with some support. (1- 5 objects)	**(c)** I can independently combine two sets of the same number and count to find the total. (1- 5 objects)	**(d)** I can independently combine two sets of the same number and count to find the total. (1- 10 objects)	**(e)** I can independently combine two sets of the same number and count to find the total. (1-10 objects)
Assessment Focus (4): Combine two numbers (numerals) to double a number. – Developing mental recall.				
(a) *I am beginning to understand that to double, I need to add the same small number to itself. (1-3)*	**(b)** I understand that to double, I need to add the same small number to itself. I can do this with some support. (1-3)	**(c)** I understand that to double, I need to add the same number to itself. I can double the numbers 1-5.	**(d)** I understand that to double, I need to add the same number to itself. I can double the numbers 6-10.	**(e)** I understand that to double, I need to add the same number to itself. I can double the numbers 10+

Assessment Focus (1): Sharing				
(a) I understand that when an amount has been shared equally, all the parts are the same.	**(b)** I can recognise by counting, whether an amount has been shared.	**(c)** I can use practical equipment to share an amount into equal parts, in real life contexts.	**(d)** I understand and can identify if a number of items shared into equal parts.	**(e)** I understand and can explain if a number of items shared into equal parts. **Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. NP:ELG**
Assessment Focus (2): Halving				
(a) I understand that when an amount has been shared equally between two, both parts are the same.	**(b)** I can recognise by counting, whether an amount has been shared equally between two or not.	**(c)** I can use practical equipment and equal sharing to find one half of an even number of objects, in real life contexts.	**(d)** I understand that the terms halving and sharing between two relate to splitting into two equal parts.	**(e)** I understand that halving is sharing into two equal parts. **Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. NP:ELG**
Assessment Focus (3): Splitting - Part- Part Whole Model				
(a) I can use the word 'whole' to describe a set of objects, e.g., in a group of 6 biscuits, the 'whole' is 6. I can use the word 'part' to describe the individual groups.		**(b)** I can partition the 'whole' set of objects between two groups, e.g., 6 biscuits with 4 on one plate and 2 on another	**(c)** I can use the word 'part' to describe each partitioned set of objects, e.g., 6 biscuits with 4 on one plate and 2 on another, the parts are 4 and 2 **Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. NP:ELG**	
Assessment Focus (4): Pairing up – odds and evens.				
(a) I can find and make pairs of the same objects.	**(b)** I can pair up objects into twos from a set and talk about if all the objects have a partner. I can talk about if it is fair or not.	**(c)** I can begin to talk about if sets are odd and even by pairing up the objects into twos.	**(d)** I can begin to show an understanding of numbers being odd or even without needing to use objects to pair up.	**(e)** I can identify if numbers are odd or even by showing an understanding of the pattern of odd and even numbers. (mentally- not using objects) **Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. NP:ELG**

Primary Progression – Multiplication & Division

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication & Division: Recall, Represent, Use		• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot **Autumn 4 Spring 1**	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables **Autumn 3**	• recall multiplication and division facts for multiplication tables up to 12 × 12 • use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers • recognise and use factor pairs and commutativity in mental calculations **Autumn 4 Spring 1**	• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) **Autumn 4**	• identify common factors, common multiples and prime numbers • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. **Autumn 4**

Primary Progression – Multiplication & Division

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication & Division: Calculations		• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs **Autumn 4 Spring 1**	• write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods **Autumn 3 Spring 1**	• multiply two-digit and three-digit numbers by a one-digit number using formal written layout **Spring 1**	• multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers • multiply and divide numbers mentally drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 **Autumn 4 Spring 1 Summer 1**	• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context • perform mental calculations, including with mixed operations and large numbers **Autumn 2**

Primary Progression – Multiplication & Division

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication & Division: Solve Problems	• solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher **Summer 1**	• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts **Autumn 4 Spring 1**	• solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects **Spring 1**	• solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects **Spring 1**	• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates **Autumn 4 Spring 1**	• solve problems involving addition, subtraction, multiplication and division **Autumn 2**
Multiplication & Division: Combined Operations					• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign **Spring 1**	• use their knowledge of the order of operations to carry out calculations involving the four operations **Autumn 2**

17. MULTIPLICATION AND DIVISION - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
Lots of Groups of Times Multiply Multiplied by Multiple of product Repeated addition Array Row Column Double Inverse	Multiplication There are 2 groups of 4. The groups are all equal. There are 2 equal groups of 4. There are 3 groups of 5 which is equal to 15. There are 2 groups of 3 which is equal to 2 + 2 + 2 and 3 + 3 which is 6 altogether. Multiplying by 2 is the same as doubling. Multiplying by 4 is the same as doubling and doubling again. Each multiple of 8, is double the equivalent multiple of 4. Multiplication is Commutative. 2 x 5 is the same as 5 x 2. 2 lots of 5 is the same as 5 lots of 2. We can change the order of the factors and the product remains the same. The product of 3 and 5 is equal to the product of 5 and 3. Factor multiply factor is equal to the product. Factor multiply factor is equal to the product. *(NB Multiply, multiplied by and times are all acceptable and should be used interchangeably)* factor x factor = product factor x factor x factor = product When zero is a factor, the product is zero. We know 2 x 6 = 12, we also know 2 x 60 = 120. 5 x 30 = 3 x 50 9 x 12 = 9 x 10 + 9 x 2 The ___ in the tens column represents ___ tens. In short multiplication we start at the right-hand side. 32 X 3 ___ 3 times 2 ones is equal to 6 ones. 3 times 3 tens is equal to 9 tens.

Share
Share equally
Group in…
Equal groups of
Divide
Divide by
Divisible by
Divided into
Factor
Dividend
divisor
quotient
remainder
halve

If there are ten or more ones we must regroup into tens and ones.
If the column product is equal to ten or more - we must regroup.
The product in the multiplication equation has the same value as the dividend in the matching division equation.
The factors in the multiplication equation have the same values as the divisor and the quotient in the matching division equation.

Division

12 has been shared equally into 4 groups. I have 3 in each group. 4 groups of 3 make 12.
There are 20 pencils altogether. There are 5 pencils in each pot. There are 4 pots.
Dividing by 2 is the same as halving.

	Quotitive division contexts	Partitive division contexts	Division calculations with no associated context
Example problem	*'There are fifteen biscuits. If I put them into bags of five, how many bags will I need?'*	*'I have twenty conkers and I share them equally between five children. How many conkers does each child get?'*	$30 \div 10 = \square$
Key language	***'…divided into groups of…'*** *e.g.* *'Fifteen divided into groups of five is equal to three.'*	***'…divided between…'*** *e.g.* *Twenty divided between five is equal to four each.'*	***'…divided by…'*** *e.g.* *'Thirty divided by ten is equal to three.'*

Dividend divided by divisor is equal to the quotient.
Dividend ÷ divisor = quotient
12 is divided into groups of 3. There are 4 groups altogether.
12 is divided into 4 groups of 3.
14 is divided into 4 groups of 3 with a remainder of 2.

	The remainder is always less than the divisor. 4 is a multiple of 36, so when it is divided into groups of 4 there are none left over; there is no remainder. 5 is not a multiple of 36, so when it is divided into groups of 5 there are some left over; there is a remainder. If dividing the tens gives a remainder of one or more tens, we must exchange the remaining tens for ones. The dividend in the division equation has the same value as the product in the matching multiplication equation. The divisor and the quotient in the division equation have the same values as the factors in the multiplication equation. If I divide the dividend by 10, I must divide the divisor by 10 for the quotient to stay the same.

18. PROGRESSION IN FRACTIONS - DECIMALS AND PERCENTAGES

Primary Progression – Fractions, Decimals, Percentages

White Rose Maths

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Recognise and Write	• recognise, find and name a half as one of two equal parts of an object, shape or quantity • recognise, find and name a quarter as one of four equal parts of an object, shape or quantity **Summer 2**	• recognise, find, name and write fractions $\frac{1}{3}, \frac{1}{4}, \frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity **Spring 4**	• count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 • recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators • recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators **Spring 5**	• count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. **Spring 3**	• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] **Spring 2**	
Fractions: Compare		• Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ **Spring 4**	• recognise and show, using diagrams, equivalent fractions with small denominators • compare and order unit fractions, and fractions with the same denominators **Summer 1**	• recognise and show, using diagrams, families of common equivalent fractions **Spring 3**	• compare and order fractions whose denominators are all multiples of the same number **Spring 2**	• use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1 **Autumn 3**

Primary Progression – Fractions, Decimals, Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Calculations		• write simple fractions for example, $\frac{1}{2}$ of 6 = 3 **Spring 4**	• add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$] **Summer 1**	• add and subtract fractions with the same denominator **Spring 3**	• add and subtract fractions with the same denominator and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams **Spring 3**	• add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] • divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] **Autumn 3**
Fractions: Solve Problems			• solve problems that involve all of the above **Spring 5** **Summer 1**	• solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number **Spring 3**		

Primary Progression – Fractions, Decimals, Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Decimals: Recognise and Write				• recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ **Spring 4** **Summer 1**	• read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents **Spring 3**	• identify the value of each digit in numbers given to three decimal places **Spring 1**
Decimals: Compare				• round decimals with one decimal place to the nearest whole number • compare numbers with the same number of decimal places up to two decimal places **Summer 1**	• round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places **Spring 3**	

Primary Progression – Fractions, Decimals, Percentages

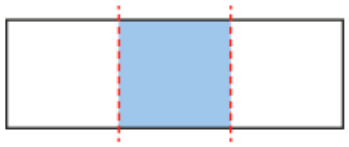
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Decimals: Calculations & Problems				• find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths **Spring 4**	• solve problems involving number up to three decimal places **Summer 1**	• multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places • multiply one-digit numbers with up to two decimal places by whole numbers • use written division methods in cases where the answer has up to two decimal places • solve problems which require answers to be rounded to specified degrees of accuracy **Spring 1**

Primary Progression – Fractions, Decimals, Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions, Decimals and Percentages				• solve simple measure and money problems involving fractions and decimals to two decimal places **Spring 3** **Spring 4** **Summer 1**	• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25 **Spring 3**	• associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts **Spring 1** **Spring 2**

19. FRACTIONS, DECIMALS AND PERCENTAGES - VOCABULARY AND STEM SENTENCES

<table>
<tr><th>Vocabulary</th><th>Stem Sentences</th></tr>
<tr><td>Part
Equal parts
Fraction
Improper Fraction
Proper Fraction
Unit Fraction
Mixed Number
Numerator
Denominator
Equivalent
Reduced to
Whole
Half
Quarter
Eighth
Third
Sixth
Fifth
Seventh
Ninth</td><td>Fractions
The whole has been divided into _ equal parts.
The denominator shows how many equal parts the whole has been divided into.
Each equal part is one-____ of the whole.
__of the parts have been shaded.
The numerator tells us the number of equal parts that are shaded/we are interested in.
Equal parts of the whole do not have to look the same.
A unit fraction has 1 as the numerator.

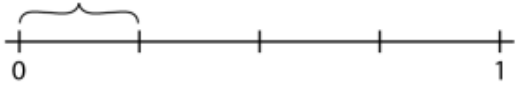
The whole is divided into 3 equal parts and we have 1 of them.
Each equal part is 1/3 of the whole.
<table>
<tr><th>Model</th><th>Say</th><th>Write</th><th>Notation</th></tr>
<tr><td rowspan="3"> 
one-third</td><td>'The rectangle has been divided…'</td><td>Write the division bar.</td><td rowspan="3">$\frac{1}{3}$</td></tr>
<tr><td>'…into 3 equal parts…'</td><td>Write '3' as the denominator.</td></tr>
<tr><td>'…and 1 of the parts is shaded.'</td><td>Write '1' as the numerator.</td></tr>
</table>
When the whole is the same, the greater the number of equal parts, the smaller each equal part is.
When the whole is the same, the smaller the number of equal parts, the bigger each equal part is.
When comparing unit fractions, the greater the denominator, the smaller the fraction.
When comparing unit fractions, the smaller the denominator, the greater/bigger the fraction.
When we compare fractions with the same denominator, the greater the numerator, the greater the fraction.</td></tr>
</table>

When we compare fractions with the same denominator, the smaller the numerator, the smaller the fraction.
When comparing fractions, the whole has to be the same.
If one-ninth is a part, then the whole is 9 times as much. Take 9 parts and put them together to make one whole.

The whole is 8, it is divided into 4 equal parts and we have 1 of them. $\frac{1}{4}$ of 8 is 2.

Model	Say	Write	Notation
 one-quarter	*'The strawberries have been divided…'*	Write the division bar.	$\frac{1}{4}$
	'…into 4 equal parts…'	Write '4' as the denominator.	
	'…and 1 of the parts is circled.'	Write '1' as the numerator.	

I have five one-sixths. I have five-sixths.



The line is divided into 4 equal parts. This allows us to count in quarters.
When the numerator and denominator are the same, the fraction is equal to one whole.
When adding fractions with the same denominator, just add the numerators.
When subtracting fractions with the same denominator, just add the numerators.
To subtract from one whole, convert the numerator and denominator to be the same.

Quantities made up of both whole numbers and a fractional part can be expressed as mixed numbers.

$2\frac{1}{4}$ - There are two groups of four-quarters which is eight-quarters, and one more, so that is nine-quarters.

	4 lots of 2/9 is equal to 8/9. The numerator of the fraction is multiplied by the whole number and the denominator stays the same. When a whole number is multiplied by a unit fraction, it makes the whole number smaller. When a whole number is multiplied by a proper fraction, it makes the whole number smaller. To calculate a fraction of a quantity, find the unit fraction of the quantity. Then multiply the unit fraction by the numerator. If we know the size of a unit fraction, we can work out the size of the whole. Equivalent fractions are when two or more fractions have the same value. The numerator has been scaled up/down by ___. The denominator has been scaled up/down by ___. These fractions are/are not equivalent. When the numerator and denominator are multiplied or divided by the same number, the value of the fraction remains the same. A fraction can be simplified when the numerator and denominator have a common factor other than one. To write a fraction in its simplest form, divide both the numerator and denominator by their highest common factor. Related fractions have denominators where one denominator is a multiple of the other. 1/16 and $\frac{1}{4}$ are related fractions because the denominator, 16, is a multiple of the other denominator, 4. To add or subtract fractions with different denominators, first convert to fractions with a common denominator. We can find a common denominator for two non-related fractions by multiplying their denominators. When multiplying unit fractions, multiply the denominators. When multiplying unit fractions, the product is smaller than the fractions being multiplied. To multiply fractions, we can multiply the numerators and multiply the denominators.

Tenth Hundredth Thousandth Decimal Decimal fraction Decimal point Decimal place	To divide a fraction by a whole number, we can change it to an equivalent multiplication. To divide by 5, we can multiply by 1/5. <u>Decimals</u> 0.1 = 1/10 = 1 tenth 0.1 is 1 whole divided into 10 equal parts. 0.01 = 1/100 = 1 hundredth 0.01 is 1 whole divided into 100 equal parts. 0.01 is 0.1 divided into 10 equal parts. 0.76 is zero point seven six (NOT zero point seventy-six) 0.76 is 7 tenths and 6 hundredths 0.76 is 76 hundredths 0.01 = 1/1000 = 1 thousandth 0.001 is 1 whole divided into 1000 equal parts. 0.001 is 0.1 divided into 100 equal parts and 0.01 divided into 10 equal parts. 0.765 is 7 tenths, 6 hundredths and 5 thousandths.

Percentage Per cent %	<u>Percentages</u> The percentage tells us how many parts per hundred. % represents number of parts per 100. In order to covert a percentage to a fraction, first convert it to a fraction with a denominator of 100. To find 50% of a number, halve it. To find 10% of a number, divide it by 10. To find 1% of a number, divide it by one hundred. 50% = $\frac{1}{2}$ = 0.5 10% = 1/10 = 0.1 1% = 1/100 = 0.01 To find 1% of a number, you divide the number by 100.

20. PROGRESSION IN RATIO AND PROPORTION

Primary Progression – Ratio and Proportion

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ratio and Proportion						• solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts • solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison • solve problems involving similar shapes where the scale factor is known or can be found • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. **Spring 6**

21. RATIO AND PROPORTION - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
Proportion In every For every Scale factor	Ratio shows the relationship between two values. For every one boy, there are two girls. This ratio can be shown as 1:2. In every 3 people, there will be 1 boy and 2 girls. 1/3 are boys and 2/3 are girls. Scale factor is used to describe how the size of an object changes. A scale factor of 2 would increase the size of the shape 2 times.

22. PROGRESSION IN ALGEBRA

Primary Progression – Algebra

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Algebra	• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9	• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	• solve problems, including missing number problems			• use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy an equation with two unknowns • enumerate possibilities of combinations of two variables. **Spring 3**

Note – although algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by the 'missing number' objectives from Y1/2/3

23. ALGEBRA - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
One-step function Two-step function Function machine Input Output Expression Operation Variable Substitute Formula	If the input is ___ then the output is ___ because the function is___. If the output is ___ then the input was ___ because the function is___. The difference between each step is __. The rule is __ to the previous term. An expression can take different values – X + 5 An equation can be solved - X + 5 = 11.2

24. PROGRESSION IN MEASUREMENT

Foundation Stage Maths progression of skills document **Measures - Weight**

Assessment Focus (1): Comparing Weights				
(a) I can make direct comparisons and compare the weight of 2 items.	**(b)** I can find another item of similar weight to a given one.	**(c)** I can use a systematic approach to directly compare each item against another.	**(d)** I can make direct comparisons and compare and order the weight of 3 items from heaviest to lightest/ lightest to heaviest.	**(e)** I can make direct comparisons and compare and order the weight of 3+ items from heaviest to lightest/ lightest to heaviest.
Assessment Focus (2): Using balances				
(a) I can explore what happens when two objects are placed on each side of a balance scale.	**(b)** I can use a balance scale to compare the weights of two objects. I understand the lower side is the heavier object and the higher side contains the lighter object.	**(c)** I understand that if the balance scale is level, the objects being compared are equal in weight.		
Assessment Focus (3): Using mathematical language to describe measuring weight.				
(a) I understand that weight refers to how heavy or light an object is.	**(b)** I can identify (point to) the heavy and light object when asked to.	**(c)** I can correctly use the term, 'heavy' when referring to an object.	**(d)** I can correctly use the term, 'light' when referring to an object.	**(e)** I can correctly use the terms heavy/ heavier, heaviest, light, lighter and lightest as I compare, describe and order the weight of objects.
Assessment Focus (4): Using numbers and values to represent my measuring work.				
(a) I understand that the weight of something can be represented by a number.	**(b)** I understand that to measure the weight of an object on the balance scale, the object must be placed on one side and the counting items placed at the other side, until the balance is level.	**(c)** I can use non-standard units (which are not uniform, e.g. vary in size) to measure the weight of objects.	**(d)** I can use non-standard units (which are uniform, e.g. Unifix) to measure the weight of objects.	

Foundation Stage Maths progression of skills document **Measures – Length and width**

Assessment Focus (1): Comparing Lengths				
(a) I can make direct comparisons and compare the length/height/width of 2 items.	**(b)** I can find another item of similar length/height/width to a given one.	**(c)** I can use a systematic approach to directly compare each item against another.	**(d)** I can make direct comparisons and compare and order the length/height/ width of 3 items from longest/tallest to shortest/ shortest to longest/ narrowest to widest.	**(e)** I can make direct comparisons and compare and order the length of 3+ items from longest/tallest to shortest/ shortest to longest/ tallest/ narrowest to widest.
Assessment Focus (2): Direct Comparison of length				
(a) I understand that if I am going to compare the length/height of two items, they need to be pointing in the same direction.	**(b)** I understand that if I am going to compare the length/height of two items, it is easier if they line up at one end.	**(c)** I can line up a set of objects from the same starting point, so that they can be directed compared fairly and correctly.	**(d)** I can correctly identify the longest/tallest and shortest object in a set by lining items up from the same starting point and comparing fairly.	
Assessment Focus (3): Using mathematical language to describe measuring length				
(a) I understand that length refers to how long or short an object is.	**(b)** I can identify (point to) the long and short object when asked to.	**(c)** I can correctly use the term, 'long/ longer/ longest' when referring to an object.	**(d)** I can correctly use the term, 'short/ shorter/ shortest' when referring to an object.	**(e)** I can correctly use the terms, long/ longer/ longest, short/ shorter/ shortest', as I compare, describe and order the length of objects.
Assessment Focus (4): Using mathematical language to describe measuring height				
(a) I understand that height refers to how tall or short an object is.	**(b)** I can identify (point to) the tall and short object when asked to.	**(c)** I can correctly use the term, 'tall/ taller/ tallest' when referring to an object.	**(d)** I can correctly use the term, 'short/ shorter/ shortest' when referring to an object.	**(e)** I can correctly use the terms, tall/ taller/ tallest, short/ shorter/ shortest', as I compare, describe and order the height of objects.
Assessment Focus (5): Using numbers and values to represent my measuring work.				
(a) I understand that the length of something can be represented by a number.	**(b)** I can use non-standard units (which are not uniform, e.g. vary in size) to measure the length of objects.	**(c)** I can use non-standard units (which are uniform, e.g. Unifix) to measure the length of objects.		

Assessment Focus (1): Using language to describe the passing of time.				
(a) I can understand that I can compare events using words such as 'before' and 'after'.	**(b)** I can use the word 'before', understanding that it refers to preceding a particular event and that the word 'after' refers to following a particular event or item.	**(c)** I can use the word 'today', understanding that it refers to the current day.	**(d)** I can use and understand that the word 'yesterday', refers to the day before today and 'tomorrow' refers to the day after today.	**(e)** I can understand and correctly use language – before, after, yesterday, today, tomorrow
Assessment Focus (2): Measuring time: Sequencing familiar events/the day.				
(a) I can talk about significant times of the day, e.g. home time, lunch time, snack time, bedtime, etc.	**(b)** I understand and can use the words 'before' and 'after' when describing the order of two events.	**(c)** I can use the word 'between', understanding that it refers to the middle, or second of three events.	**(d)** I can sequence two or three familiar events and describe the sequence using everyday language.	**(e)** I can sequence four or more familiar events and describe the sequence.
Assessment Focus (3): Days of the Week				
(a) I can join in with rhymes for the days of the week in order	**(b)** I know that some of the words in days of the week rhymes are days	**(c)** I can name the days of the week (not necessarily in order)	**(d)** I know the names of the days of the week	**(e)** I can say the names of the days of the week in order

Foundation Stage Maths progression of skills document **Measures – Capacity**

Assessment Focus (1): Vocabulary for filling		
(a) I can understand that capacity refers to how much a container can hold when it is full	**(b)** I can use the terms full and empty to describe volume / capacity	**(c)** I can use the terms nearly full and nearly empty to describe volume

Assessment Focus (2): Comparing capacities			
(a) I can compare the volume of two of the same containers holding different amounts	**(b)** I can use a systematic approach to compare each identical container against the others	**(c)** I can order a set of three identical container from most full to least full	**(d)** I can order a set of three identical container from least full to most full

Assessment Focus (3): Comparing volume		
(a) I understand that comparing the volume of two of the same containers that hold different amounts, is easier if they are near to each other	**(b)** I understand that comparing the volume of two of the same containers that hold different amounts, is easier if their bases are on the same level	**(c)** I can compare the volumes of two of the same containers that hold different amounts and use the terms more and less

Primary Progression – Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Using Measures	• compare, describe and solve practical problems for: ➢ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] ➢ mass/weight [for example, heavy/light, heavier than, lighter than] ➢ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] ➢ time [for example, quicker, slower, earlier, later] • measure and begin to record the following: ➢ lengths and heights ➢ mass/weight ➢ capacity and volume ➢ time (hours, minutes, seconds) **Spring 3** **Spring 4** **Summer 6**	• choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels • compare and order lengths, mass, volume/capacity and record the results using >, < and = **Spring 5** **Summer 4**	• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) **Spring 4** **Summer 4**	• Convert between different units of measure [for example, kilometre to metre; hour to minute] • estimate, compare and calculate different measures **Autumn 3** **Spring 2** **Summer 3**	• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling **Summer 1** **Summer 4** **Summer 5**	• solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places • convert between miles and kilometres **Spring 4**

Primary Progression – Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Money	• recognise and know the value of different denominations of coins and notes **Summer 5**	• recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value • find different combinations of coins that equal the same amounts of money • solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change **Autumn 3**	• add and subtract amounts of money to give change, using both £ and p in practical contexts **Spring 2**	• estimate, compare and calculate different measures, including money in pounds and pence **Summer 2**	• use all four operations to solve problems involving measure [for example, money] **Summer 1**	

Primary Progression – Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Time	• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] • recognise and use language relating to dates, including days of the week, weeks, months and years • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times **Summer 6**	• compare and sequence intervals of time • tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times • know the number of minutes in an hour and the number of hours in a day **Summer 3**	• tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks • estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight • know the number of seconds in a minute and the number of days in each month, year and leap year • compare durations of events [for example to calculate the time taken by particular events or tasks] **Summer 2**	• read, write and convert time between analogue and digital 12- and 24-hour clocks • solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days **Summer 3**	• solve problems involving converting between units of time **Summer 4**	• use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa **Year 5 Summer 4**

Primary Progression – Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Perimeter, Area, Volume			• measure the perimeter of simple 2-D shapes **Spring 4**	• measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • find the area of rectilinear shapes by counting squares **Autumn 3** **Spring 2**	• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes • estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] **Autumn 5** **Summer 5**	• recognise that shapes with the same areas can have different perimeters and vice versa • recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3] **Spring 5**

25. MEASUREMENT - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
Measure, Size	Length and Height
Compare, Scales	The ____ is taller/shorter/longer than the ____.
Estimate	When we use a ruler/tape measure we always start from 0cm.
	100 centimetres are equivalent to 1 metre. There are 100cm in 1m.
Length, Width	There are 50cm in $\frac{1}{2}$ m.
Height, Depth	10 millimetres are equivalent to 1 centimetre. There are 10mm in 1cm.
Long/ short	There are 5mm in $\frac{1}{2}$ cm.
Tall/high/Low	1000 metres are equivalent to 1 kilometre. There are 1000m in 1km.
Wide/narrow	There are 500m in $\frac{1}{2}$ km.
Deep/shallow	
Thick/thin	Perimeter
Metre	The perimeter is the length around a 2d shape.
Centimetre	The perimeter of a shape can be found by adding the lengths of all the sides together.
Perimeter	The perimeter of a rectangle can be found by adding the length and width together and multiplying by 2.
	The perimeter of a square can be found by multiplying the length of one side by 4.
Area	Area
Covers	Area is the amount of space taken up by a 2D shape or surface.
Surface	Area is measured in squares.
cm^2	Area of rectangles can be found by multiply the length by width.
m^2	Area of rectangle = l x h
mm^2	The area of a triangle will be half the area of a rectangle with the same height and length.
	Area of triangle = base x height ÷ 2

Weigh Balances Heavy/light Kilogram/gram	<u>Weight</u> The _____ is heavier/lighter than the _____. The _____ is heavier than the _____ because the scales have gone down that side. The _____ weighs the same as the _____ because the scales are balanced. The ___ weighs the same as _____ cubes. The _____ weighs ___ grams. Grams can be represented by g. The mass of the _____ is ___grams. The _____ weighs ___ kilograms. The mass of the _____ is ___kilograms. Kilograms can be represented by kg.
Capacity Full/half full/ empty Contains Litre Millilitre	<u>Capacity and Volume</u> The container is full/nearly full/empty/nearly empty. The capacity of the jug is ___ cups. The containers capacity is _____ ml. Millilitres can be represented by ml. The containers capacity is _____ l. Litres can be represented by l. The volume is the amount of solid space something takes up. Volume is the space occupied by a 3-D object. Volume is measured in mm^3, cm^3 or m^3. Volume of a cuboid can be found by multiplying the length, width and height. Volume = l x w x h = area of base x height

Time	Time
Days of week	Breakfast happens before lunch. Bedtime happens after story time.
Months of Year	First, _____, next ____, then____.
Seasons	Today is _____.
Fortnight	Tomorrow is _____.
Morning/ afternoon/	Yesterday was_____.
evening/ night	There are 7 days in a week. The days are called Monday, Tuesday, Wednesday, Thursday, Friday,
Today/ yesterday/	Saturday and Sunday.
tomorrow	There are 12 months in a year. The months are called January, February, March, April, May, June, July,
Hour	August, September, October, November and December.
Minute	The time is __o'clock. The minute hand points to the number 12. The hour hand points to ____.
Second	The time is half past __. The minute hand points to the number 6. The hour hand points halfway between
O'clock	____ and ____.
Half past	The time is quarter past __. The minute hand points to the number 3. The hour hand points just after
Quarter past	____.
Quarter to	The time is quarter to __. The minute hand points to the number 9. The hour hand points just before
Digital	____.
Analogue	There are 60 minutes in an hour.
	There are 24 hours in a day.
Money	Money
Coin	The value of this coin is ____.
Pence	Ten 1 pence coins is equal to one 10 pence coin. Ten 1ps = 10p
Penny	There are 100 pennies in a pound. 100p = £1. One pound is 100 pence.
Pound	The value of this note is ____.
Price /cost	1p and 2p are copper coins.
Buy/ bought	5p, 10p, 20p and 50p are silver coins.

Pay Change Degrees Celsius (^0C)	There are 8 different coins 1p, 2p, 5p, 10p, 20p, 50p, £1 and £2. There are 4 values of bank notes £5, £10, £20 and £50. <u>Temperature</u> The temperature is ___^0C. The temperate _____ is warmer/hotter/cooler/colder than ____. The difference in temperature between the ____ and the ____ is __ degrees.

26. PROGRESSION IN GEOMETRY

Foundation Stage Maths progression of skills document **Shape**

Assessment Focus (1): Naming and identifying 2D Shapes				
(a) I can identify (point to) some of the common 2-D shapes for star, circle, and square.	**(b)** I can identify and name the common regular 2-D shapes for circle, square, triangle and rectangle/oblong.	**(c)** I can name common 2-D shapes including hexagons and pentagons, and I know that rectangles and oblongs are the same shapes.	**(d)** I securely use the correct terms to name common 2-D shapes, as I describe the 2-D shapes in my pictures, models and work.	**(e)** I am learning to recognise and name other 2-D shapes such as irregular shapes, and quadrilaterals such as the rhombus, kite and parallelogram.
Assessment Focus (2): Naming and identifying 3D Shapes				
(a) I can find/identify 3D shapes from sets of 2D and 3D shapes as I begin to recognise the properties of 3-D shapes.	**(b)** I can identify (point to) some of the common 3-D shapes, e.g. cube, cone or sphere.	**(c)** I can recognise and name the common 3-D shapes for cube, cuboid, sphere and cone.	**(d)** I can securely recognise, name and describe 3-D shapes - cube, cuboid, sphere, cone, cylinder and pyramid in the context of my pictures, models and work.	**(e)** I am now learning to recognise and name other 3-D shapes such as the different types of pyramids and prisms.
Assessment Focus (3): Describing Shapes				
(a) As I play with and explore shapes, I can use informal language such as pointy, round or flat.	**(b)** I can understand and begin to use the terms, 'straight', 'flat', 'curved' and 'edges' as I explore and identify shapes in the environment.	**(c)** I can show an understanding that sides and corners refer to 2D shapes, and I can identify these on common 2D shapes.	**(d)** I can show an understanding that faces and solid refer to 3D shapes, and I can identify and talk about these on common 3D shapes. .	**(e)** I can describe 2D and 3D shapes, using mathematical language. Including language such as curved, pointed, sides, faces, solid, flat and vertex/vertices (corners on 3D). I can count faces and vertices.
Assessment Focus (4): Spatial Reasoning				
(a) I can match simple shapes by finding a shape that is the same.	**(b)** I can complete a simple jigsaw or shape puzzle.	**(c)** When completing jigsaws and shape puzzles, I can talk about why shapes will not fit, or why I chose a particular shape.	**(d)** I can copy 2D and 3D shape arrangements. I can explain where I am placing shapes in relation to one another. (using positional language) I can make 2D and 3D shapes using a range of resources.	**(e)** I can explain similarities and differences between shapes. I use my understanding of shapes to create my own shape designs, models and templates.
Assessment Focus (5): Using 2D shapes to make pictures.				
(a) I can explore using shapes and make arrangements with shapes. (No clear representation)	**(b)** I can create simple pictures with 2D shapes.	**(c)** I can create pictures using 2D shapes, and I can name the shapes I used.	**(d)** I can create pictures with 2D shapes and make careful choices about how shapes can tessellate and fit together.	**(e)** I can create pictures using a range of 2D shapes. I explain the choices that I have made about how the shapes fit together. I describe the properties of the shapes as I explain.
Assessment Focus (6): Combining shapes to make new shapes - spatial reasoning				

(a) I can sort and recognise shapes with the same properties.	**(b)** I can explore putting shapes together to make different arrangements and shapes.	**(c)** I can explore putting shapes together to make familiar recognisable shapes.	**(d)** I can combine shapes to make familiar shapes, and I can name the shapes that I have made.	**(e)** I can quickly identify how shapes can be placed together to create other shapes without the need for exploration.

Foundation Stage Maths progression of skills document **Patterns (of a shape not numbers)**

Assessment Focus (1): Repeating Patterns				
(a) I can recognise when a set of objects or shapes are placed in a repeating pattern, and when they are not and talk about them with informal language E.g., spots and points.	**(b)** I can identify a simple abababab pattern, and I can say what the pattern is. E.g., red, blue, red, blue.	**(c)** I can talk about, copy, continue and make a simple abababab (2) pattern. I notice mistakes in patterns.	**(d)** I can talk about, copy, continue and make a simple abcabc patterns (3) and abbabb patterns. I notice mistakes in patterns.	**(e)** I can recognise, describe, copy, continue, make and correct patterns of number, shape and objects for abcdabcd patterns (4) and AABBCAABBC patterns.
Assessment Focus (2): Symmetrical pictures and models (Reflective Symmetry)				
(a) I can recognise shapes and pictures that are the same.	**(b)** I can recognise when shapes are the same on each side of a line and have two mirror-image halves. I explore by folding and using 'mirror lines' and mirrors.	**(c)** I can find the two equal halves of a shape by using folding and mirror symmetry.	**(d)** I can make simple pictures and models that include one reflective line of symmetry. I show an understanding of vertical symmetry (5 years)	**(e)** I can make more detailed pictures and models that include one reflective line of symmetry. I show an understanding of horizontal symmetry (6 years) and diagonal symmetry (7years)

Primary Progression – Geometry

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: 2-D Shapes	• recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles] **Autumn 3**	• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] • compare and sort common 2-D shapes and everyday objects **Spring 3**	• draw 2-D shapes **Summer 3**	• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify lines of symmetry in 2-D shapes presented in different orientations **Summer 5**	• distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • use the properties of rectangles to deduce related facts and find missing lengths and angles **Summer 2**	• draw 2-D shapes using given dimensions and angles • compare and classify geometric shapes based on their properties and sizes • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius **Summer 1**
Geometry: 3-D Shapes	• recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] **Autumn 3**	• recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. • compare and sort common 3-D shapes and everyday objects **Spring 3**	• make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them **Summer 3**		• identify 3-D shapes, including cubes and other cuboids, from 2-D representations **Summer 2**	• recognise, describe and build simple 3-D shapes, including making nets **Summer 1**

Primary Progression – Geometry

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: Angles & Lines			• recognise angles as a property of shape or a description of a turn • identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle • identify horizontal and vertical lines and pairs of perpendicular and parallel lines **Summer 3**	• identify acute and obtuse angles and compare and order angles up to two right angles by size • identify lines of symmetry in 2-D shapes presented in different orientations • complete a simple symmetric figure with respect to a specific line of symmetry **Summer 5**	• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees • identify: ➢ angles at a point and one whole turn (total 360°) ➢ angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) ➢ other multiples of 90° **Summer 2**	• find unknown angles in any triangles, quadrilaterals, and regular polygons • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **Summer 1**

Primary Progression – Geometry

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: Position & Direction	• describe position, direction and movement, including whole, half, quarter and three-quarter turns **Summer 3**	• order and arrange combinations of mathematical objects in patterns and sequences • use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) **Spring 3** **Summer 1**		• describe positions on a 2-D grid as coordinates in the first quadrant • describe movements between positions as translations of a given unit to the left/right and up/down • plot specified points and draw sides to complete a given polygon **Summer 6**	• identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed **Summer 3**	• describe positions on the full coordinate grid (all four quadrants) • draw and translate simple shapes on the coordinate plane, and reflect them in the axes **Autumn 4**

27. GEOMETRY - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
Shape Pattern Flat / Curved /Straight / Round Corner/ Vertex / vertices / Point Face Side /Edge Surface 2D Two-dimensional Regular/ Irregular Circle Radius /Diameter Centre /Circumference /Arc Semi-circle Triangle Equilateral /Isosceles Scalene / Right-angled Quadrilateral Square /Rhombus Rectangle /Oblong Parallelogram/Trapezium / Kite Pentagon/ Hexagon / Heptagon Octagon / Polygon Star	2D A vertex is where 2 lines meet at a point. Vertices are where 2 lines meet at a point. A circle has one side. A triangle has 3 sides and 3 vertices. An equilateral triangle has 3 sides of equal lengths and 3 equal angles. (60^{o}) An isosceles triangle has 3 sides, 2 sides are of equal length. 2 angles are equal. A scalene triangle has 3 sides, all sides are of different length. All angles are different. A right-angled triangle can be an isosceles or scalene triangle. One angle is 90^{o}. A square has 4 sides of equal length. A square has 4 right angles. A square has 2 pairs of parallel lines. A rectangle has 4 sides. A rectangle has 4 right angles. A rectangle has 2 pairs of parallel lines. A rhombus has 4 sides of equal length. A rhombus has 2 pairs of parallel lines. A parallelogram has 4 sides. A parallelogram has 2 pairs of parallel lines. A kite has 4 sides. A kite has 2 pairs of adjacent sides with equal lengths. This is a pentagon because it has 5 sides and 5 vertices. A regular pentagon has 5 sides of equal length and 5 equal angles. Circles The circumference is the distance around the circle. The radius is the length from the centre of the circle to the circumference. The radius is half the length of the diameter. The diameter is a straight line that passes through the centre of the circle to touch both sides of the circumference. The diameter is twice the length of the radius.

3D Three-dimensional	3D
Hollow /Solid	A face is a flat or curved surface on a 3D shape.
Cube /Cuboid	An edge is where two faces or a face and a curved surface join.
Pyramid	A vertex is where 2 or more edges meet. Vertices are where 2 or more edges meet.
Sphere	The point at the top of a cone can be called a vertex or an apex.
Cone	
Cylinder	A cube has six square faces. A cube has 12 edges. A cube has 8 vertices. A cube has all flat faces
Prism	A cube is a cuboid where all the faces are squares.
Tetrahedron	A cuboid has six rectangular faces. A cuboid has 12 edges. A cube has 8 vertices. A cuboid has all
Polyhedron	flat faces.
Octahedron	A sphere has one face and no edges or vertices. A sphere is curved.
Dodecahedron	A net is a 2d figure that can be folded to create a 3d shape.
Net	
Position	
Over/ Under /Underneath	Position and Direction
Above / Below /Top / Bottom	The shape has turned a full/half/quarter/three-quarter turn.
Side /In /On /Outside/ Inside	The ___ is to the right/left of the ___.
Around /In front/Behind	The ___ is above/below the ___.
Before /After / Beside /Next to	In between _____ and _____ is _____.
Opposite / Between/ Up/down	The ___ has moved 1 square to the right/left/up/down.
Direction / Left/right	The ___ has turned clockwise/anticlockwise.
Whole turn / half turn/quarter	
turn	Angles and lines
Angle / Acute/ Obtuse /Reflex	Angle is a measure of turn. It is measured in degrees.
Protractor / Degree	A right – angle is 90°.

Hatch mark	An acute angle is an angle that is less than 90°.
Right angle /Straight line	An obtuse angle is greater than 90 ° and less than 180 °.
Clockwise/anti-clockwise	A reflex angle is an angle greater than 180 °.
Ascend/descend	There are 180 ° on a straight line. There are 2 right angles on a straight line.
Grid / Row/ column	Angles around a point add to 360°.
Origin / Coordinates	Opposite angles formed by two intersecting lines are equal.
x-axis / y-axis/ quadrant	Angles in a triangle total 180 °.
Compass points	Angles in a quadrilateral total 360°.
North N/ South S	Hatch marks show lines of equal lengths.
East E/ West W	Parallel lines are always equal distance apart.
NE, SE, SW, NW	Parallel lines will never intersect.
Horizontal/ vertical/ Diagonal	A horizontal line is parallel to the horizon.
Parallel/perpendicular	A vertical line is at right angles to the horizon.
	The x-axis of a graph is the horizontal axis.
	The y-axis of a graph is the vertical axis of a graph.
Rotate/rotation	<u>Symmetry</u>
Symmetrical	An object is symmetrical when one half is a mirror image of the other half.
Line of symmetry	An object may be divided by one or more lines of symmetry.
Axis of symmetry	A line of symmetry or (axis of symmetry) divides a symmetrical shape in half.
Line symmetry	A reflection is when a shape is flipped over a mirror line.
Reflective symmetry	All points on an object and its reflection are equal distance from the mirror line.
Mirror line	
Reflection/ reflect	
Translation/ translate	

28. PROGRESSION IN STATISTICS

Primary Progression – Statistics

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Statistics: Present and Interpret		• interpret and construct simple pictograms, tally charts, block diagrams and simple tables **Spring 2**	• interpret and present data using bar charts, pictograms and tables **Spring 3**	• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs **Summer 4**	• complete, read and interpret information in tables, including timetables **Autumn 3**	• interpret and construct pie charts and line graphs and use these to solve problems **Summer 3**
Statistics: Solve Problems		• ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity • ask and answer questions about totalling and comparing categorical data **Spring 2**	• solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables **Spring 3**	• solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs **Summer 4**	• solve comparison, sum and difference problems using information presented in a line graph **Autumn 3**	• calculate and interpret the mean as an average **Summer 3**

29. STATISTICS - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
Count	A tally represents one ___.
Tally – tally chart	We count in fives to get the total.
Sort/ group	Bar charts, pictograms, graphs and tables are used to represent data.
Vote/Survey	In this pictogram, one ____ represents one/two/five/ten _____.
Questionnaire	In this graph, each block represents one _____.
Data/Database	The intervals/scale on the x-axis/y-axis represent ___
Graph	The heading for the x-axis/y-axis is ____.
Block graph/Bar chart	A bar graph shows quantities or amounts of objects.
Bar line chart	Bar graphs can be horizontal or vertical.
Line graph	A line graph shows how data changes over time.
Pie Chart	The data on a line graph is continuous. This means we can interpret data between the points.
Pictogram	A pie chart is used to represent a whole data set.
Table/Frequency	In a pie chart 360° represents 100% (all) of the data.
Venn diagram	
Label/Title	The mean is found by dividing the total by the number of items.
Axis/Axes	The mode is the most frequent item in a set of data.
Most/ least popular/common	The range is the difference between the highest and lowest values in a data set.
Mean/mode/median	
Range/ distribution	
Average	

30. REASONING AND PROBLEM SOLVING - VOCABULARY AND STEM SENTENCES

Vocabulary	Stem Sentences
Strategy	The strategy I used was …
Solution	I noticed that …
Same/different	I noticed that ___ and ___ was the same.
Describe	I noticed that ___ and ___ was different.
Trial and improvement	I think this because…
Systematic	If this is true then …
All possibilities	I know that the next one is …. because …
Prove/proof	This pattern/sequence continues with …
Pattern/sequence	This can't work because …
Diagram	When I tried XXXX I noticed that …
generalise	The pattern looks like …
	All the numbers begin with ….