Welcome to Maths at Holmesdale

Maths at Holmesdale

- At Holmesdale Infant school we follow a mastery approach to the teaching of mathematics. Maths Mastery is a teaching and learning approach that aims for pupils to develop a deep understanding of maths rather than being able to memorise key procedures or resort to rote learning.

- The end expectation is for all pupils to have acquired the fundamental facts and concepts of maths for their year group, so that by the end of it they have achieved mastery in the maths they have been taught. At this point they are ready to move confidently on to their next stage of maths.

- Mastery of a mathematical concept means a child can use their knowledge of the concept to solve unfamiliar word problems, and undertake complex reasoning, using the appropriate mathematical vocabulary.

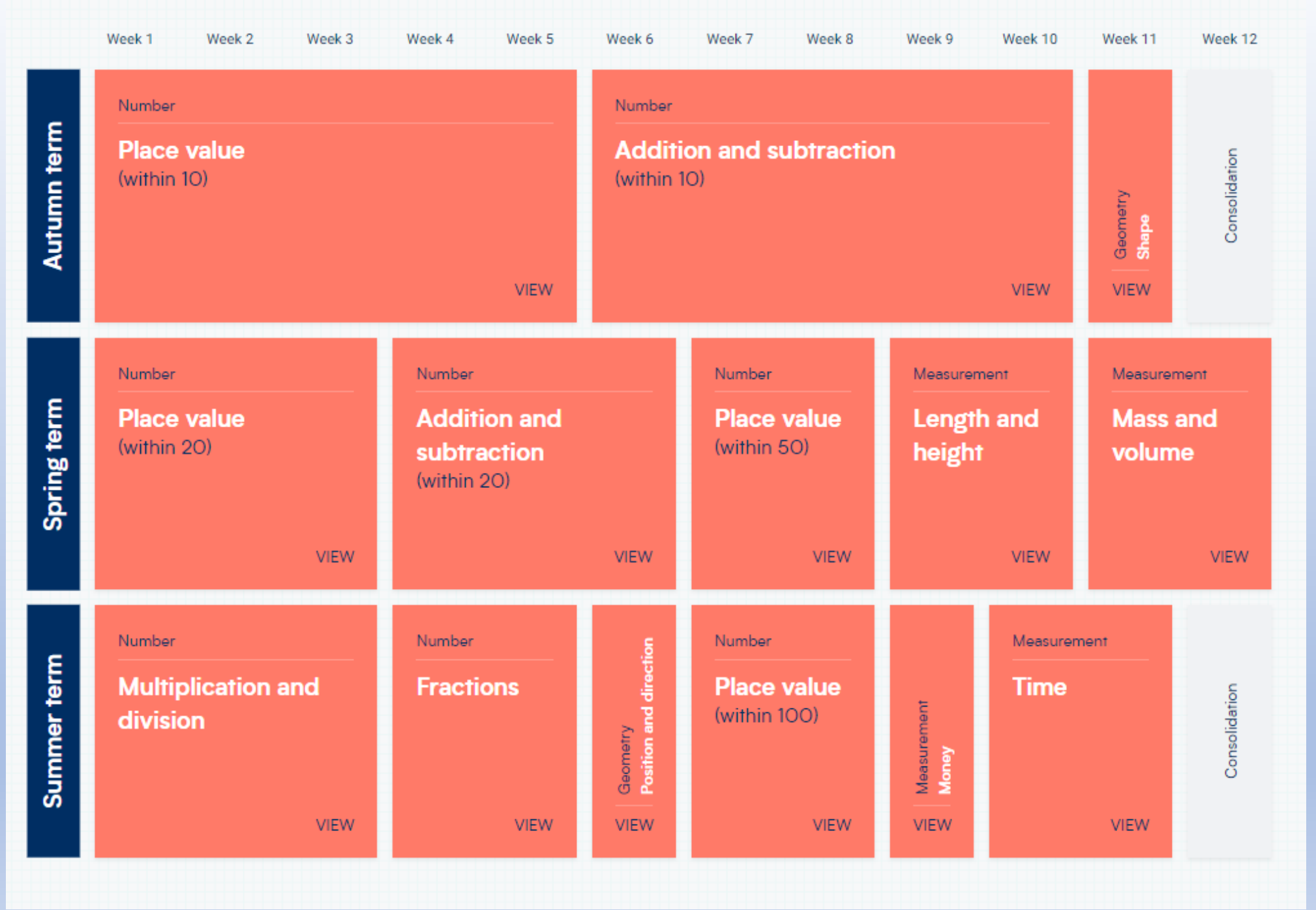
White Rose Maths Scheme

At Holmesdale Infant school we have adopted the **White Rose Maths** scheme of work and use other schemes to supplement this to meet the needs of our children. As part of this approach, we teach an overarching block of learning about a particular topic, such as place value and this is then broken down into small steps of learning. The yearly frameworks are aligned with the National Curriculum and plan out children's journey to mastery by ensuring they tackle learning objectives in a logical order.

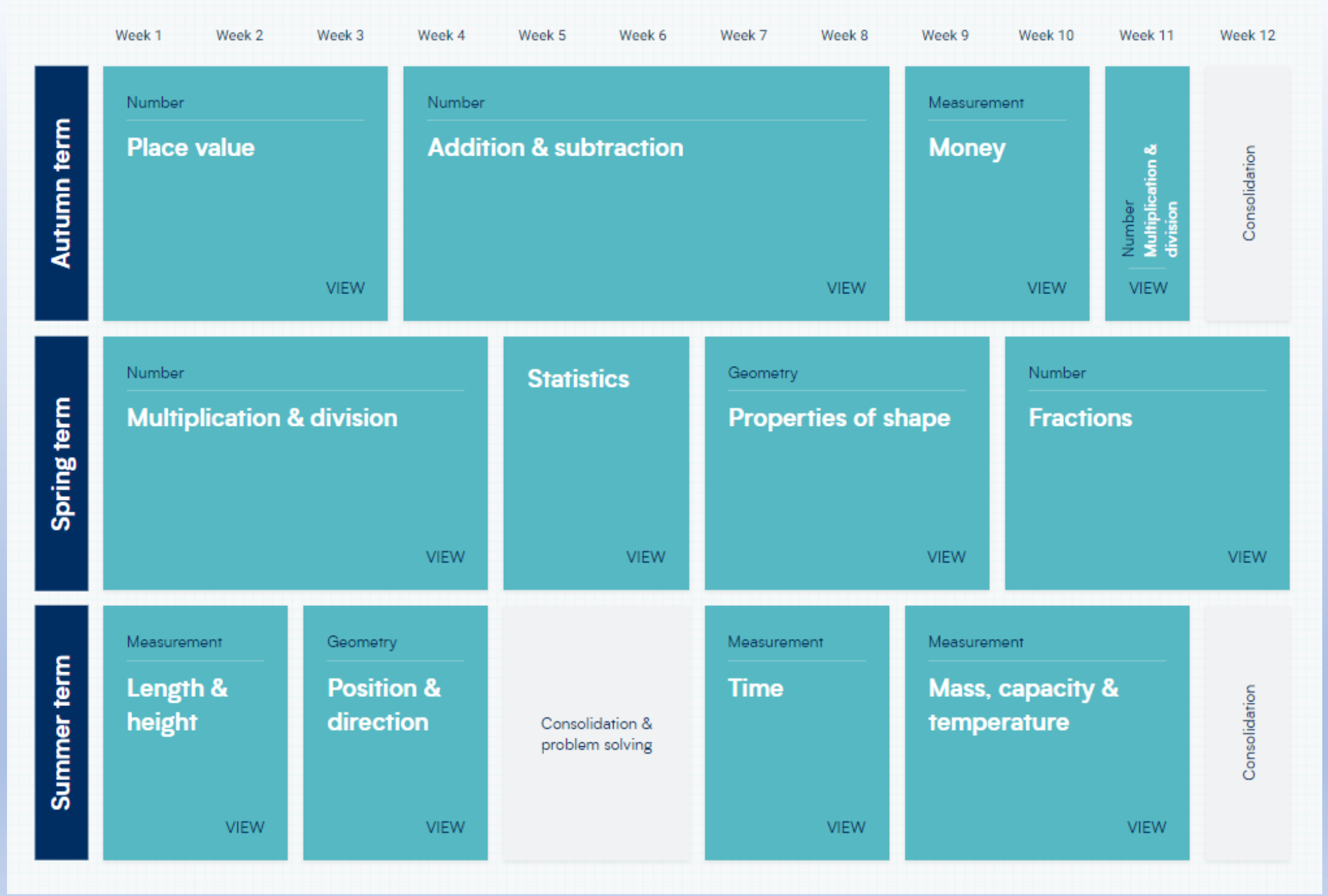
EYFS

	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		

Year 1


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
Number
Place value
(within 10)
VIEW
Number
Addition and subtraction
(within 10)
VIEW
Geometry
Shape
VIEW
Consolidation
Spring term
Number
Place value
(within 20)
VIEW
Number
Addition and subtraction
(within 20)
VIEW
Number
Place value
(within 50)
VIEW
Measurement
Length and height
VIEW
Measurement
Mass and volume
VIEW
Summer term
Number
Multiplication and division
VIEW
Number
Fractions
VIEW
Geometry
Position and direction
VIEW
Number
Place value
(within 100)
VIEW
Measurement
Money
VIEW
Measurement
Time
VIEW
Consolidation

Year 2


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
Number
Place value
VIEW
Number
Addition & subtraction
VIEW
Measurement
Money
VIEW
Number
Multiplication & division
VIEW
Consolidation
Spring term
Number
Multiplication & division
VIEW
Statistics
VIEW
Geometry
Properties of shape
VIEW
Number
Fractions
VIEW
Summer term
Measurement
Length & height
VIEW
Geometry
Position & direction
VIEW
Consolidation & problem solving
Measurement
Time
VIEW
Measurement
Mass, capacity & temperature
VIEW
Consolidation

End of EYFS Expectations

Maths Reception – End of Year Expectations

Working towards Age Related Expectations – 3-4 year olds
Develop fast recognition of up to 3 objects, without having to count them individually subitising ('Show 'finger numbers' up to 5).
Recite numbers past 5.
Say one number for each item in order: 1,2,3,4,5.
Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
Show finger numbers up to 5.
Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
Experiment with their own symbols and marks as well as numerals.
Solve real world mathematical problems with numbers up to 5.
Compare quantities using language: 'more than', 'fewer than'.
Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.
Understand position through words alone – for example, "The bag is under the table," – with no pointing.
Describe a familiar route.
Discuss routes and locations, using words like 'in front of' and 'behind'.
Make comparisons between objects relating to size, length, weight and capacity.
Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc.
Combine shapes to make new ones – an arch, a bigger triangle, etc.
Talk about and identify the patterns around them.
Extend and create ABAB patterns – stick, leaf, stick, leaf.
For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.
Notice and correct an error in a repeating pattern.
Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'
Working At Age Related Expectations
Count objects, actions and sounds.
To Subitise.
Link the number symbol (numeral) with its cardinal number value.
Count beyond ten.
Compare numbers.
Understand the 'one more than/one less than' relationship between consecutive numbers.
Explore the composition of numbers to 10.
Automatically recall number bonds for numbers 0–5 and some to 10.
Select, rotate and manipulate shapes to develop spatial reasoning skills.
Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
Continue, copy and create repeating patterns.
Compare length, weight and capacity.

Maths Reception – End of Year Expectations

Working at Age Related Expectations - EARLY LEARNING GOALS – NUMBER
Have a deep understanding of numbers to 10, including the composition of each number.
Subitise (recognise quantities without counting) up to 5.
Automatically recall (without reference to rhymes, counting or other aids) number bonds to 5 (including subtraction facts) and some number bonds to 10, including double facts.
Working at Age Related Expectations - EARLY LEARNING GOALS - NUMERICAL PATTERNS
Verbally count beyond 20, recognising the pattern of the counting system
Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity
Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally
Working at Greater Depth
Count, read and write numbers to 100 in numerals.
Count in multiples of 10.
Given a number, identify 1 more and 1 less (to 20).
Recall some number bonds to 10.
Recognise, find and name half of an object, shape or quantity.
Sequence events in chronological order.

End of Year 1 Expectations

Working towards Age Related Expectations
Count, read and write numbers to 100 in numerals.
Count in multiples of 10.
Given a number, identify 1 more and 1 less (to 20).
Recall some number bonds to 10.
Recognise, find and name half of an object, shape or quantity.
Sequence events in chronological order.
Working at Age Related Expectations
Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any other number.
Read and write numbers from 1-20 in numerals and words.
Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
Represent and use number bonds and related subtraction facts within 20.
Add and subtract one-digit and two-digit numbers to 20, including zero.
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.
Count in multiples of 2s, 5s and 10s.
Recognise, find and name half and a quarter of an object, shape or quantity recognising that it is one of 'x' equal parts.
Compare, describe and solve practical problems for lengths and heights, mass/weight, capacity and volume and time.
Recognise and know the value of different coins and notes.
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.
Recognise and name common 2D and 3D shapes.
Working at Greater Depth
Begin to solve simple problems involving money.
The pupil can name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties.
Solve one step problems involving addition and subtraction, reasoning about their methods and thinking.
Solve one step problems involving multiplication and division, reasoning about their methods and thinking.
Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, times using non-standard measures, moving to standard units.
Able to reason, at an age-appropriate level, about numbers to 100 (and some beyond).

End of Year 2 Expectations

Working towards Age Related Expectations
The pupil can read and write numerals up to 100.
The pupil can partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them.
The pupil can add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus.
The pupil can recall four of the six number bonds for 10 and reason about associated facts.
The pupil can count in twos, fives and tens from 0 and use this to solve problems.
The pupil knows the value of different coins.
The pupil can name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties.
Working At Age Related Expectations
The pupil can partition two-digit numbers into different combinations of tens and ones explaining their thinking verbally, in pictures or using apparatus.
The pupil can add and subtract any 2 two-digit numbers using an effective strategy, explaining their method verbally, in pictures or using apparatus.
Recall all number bonds to 10 and within and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships.
The pupil can recall multiplication and division facts for the 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary.
The pupil can identify one half, one quarter, two quarters, one third and three quarters of a number or shape and know that all parts must be equal parts of a whole.
The pupil can use different coins to make the same amount.
The pupil can read scales in divisions of ones, twos, fives and tens.
The pupil can read the time on the clock to the nearest 15 minutes.
The pupil can name and describe properties of 2-D and 3-D shapes including number of sides, vertices, edges, faces and lines of symmetry.
Working at Greater Depth
The pupil can read scales where not all numbers on the scale are given and estimate points in between.
The pupil can recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts.
The pupil can use reasoning about numbers and relationships to solve more complex problems and explain their thinking.
The pupil can solve unfamiliar word problems that involve more than one step.
The pupil can read the time on the clock to the nearest 5 minutes.
The pupil can describe similarities and differences of 2-D and 3-D shapes, using their properties.

How has Maths Changed since I was at school?

- Maths hasn't changed, we are still teaching mostly the same methods you were taught at school but what has changed is how we look at the **different representations** of maths e.g. 10 frames / bar models and place value counters and now we teach them **multiple methods**

Why Teach multiple methods?

- My teaching them multi methods we are encouraging flexible thinking so that children can start to choose the most efficient method which may not always be the same

- Research has shown that multi representations help children to grow a deeper understanding of the methods behind the maths

- By teaching them different ways to solve problems each individual method/representation shows something slightly different which then provides them with a toolkit to help solve more complex problems later on

Why do we spend so long teaching the basics?

- Focusing on building the blocks of maths such as place value, addition, subtraction, multiplication and division equips children to access maths across the curriculum more quickly
- Firm foundations are crucial to building up on their previous skills and knowledge enabling them to access other areas of maths more quickly. As you can see subtraction is taught in each year group and in each year we deepen the skills.
- A significant amount of time is spent reinforcing number in order to build fluency and competency and to make sure children can confidently access the rest of the curriculum. Children should have the opportunity to work with physical objects/concrete resources, in order to bring the maths to life and to build understanding of what they are doing. Alongside concrete resources, children should work with pictorial representations, making links to the concrete. Visualising a problem in this way can help children to reason and to solve problems. With the support of both the concrete and pictorial representations, children can develop their understanding of abstract methods.

What is CPA?

Concrete – Pictorial – Abstract (CPA)

Research shows that all children, when introduced to a new concept, should have the opportunity to build competency by following the CPA approach. This features throughout our schemes of learning.

Concrete

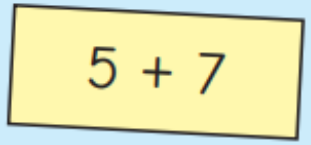
Children should have the opportunity to work with physical objects/concrete resources, in order to bring the maths to life and to build understanding of what they are doing.

Pictorial

Alongside concrete resources, children should work with pictorial representations, making links to the concrete.
Visualising a problem in this way can help children to reason and to solve problems.

Abstract

With the support of both the concrete and pictorial representations, children can develop their understanding of abstract methods.



How can you help your child with becoming secure maths at home?

Maths with Michael

We've teamed up with TV presenter, teacher and parent Michael Underwood to bring you a mini-series called Maths with Michael.

Follow the link to Maths with Michael to access the parent guidance for the different units of maths such as Place Value.

- Model and reinforce key vocabulary which will be sent home to support each unit we teach

- Support them to complete homework using the methods and representations they have been learning and using at school

- Join your child in one of their maths sessions – dates to be arranged

- Speak to your child's class teacher if you need any further support

- Thank you for attending this evening and supporting your child's maths journey at Holmesdale and helping them to ***'Be the Best Me I can Be'***