



Mathematics Policy 2025

Adopted by the Senior Leadership Teams of
New Road and Park Lane Primary and Nursery Schools
Aspire Learning Trust
on 25th March 2025

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The next review date is:

Review is the responsibility of:

Review History

Review ratified:

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Mathematics Policy 2025

Intent of the School's Curriculum

Pupils will become confidently fluent in the fundamentals of mathematics; will reason mathematically; and will apply their mathematics to solve challenging problems. Pupils will develop the fundamental mathematical knowledge and skills required in every-day life. Importantly, they will develop the ability to think mathematically which will empower them to be successful and navigate the challenges of their education and life after school in our fast-changing world. They will have an appreciation of the power of mathematics, a sense of enjoyment and curiosity about the subject.

The national curriculum for mathematics aims to ensure that all pupils:

- Become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **Reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Implementation

Teaching for mastery is an approach, not a teaching style. Mastering mathematics is a gradual, cumulative process that creates mathematical tools for life. Mastery is what we want pupils to acquire (or go on acquiring).

We achieve mastery by using an explicit teaching technique **I do, We do, You do** in the vast majority of lessons (please see Teaching and Learning Policy).

We use **I do, We do, You do** skilfully where the higher-performing pupils are sufficiently stretched and lower-performing pupils are effectively supported, and yet the integrity of our teaching sequence is still maintained so that no pupil runs too far ahead or falls too far behind.

The depth of understanding of an individual, be it emerging, developing or secure in a given objective, will be challenged in a wide variety of formats in order to challenge and solve problems at their level. Children will expect and welcome challenges which push them to deepen their learning at all levels. Problems are not solely for those who excel in maths.

Procedural variation

We use three types of procedural variation to ensure that our problem solving deepens learning at all levels.

1. Extending a problem by varying the number, the unknown or the context

When you ask your class the question, '*use what you know to work out what you don't know*' this is similar to this type of variation. They are often a short bank of questions that build up from a simple start and practice the aspect you want to focus on.

Here are two more examples that show variation, varying the number and then the unknown:

$1.46 \times 10 = \boxed{}$

$14.6 \times 10 = \boxed{}$

$146 \times 10 = \boxed{}$

$1460 \times 10 = \boxed{}$

$460 \div \boxed{} = 46$

$4600 \div \boxed{} = 46$

$46 \div \boxed{} = 4.6$

$460 \div \boxed{} = 4.6$

Such problems show good use of variation if you can ask the question ***‘What do you notice?’*** at the end. It gives the opportunity to focus on the key teaching points for the concept or problem and leads to children making generalisations about mathematical ideas.

2. Varying the processes of solving a problem

The question *‘How did you work it out?’* opens up so many opportunities to explore the process the children go through to get to the answer, picking up misconceptions or errors and giving you the chance to deepen children’s understanding by breaking down those processes and applying them to other problems.

As well as the processes for solving a problem it could also focus on the procedures a child uses. For example, for subtracting money when giving change, children could explore taking away, they could line the coins up as they add and they could show their counting on through jumps on a number line. Use the same numbers and vary the method or process. At the end ask, *‘What is the same and what is different?’* and *‘Which method did you prefer?’*


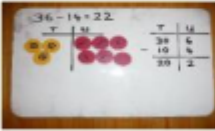
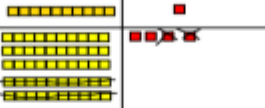
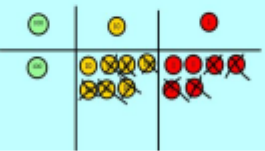
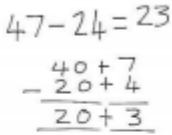
3. Varying the problems by applying the same method to a group of similar problems

This is the classic modelling and scaffolding approach so that a strategy or procedure is taught and then used to solve different problems. For example, if a class has learnt all about multiples and lowest common multiples they could apply this understanding when learning how to compare fractions and search for common denominators.

This also shows the connections between all the areas of mathematics and how skills and concepts can be used and applied in many different contexts.

The Use of Concrete and Pictorial Resources

We use models (concrete resources) and images (pictorial) to support our teaching sequence dependent on the needs of an individual child or group. (Please see table below.) When children are able to see concepts this way, they then need to understand the same concepts represented pictorially. Children are then ready for abstract representation before being able to apply their knowledge to different situations. Below is an example of these three stages in relation to subtraction.

Objective and Strategies	Concrete	Pictorial	Abstract
Column method without regrouping	 <p>Use Base 10 to make the bigger number then take the smaller number away.</p>  <p>Show how you partition numbers to subtract. Again make the larger number first.</p>	 <p>Draw the Base 10 or place value counters alongside the written calculation to help to show working.</p> 	 <p>This will lead to a clear written column subtraction.</p>

Content/Organisation

We have adopted the White Rose Maths Hub Scheme of Work which systematically builds maths knowledge, skills and understanding. In addition, the school also uses the NCETM Ready to Progress materials to ensure that pupils make progress in small, incremental steps in key concepts such as addition.

Teaching will cover each the following areas of mathematics from the National Curriculum 2014:

Number
 Calculations
 Fractions, decimals and percentages
 Measurement
 Geometry
 Statistics

Much of the pupils' learning is based on:

- the use of concrete, pictorial and abstract methods.
- fluency, reasoning and problem-solving questions.
- a variety of questions that help children to progress understanding with greater depth.

Where links can be made across units we will endeavour to do so, in order to create a mathematics curriculum which is not compartmentalised.

There is one Maths lesson taught per day for a period of between 45 minutes and an hour. It is also applied through other aspects of the curriculum to ensure that our children have the opportunity to practise their skills and knowledge repeatedly, and through different aspects of their learning.

In Reception, the Foundation Stage curriculum is organised into prime and specific areas of learning with an aim of children meeting the early learning goals. The area of Maths is split into Number and Numerical Patterns of which problem solving, reasoning and numeracy are all a part. Please refer to the Early Years Foundation Stage (EYFS) policy for further details.

Lesson Structure

This table outlines the features that should be common to all mathematics lessons. See [appendix 3 and 4](#)

Maths Lesson	
*1	Times tables teaching (counting KS1): see timetable below. The counting stick array model can be found in appendix 2 .
*2	Daily 10 – KS2 only
*3	Teach the remember – 2 minutes.
*4	Children to practice the remember – KS2: 13 minutes. KS1: 11 minutes.
*5	Baseline – one question which assesses what they already know.
*6	Teach the new learning in 2 to 3 chunks using I do, We do, You do
*7	Hot marking – bring them back together for a reteach if further support needed
*8	Model word problems/ reasoning so they have a good model
*9	Chn to have 2 – 3 good responses in their books – fully answered and properly punctuated.
*10	Progress review - teacher assesses the extent to which pupils can remember, understand, and apply the new knowledge.

Routines for All Lessons that support strong learning

Throughout The Lesson

Ready, Safe, Respectful

The Teacher Is Ready

- The teacher **MUST** be prepared and ready to 'go' as a sign of **respect** to the pupils and the school.
- All pupils **ready**, looking & listening when signalled. Clear routines established & understood.
- Pupils engaged/on-task/inquisitive – **respect** pupils' time by using every minute productively.
- Good relationships/positive talk – positive behaviour strategies.
- Every child should be **ready** and have what they need to learn, waiting is lost learning time and devalues time in school.

The Teaching Is Clear

- As a simple and as clear as possible.
- Teacher explicitly models what it is they want the children to know and do, using clear models and images and thinking out loud.
- For reasoning and problem solving create a WAGOLL so that they children can use this to support their answers.
- Work displayed on working walls/displays changes slowly and is discussed with the children, mirroring the teaching sequence in the classroom.
- Can be seen clearly by everyone (including children at the side/back of the classroom).
- Focus on what the children need to know, what is new knowledge is being taught within that lesson - not everything what you want them to know (until the end of the teaching sequence).

	<ul style="list-style-type: none"> Model 'up-levelling': how to use new knowledge to improve. <p>The Teaching Is Clear and Supportive</p> <ul style="list-style-type: none"> The teacher works the room and gives in the moment – verbal feedback and 'hot marking' moves learning on. No hands up 'Feed-forward' discussion- focus on what needs to happen not what has gone wrong. Cherish mistakes, misconceptions and epic fails Children to model work/ talk through thinking with each other Peer and self-marking is encouraged.
<p>The Remember Section (Spaced retrieval practise) (to achieve rapid, fluent recall of previously taught knowledge)</p>	<ul style="list-style-type: none"> The remember section begins with Times Tables and division facts (KS2) and number bonds (EYFS/ KS1) recall in Years 3 – 6. This section lasts for 5 minutes. We use the word 'remember'. '<i>We are going to remember what you learnt: yesterday, last week, last term, last year etc</i>' We precisely timetable when knowledge and Vocabulary is going to be remembered using spaced intervals', this is done on a long-term curriculum overview. We use the following 'Remember Strategies' for spaced intervals and Teach, test, test, test, test: Recall Grids: Such as times table challenges. Flash Cards: cards/notebook slides with words and/or pictures on that have one word, phrase or image on that gradually increase in number, for example, different types of triangles, parts of a castle. Verbal recall: partner/group, for example - name five things you know about cuboids... five things you know about plants etc.. Written recall: write a list, draw and label a picture, diagram etc, for example draw and label a map of Scandinavia... Discuss Wordless Images: pictures and diagrams without supporting labels and annotation, for example, discuss and label the three different volcanoes. Future recall activities and teaching intentions are informed and adapted by how confidently pupils respond.
<p>New Learning</p> <p>Two to Three Chunks Taught using I do, We do, You do</p>	<p>The new knowledge is commonly taught in two to three distinct 'chunks'.</p> <p>At the planning stage teachers specify exactly what is they want children to know in each of the three chunks.</p> <p>The chunk of knowledge is taught using 'I do, We do, You do'.</p> <p>When notebook slides are used, the following symbols are used to clearly indicate the purpose of the slide:</p> <div data-bbox="544 1644 871 1720" data-label="Image"> </div> <p>The teacher uses a mastery approach which means they will not teach the next chunk unless the first chunk is securely understood.</p> <p>The 'I do, We do, You do' slides explain, assess and practice the same teaching point with only subtle variations on a theme.</p>

	Each chunk contains the right amount knowledge for the year group being taught and only knowledge that children of that age can be expected to remember and understand in future.
Ending Lessons: Positive Exit Routines	<ul style="list-style-type: none"> • The lesson ends with the teacher assessing the extent to which pupils can remember, understand, and apply the new knowledge. • Praise children for their effort (Positive ending). • Clear routines in place – exit lesson/session calmly & orderly. • Limit the amount of work you review/ share to a maximum of 3 children per lesson.

Lesson Planning

Planning begins from a thorough understanding of children’s needs gleaned through effective and rigorous assessment and tracking, combined with high expectations and ambition for all children to achieve.

Medium- and long-term frameworks draw upon from the White Rose Maths Hub schemes of work.

Our curriculum planning is organised into three distinct phases:

1. **Long Term Planning:** teachers use the WhiteRose scheme of learning when deciding what to teach and in what order.
2. **Medium Term Planning:** teachers use agreed planning formats to detail the teaching sequence for each week’s learning.
3. **Short Term Planning:** teachers use an agreed planning format for Mathematics to show where the higher-performing pupils are sufficiently stretched and lower-performing pupils are effectively supported, and how the integrity of our teaching sequence is maintained so that no pupil runs too far ahead or falls too far behind.

Written Methods of Calculation

The 2014 Primary National Curriculum in England, Mathematics, sets out progression in written methods of calculation that highlights how children would move from informal methods of recording to a formal written method for each of the four operations.

The aim is that by the end of Key Stage 2, the great majority of children should be able to use an efficient written method for each operation with confidence and understanding. This guidance promotes the use of what are commonly known as ‘formal’ written methods – methods that are efficient and work for any calculations, including those that involve whole numbers or decimals. They are compact and consequently help children to keep track of their recorded steps. Being able to use these written methods gives children an efficient set of tools they can use when they are unable to carry out the calculation in their heads or do not have access to a calculator. We want children to know that they have such a reliable, written method to which they can turn when the need arises.

In setting out these methods, the intention is that we adopt a greater consistency in our approach to calculation so that all teachers understand which methods in which we work towards. Children are entitled to learn how to use the most efficient methods for them personally (for further information see the school’s calculation policy). The school’s calculation policy can be found in [appendix 1](#).

Assessment, Recording and Reporting

Assessment as Learning

We want our pupils to know more and remember more, which is why we carefully plan and use the Testing Effect when a new concept is taught. By teaching and subsequently testing pupil recall and understanding three to four times in the following lessons, pupils are more likely to remember the new information that has been shared.

Please see Teaching and Learning Policy for a more detailed explanation of the Test Effect and the use of spaced interval recall in the school.

Formative Assessment

Assessment for learning should occur throughout the entire maths lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular. Pupils' work should be marked in line with the Marking Policy.

Future lesson design should depend on class success evaluated through marking and observations made during the lesson. If understanding is still not secure at the end of a taught unit, this will be addressed by the class teacher.

Summative Assessment

During the year, each child's progress should be recorded by the class teacher with regard to their progress towards meeting the end-of-year expectations for their year group. This will take the form of a termly assessment using either NFER or past SATs papers in February and May.

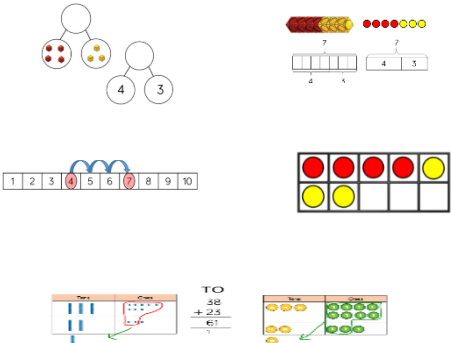
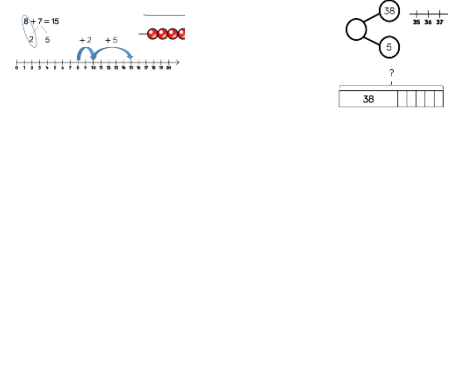
In addition, there is an end of unit assessment completed by pupils in Year1 to 6 to assess what pupils know and understand. The results of which inform the *Remember* section of each lesson.

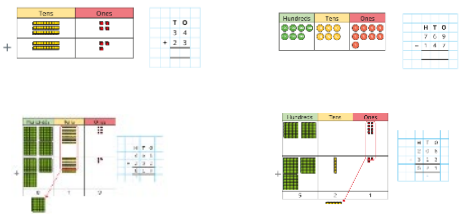
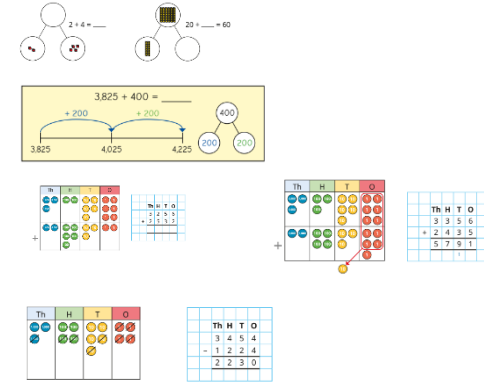
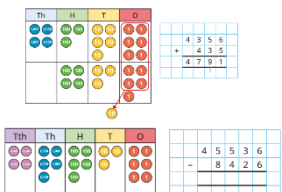
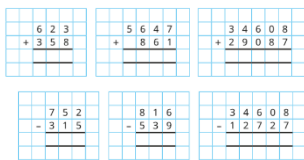
Inclusion, SEN and Differentiation

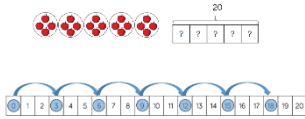
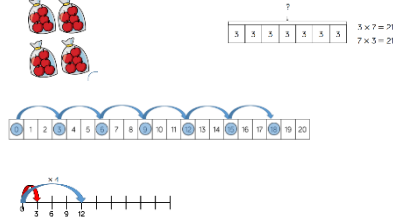
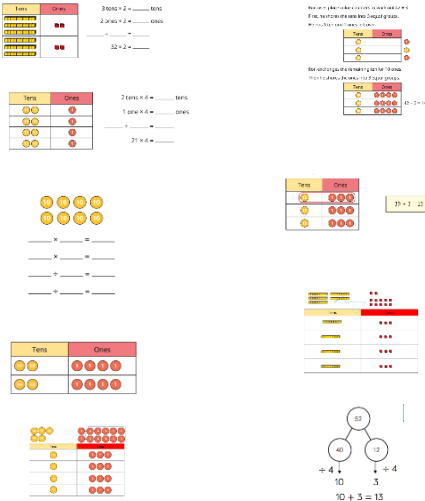
In order to provide all pupils with relevant and appropriate work at each stage:

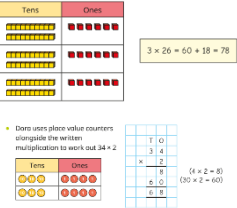
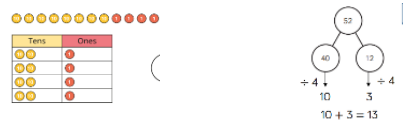
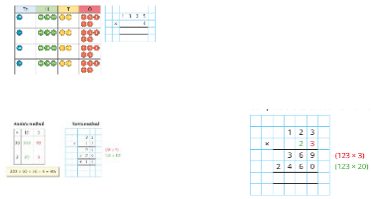
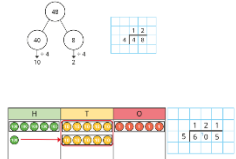
- We plan suitable learning challenges.
- Respond to pupils' diverse needs through pre-learning tasks.
- Endeavour to overcome potential barriers to learning through quality teaching and intervention as required.

Appendix 1:

Addition and Subtraction		Models/ Examples
Reception	<ul style="list-style-type: none"> Part whole models: drawn on table or printed, chn using concrete resources to move between parts to begin with, then pictorially e.g. showing a number bond to 5 by drawing dots. Five/ten frames: five frames up until Christmas as we only focus on numbers to 5, introduce ten frames in Spring term. Physically first using wooden/plastic frames and using resources such as counting bears/counters to fill the frames. Then pictorially. Numicon: mostly used for number bond knowledge – making a ‘number bond sandwich’ <p>Occasionally cubes: usually to make towers to identify one more/one less, addition and subtraction towers also</p>	<p>Use of ten town. A different number each week up to 5 in Autumn term, up to 10 in spring term. Touch upon number past 10 – counting more than writing.</p>
Year 1	<ol style="list-style-type: none"> Cubes (subitising) (Autumn 1) Numicon (Autumn 1) Rekenrek(Autumn 1) Tens frames (Autumn 1) Part-whole model (leading to bar model with cubes as concrete) (Autumn 1) Written representations/number sentences (all) Number Tracks (Spring 1) Number lines (Spring 1) Diennes (tens and ones) Spring 2 Word Problems (1 step) 	
Year 2	<ol style="list-style-type: none"> Cubes (Autumn 1) Number lines (numbered and blank) (Autumn 1) Hundreds squares (Autumn 1) Part-whole model leading to bar models (Autumn 1) Dienes (Autumn 2) Dienes/Tens frames bridging ten (Autumn 2) 2 step word problems (Autumn 2) Column addition and subtraction (with exchanging) (Autumn 2) Column addition and subtraction crossing the ten (Autumn2) Tens into 100 (Column method) (Spring 2) Commutativity (Spring 1) 	




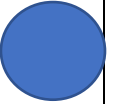
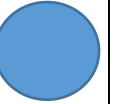



















<p>Year 3</p>	<ol style="list-style-type: none"> 1. Dienes leading onto column (Autumn 1) 2. Hundreds square (Autumn 1) 3. Number lines- use or draw own- bridging ten. 4. Part-whole models leading to bar models including inverse and 3-digit numbers (Autumn 1) 5. Visual representations of place value (Autumn 1) 6. Formal column method addition and subtraction (Autumn 2). 7. Formal column method addition and subtraction (with exchanging) (Autumn 2) 8. Word Problems 	 $\begin{array}{r} 300 + 60 + 7 \\ 100 + 80 + 5 \\ 500 + 50 + 2 \\ 100 \quad 10 \end{array}$
<p>Year 4</p>	<ol style="list-style-type: none"> 1. Add and subtract ones, tens, hundreds and thousands (Autumn 1) 2. Part, whole method. (Autumn 1) 3. Number lines. (Autumn 1) 4. Using denes adding numbers up to 10,000. (Autumn 1) 5. Place value chart. (Autumn 1) 6. Place value counters. Without and then with exchange with visuals (denes) then with place value counters no exchange. (Autumn 1) <ul style="list-style-type: none"> • Then adding the column alongside each other. The place value columns are at the top. (Autumn 1) 	
<p>Year 5</p>	<ol style="list-style-type: none"> 1. Place value counters with the columns next to them. (Autumn 1) 2. Visual denes with the column next to them. (Autumn 1) 3. Column addition and subtraction. (Autumn 1) 4. Number line for time (less effective for addition) 	
<p>Year 6</p>	<ol style="list-style-type: none"> 1. Visual denes with the column next to them. (Autumn 1) 2. place value counters – with the column next to it. (Autumn 1) 3. Use the bar model and the part whole models with the column next to them. (Autumn 1) 4. Column addition and subtraction. (Autumn 1) 	













Multiplication and Division		Models/ Examples
Reception	<ol style="list-style-type: none"> 1. Pairs- with objects and pictures 2. Sharing with objects 	
Year 1	<ol style="list-style-type: none"> 1. Chanting (1,2,5,10) (All terms) 2. Daily times tables lesson (All terms) 3. Cubes/ objects (lots of and share) (Summer 1) 4. Numicon (Summer 1) 5. Arrays (Summer 1) 6. Repeated addition (Summer 1) 7. Pictorial representations (Summer 1) 8. Number tracks 	
Year 2	<ol style="list-style-type: none"> 1. Chanting (2,3,5,10 tables)(All terms) 2. Daily times tables lesson (All terms) 3. Arrays (inverse) (Spring 1) 4. Numicon (in 2s, 5s, 3s, 10s) (All terms) 5. Repeated addition (Spring 1) 6. Pictorial grouping (Spring 2) 7. Grouping (blank number lines) (Spring 2) 8. Inverse /division (Spring 2) 9. Counting in table multiples- odd and even numbers 	
Year 3	<p>Multiplication</p> <ol style="list-style-type: none"> 1. Daily times tables lesson(4,6,8,11) (All terms) 2. Arrays (Spring 1) 3. Grouping and sharing (pictorial and concrete) (Spring 1) 4. Repeated addition (Spring 1) 5. Number lines (Spring 1) 6. Multiplication grid method (Spring 1) <p>Division</p> <ol style="list-style-type: none"> 1. Sharing dienes (Spring 1) 2. Bar models (Spring 1) 3. Part whole model (Spring 1) 4. Flexible partitioning for division using part whole. (Spring 1) 5. Flexible partitioning for division with exchange (Spring 1) 7. Flexible partitioning for division with remainders (TO ÷ O) (Spring 1) 	

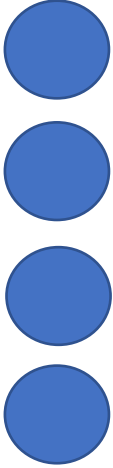
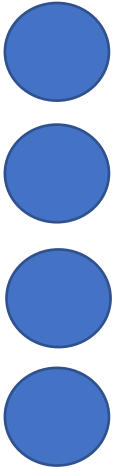




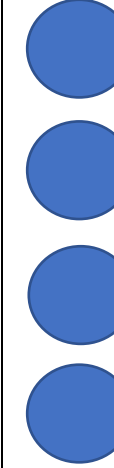





<p>Year 4</p>	<p>Multiplication</p> <ol style="list-style-type: none"> 1. Arrays using counters. Denes – 25 x 3 so two tens, five ones and then repeated 3 times. (Autumn 2) 2. Factors and factor pairs. (Spring 1) 3. This moves onto expanded long multiplication method i.e. $23 \times 4 = 3 \times 4 = 12$ and then $20 \times 4 = 80$. (Spring 1) 4. Compacted long multiplication method 3 digit by 1 digit. (Spring 1) 	 <p>$3 \times 26 = 60 + 18 = 78$</p> <p>• Dore uses place value counters alongside the written multiplication to work out 34×2</p> <p>$34 \times 2 = 68$</p> <p>$(4 \times 2 = 8)$ $(30 \times 2 = 60)$</p>
	<p>Division</p> <ol style="list-style-type: none"> 1. Flexible partitioning for division using part whole. (Spring 1) 2. Flexible partitioning for division with exchange (Spring 1) 3. Flexible partitioning for division with remainders (TO ÷ O) (Spring 1) Place value counters which they then share out on a place value grid. Part whole. Start off with $33 \div 3$ where they don't need to partition the whole number. $48 \div 3 = 30 \div 3$ add $18 \div 3$. (Spring 1) 4. Up to 2 digit by 1 digit with remainders. Up to 3 digit by 1 digit without remainders. (Spring 1) 	 <p>$48 \div 3 = 16$</p> <p>$10 + 3 = 13$</p>
<p>Year 5</p>	<p>Multiplication</p> <ol style="list-style-type: none"> 1. First lesson recap expanded long multiplication method. 2. Place value counters – 3×27 show this a place value chart i.e. 2 tens, 7 ones repeated 3 times. So hundred, tens, ones each with the amount in and then that number of lines with the column next to it. (Spring 2) 3. When moving onto multiplying 2 digit by 2 digit they use the area model (the former grid model) this has denes in as well as numbers. (Spring 2) 4. Up to 4 digits by 2 digits. (Spring 2) 	 <p>$123 \times 3 = 369$ $123 \times 20 = 2460$</p>
	<p>Division</p> <ul style="list-style-type: none"> • Part whole model same as Year 4. (Spring 2) • This then leads on from Year 4 where they use the place value grids to split up the number with the short division next to it. (Spring 2) • Concentrate on the short division method up to 4 digit by 1 digit with remainders. (Spring 2) • Still show them the place value grid and the sentences. (Spring 2) 	

Year 6	Multiplication	
	<ul style="list-style-type: none"> • Compacted long multiplication method up to 4 digits by 2 digits. (Autumn 1/2) 	
	Division	
	<ul style="list-style-type: none"> • Short division up to 4 digit by 2 digit with remainders. (Autumn 1/2) • There is some use of bar models. (Autumn 1/2) • Use of multiplying and dividing by 10 i.e. $2,700 \div 3 = 900$. . (Autumn 1/2) • This also occurs in Year 4. 	

Appendix 2:

0	1	2	3	4	5	6	7	8	9	10	11	12
0	2	4	6	8	10	12	14	16	18	20	22	24
												
												

0	1	2	3	4	5	6	7	8	9	10	11	12
0	3	6	9	12	15	18	21	24	27	30	33	36
												

0	1	2	3	4	5	6	7	8	9	10	11	12
0	4	8	12	16	20	24	28	32	36	40	44	48
												

Appendix 3:

Maths Lesson

30% remember (KS2: 20 minutes. KS1: 13 minutes)

70% new learning (KS2: 40 minutes. KS1: 32 minutes)

Remember Section – 30% - KS2: 20 minutes KS1: 13 minutes:

- The aim of the remember section of the lesson is to keep all those key skills (which you have taught or have been taught in a previous year group) at the front of their minds.
- To support the remember section you will need to use previous QLA and knowledge of the class, knowledge of NFER assessments i.e what is coming up, in order to pick what you will remember. Pick something that is vital for their learning in your year group.

New Learning – 70% KS2- 40 minutes KS1- 32 minutes

- The aim of this section is to introduce the new learning so that they work their way through the curriculum.

Times Tables

- 5 minutes on **times tables**.
- The image below is a **counting stick array**.

0	3	6	9	12	15	18	24	27	30	33	36
	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●

- The aim on this is to keep teaching and improving their recall of this vital skill.
- First week only: Introduce 3 table facts per day using the above array model. Monday: start off **3 times 0 = 3**. **1 times 3 = 3**. **2 times 3 = 6**. **Tuesday. 3 times 3 = 9**. **4 times 3 = 12**. **5 times 3 = 15**. Wednesday: **6 times 3 = 18**. Within this – use the counting stick. Each of the answers for your times table from 1 to 12 needs to be on there.
- Week 2 – use the phrase **1 multiplied by 3 = 3**. **2 multiplied by 3 = 6**. **3 multiplied by 3 = 9**.
- Week 3. **The product** of 1 and 3 is 3. The **product** of 2 and 3 is 6. The **product** of 3 and 3 is 9. The **product** of 4 and 3 is 12. Continue to use the above counting stick array model.
- By the end of the first 3 weeks, the chn will know their ? Times table and associated vocabulary and be able to visualise this with the arrays.
- Weeks 4, 5 and 6. Teacher to use the same counting stick array.
- Week 4: Monday: **3 divided by/ shared between 3 = 1**. **6 divided by/ shared between 3 = 2**. **9 divided by/ shared between 3 = 3**. **12 divided by/ shared between 3 = 4**. Tuesday: **15 divided by 3 = 5**. **18 divided by 3 = 6**. **21 divided by 3 = 7** and so on.
- Week 5: **How many lots** of 3 are there in 3? **How many lots** of 3 are there in 6? **How many lots** of 3 are there in 9?
- Week 6: Bring in the inverse. **12 divided by 3 = 4** so **12 divided by 4 = 3**. **18 divided by 3 = 6** so **18 divided by 6 = 3**. This needs to be modelled using the counting stick array and the array annotated to show the lots of 3 and the lots of 4. Monday bring in the first 3 number facts. Tuesday bring in the second 3 numbers facts etc.
- Then spend the last 2 minutes on Daily Ten. Daily 10 is to be used to revisit previous times tables, so the chn do not forget them and not to work through the current times tables for that term.
- Chn complete the questions on whiteboards. You then mark them as a class. Show them the question and target those chn to get them to give you the answers.
- Staff meeting where you introduce one week at a time, then the following week introduce the next part of the sequence.

Remember section:

- **Monday – Friday:** 2 minutes teaching what they are remembering.
- **Week A:** Monday – fluency. Tuesday: numberless words problem linked to previous day's session. Wednesday: Fluency. Thursday: numberless words problem linked to previous day's session. Friday: Fluency.
- **Week B:** Monday: numberless words problem linked to Friday's session. Tuesday: Fluency. Wednesday: numberless words problem linked to previous day's session. Thursday: Fluency. Friday: numberless words problem linked to previous day's session.
- **Fluency:** Give them 2 or 3 modelled examples on the board within 2 minutes.
- Then set them questions that allows them to practise this skill. It should only be one skill taught per day.
- You can use Maths Bot to support this or display the questions on the board. <https://mathsbot.com/primary/ks2Mini>
- Max time spent on this 13 minutes.
- Work to be completed in books under the date and the IWK for the new learning. Please use the subheading *remember* to show what this is. You do not need to write two IWKs in chn's books. Chn can pair mark this or mark their own work.

- **Numberless word problems.** Pick a word problem from NFER/SATs assessments – the ones that you will use in January and June – hopefully you still have these.
- Cover up the numbers.
- Model how this should be answered with simple numbers. 1 and 2 would be easiest way to start.
- Give clear diagrams and teaching to show chn how this can be solved.
- Change the numbers so that they become more challenging. Continue to model with chn writing out the problems on their whiteboards.
- Complete 2/3 examples with the chn.
- Now give them further examples of the same problem with different numbers (including the actual ones that were originally in the question) which they complete in their books under the subheading *remember*.

New Learning – 70% - KS2: 40 minutes KS1: 32 minutes

- The aim of this section is to introduce the new learning so that they work their way through the curriculum.

First 25 minutes of the lesson.

- Introduce the new learning to the children – discussing the IWK. 1 minute.
- Teacher uses direct instruction: Teaching should be my turn you turn, explicitly model what you want the chn to know and do.
- Chn are then required to show that they **can do the skill 10-15 times (fluency)**.
- Then bring them back together for the next teaching part.
- Hot marking should be taking place throughout the lesson. If needed support individual chn with something that they have made a mistake with or if they need further input. If you spot a number of chn struggling with the same concept bring them together and reteach.

Last 15 minutes of the lesson:

- Say to the chn now we know this we can use it this way – problem solving and reasoning. It might be that you spend one day on reasoning and the next day on problem solving so that they can really show that skill rather than teaching reasoning and problem solving on the same day.
- Direct instruction and modelling of answers so that chn can effectively keep the words of my model and change the numbers.
- You need to be using actual examples from NFER, SATs, White Rose in your problem solving and reasoning.
- **2-3 good responses in their books.** Response can not just be yes or no or true or false. They need to be extended. False because... Spellings, punctuation should be the same as an English book.

We would like this to start by December in all KS2 classes.

In order to achieve this planning will need to be tweaked.

Make it clear in the remember section of your plans what you are planning on remembering.

We will review this in the spring term. Books and planning will be checked.

Week 1		3 minutes on the teaching.	6 minutes on times table each day.															
Day 1	<table border="1"> <tr><td>0</td><td>1</td><td>2</td></tr> <tr><td>0</td><td>3</td><td>6</td></tr> <tr><td></td><td>●</td><td>●</td></tr> <tr><td></td><td>●</td><td>●</td></tr> <tr><td></td><td>●</td><td>●</td></tr> </table>	0	1	2	0	3	6		●	●		●	●		●	●	0 times 3 = 0. 1 times 3 = 3. 2 times 3 = 6.	Last 3 minutes spend on daily 10 revisiting previously taught table this year or from a previous year. Chn complete the questions on whiteboards. You then mark them as a class. Show them the question and target those chn to get them to give you the answers.
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Week 2	3 minutes on the teaching.	6 minutes on times table each day.																
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Week 4		3 minutes on the teaching.	6 minutes on times table each day.															
Day 1	<table border="1"> <tr><td>0</td><td>1</td><td>2</td></tr> <tr><td>0</td><td>3</td><td>6</td></tr> <tr><td></td><td>●</td><td>●</td></tr> <tr><td></td><td>●</td><td>●</td></tr> <tr><td></td><td>●</td><td>●</td></tr> </table>	0	1	2	0	3	6		●	●		●	●		●	●	<p>3 divided by/ shared between 0 = 0. 3 divided by/ shared between 3 = 1. 6 divided by/ shared between 3 = 2</p>	<p>Last 3 minutes spend on daily 10 working through your current times tables. Chn complete the questions on whiteboards. You then mark them as a class. Show them the question and target those chn to get them to give you the answers.</p>
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Week 5		3 minutes on the teaching.		6 minutes on times table each day.															
Day 1	<table border="1"> <tr><td>0</td><td>1</td><td>2</td></tr> <tr><td>0</td><td>3</td><td>6</td></tr> <tr><td></td><td>●</td><td>●</td></tr> <tr><td></td><td>●</td><td>●</td></tr> <tr><td></td><td>●</td><td>●</td></tr> </table>	0	1	2	0	3	6		●	●		●	●		●	●	<p>How many lots of 3 are there in 0? How many lots of 3 are there in 3? How many lots of 3 are there in 6?</p>	This needs to be modelled using the counting stick array and the array annotated to show the lots of 3 and the lots of ?.	Last 3 minutes spend on daily 10 working through your current times tables. Chn complete the questions on whiteboards. You then mark them as a class. Show them the question and target those chn to get them to give you the answers.
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Day 2	<table border="1"> <tr><td>3</td><td>4</td><td>5</td></tr> <tr><td>9</td><td>12</td><td>15</td></tr> <tr><td>●</td><td>●</td><td>●</td></tr> <tr><td>●</td><td>●</td><td>●</td></tr> <tr><td>●</td><td>●</td><td>●</td></tr> </table>	3	4	5	9	12	15	●	●	●	●	●	●	●	●	●	<p>How many lots of 3 are there in 9? How many lots of 3 are there in 12? How many lots of 3 are there in 15?</p>	This needs to be modelled using the counting stick array and the array annotated to show the lots of 3 and the lots of ?.	Last 3 minutes spend on daily 10 working through your current times tables. Chn complete the questions on whiteboards. You then mark them as a class. Show them the question and target those chn to get them to give you the answers.
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Week 6		3 minutes on the teaching.	6 minutes on times table each day.																
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Appendix 4

KS1 Maths Lesson Structure

Fluency 15 mins (taught independently of math lessons.)

Remember 15 mins

New Learning 25 mins

Problem Solving / Reasoning 5 mins

45 minutes **daily** maths lesson. Plus 15 minutes **daily** Fluency session.

REMEMBER (15mins)

Times Tables

- 5 minutes on **times tables**.
- The image below is a **counting stick array**.

0	3	6	9	12	15	18	24	27	30	33	36
	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●

Times tables Year 1

Chanting wk 1 -3.

Wk 1 focus on first half of times tables (if 2s – 0, 2, 4, 6, 8, 10).

Wk 2 now introduce second half of times tables (if 2s – 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20).

Wk 3 counting is 2s to 20 forwards and backwards.

Wk 4 Introduce 3 table facts per day using the array model.

Monday: 0 **times** 2 = 0. 1 **times** 2 = 2. 2 **times** 2 = 4.

Tuesday: 3 **times** 2 = 6. 4 **times** 2 = 8.

Wednesday 5 **times** 2 = 10. 6 **times** 2 = 12.

Thursday: 7 **times** 2 = 14. 8 **times** 2 = 16.

Friday: 9 **times** 2 = 18. 10 **times** 2 = 20.

Within this – use the counting stick. Each of the answers for your times table from 1 to 10 needs to be on there.

Wk 5 as week 4.

Wk 6 Week 2 – use the phrase 1 **multiplied by** 3 = 3. 2 **multiplied by** 3 = 6. 3 **multiplied by** 3 = 9.

Times tables Year 2

Chanting wk 1 -2 using counting stick.

Wk 1 Chanting times tables 0 – 12 using counting stick (numbers displayed).

Wk 2 Chanting times tables 0 -12 using counting stick, forwards and backwards (numbers displayed and removed).

Wk 3 Introduce 3 table facts per day using the array model.

Monday: 0 **times** 2 = 0. 1 **times** 2 = 2. 2 **times** 2 = 4.

Tuesday: 3 **times** 2 = 6. 4 **times** 2 = 8. 5 **times** 2 = 10.

Wednesday 6 **times** 2 = 12. 7 **times** 2 = 14. 8 **times** 2 = 16.

Thursday: 9 **times** 2 = 18. 10 **times** 2 = 20.

Friday: 11 **times** 2 = 22. 12 **times** 2 = 24.

Within this – use the counting stick. Each of the answers for your times table from 1 to 12 needs to be on there.

Wk 4 The same as week 3

Wk 5 Use the phrase 1 **multiplied by** 3 = 3. 2 **multiplied by** 3 = 6. 3 **multiplied by** 3 = 9.

Wk 6 Use 'Daily Ten'.