


Shelton Junior School



Mathematics & Calculation Policy

Headteacher Approval  Name: Mr Jon Bacon Date: 14/05/2026	Governor Approval DELEGATED TO HEADTEACHER	Shelton Junior School <i>Mathematics & Calculation Policy</i> Last Reviewed: May 2026 Review date: May 2027
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This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Shelton Junior School. The school's policy for mathematics is based on The National Curriculum 2014. The policy has been drawn up as result of staff discussion and has full agreement of the Governing Body. The implementation of this policy is the responsibility of all teaching and support staff.



VISION

Our mathematics curriculum aims to nurture a positive attitude and an enjoyment of maths in all our pupils. Mastery of number fluency; rapid, accurate recall and application of knowledge; and use of mathematical vocabulary will enable them to become **competent, confident, curious** and **proficient learners** who persevere in seeking solutions when problem solving and reasoning. We intend for our pupils to be able to apply their mathematical knowledge to science and other subjects and to realise that maths is essential for everyday life and to support a deeper understanding of the world around them.

As a school, we are committed to raising standards in the learning and teaching of mathematics, leading to the best possible progress and attainment for learners. This will be achieved through offering a range of opportunities in which children can use and apply their mathematical skills whilst at the same time promoting an enjoyment of mathematics.

AIMS

Our aims in teaching Mathematics are that **all** children will have a positive attitude towards mathematics becoming proficient, competent and confident, able to use and apply their knowledge and understanding by solving problems in context.

All children will:

- ✓ become fluent (confident and assured) in the fundamentals (basics or essentials) of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual (theoretical) understanding and the ability to recall and apply knowledge rapidly and accurately.
- ✓ be able to reason mathematically by following a line of enquiry, conjecturing (inferring or speculating about) relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- ✓ be able to solve problems by applying mathematics to a variety of routine and non-routine problems with increasing complexity and sophistication including breaking down problems into a series of simpler steps and through persevering in seeking solutions.

ROLES AND RESPONSIBILITIES

The Mathematics subject leader will:

- ensure that this policy is disseminated and implemented fully to develop and embed consistent, high quality Mathematics teaching throughout the school;
- set high expectations and work alongside the Headteacher/Senior Leadership Team to monitor learning, teaching and progress every term;

- keep up to date with statutory requirements and recommendations in relation to Mathematics and share these in a timely manner with the Headteacher/ Senior Leadership team and Teaching Staff;
- keep parents, staff and Governors informed of developments;
- regularly review the development of Mathematics through the monitoring and evaluation of the Mathematics Action Plan;
- determine and set in place the Long and Medium Term Plans taken from 'White Rose Maths';
- offer support to teachers in areas of planning, teaching and assessment, identifying training needs and delivering training;
- monitor resources, identify areas of need, prioritise and purchase resources within the allocated budget.

Teachers will:

- ensure they have familiarised themselves with all elements of the Mathematics Policy and understand what is required of them, seeking clarification from the Mathematics Lead;
- have high expectations for all children to achieve and enjoy Mathematics;
- provide opportunities for pupils to use the relevant mathematic skills in Science and other curriculum areas;
- plan, teach and assess learning through daily mathematics lessons, additional interventions and cross-curricular opportunities, using 'White Rose Maths' programmes of study;
- plan provision to meet the learning needs of all children so that they make expected or better progress and attain in-line with their end-of-KS1 starting points;
- ask a wide range of effective, targeted questions to challenge, probe and extend pupils' understanding and thinking;
- regularly mark work according to the school's Marking and Feedback Policy, using this to identify gaps in learning and provide next-steps for learning;
- use Class Track Assessment for Learning (AfL) grids as a means of recording and tracking the progress of Mathematics skills;
- use White Rose Maths summative tests to support the end-of-term assessment process;
- maintain a current 'Working Wall' which includes specific vocabulary; examples of problem solving and reasoning; and links to other areas of mathematics.

Support Staff will:

- ensure they have familiarised themselves with all elements of the Mathematics Policy and understand what is required of them, seeking clarification from the Mathematics Lead;
- have high expectations of themselves and the pupils;
- through collaborative practice with the teacher, have a clear understanding of their role within lessons and interventions
- have good subject knowledge in relation to the lessons and interventions they are in;
- understand the **specific** learning for their focus children and communicate this clearly;
- through collaborative practice with the teacher, prepare appropriate resources to enable learning;
- contribute to the Assessment for Learning (AfL) process by sharing progress observed with the teacher;
- take part in continued professional development (CPD) opportunities for Mathematics.

Governors will:

- work with the Headteacher, ensuring that the quality of Mathematics teaching is accounted for at termly meetings with the Mathematics Leader;
- review this policy according to the Policy Schedule and support the Headteacher and Mathematics Leader in their implementation of the policy;
- work with the Headteacher and Senior Leadership team to ensure that the Mathematics Policy and other policies that link to it are upheld and suitably resourced.

Parents/Carers will:

- be encouraged to develop positive attitudes to Mathematics and actively support their children at home;
- be well-informed of their children's attainment, progress and achievement through annual reports, parents' evenings and workshops.

INCLUSION

Staff will ensure that every child receives an equal opportunity within Mathematics activities, regardless of race, gender, ability or Special Educational Need.

Our daily Mathematics lesson is appropriate for all pupils, regardless of ability or need; Special Educational Need and Disability (SEND) or Gifted and Talented (G&T) for example. Teachers will engage and challenge **all** pupils through appropriate differentiation and support, taking account of any Educational Psychologist recommendations or Multi-element education plan targets.

Children with English as an additional language will be supported in a variety of ways; e.g. modelling of spoken language and agreed verbal prompts, repeated instructions, emphasis of key words, using picture cues and playing mathematical games. Children will be encouraged (and expected) to take part in paired and group tasks.

TEACHING AND LEARNING

The Mathematics programme of Study (National Curriculum 2014) is based on six key areas. It gives detailed guidance on what should be taught within these areas and is designed to develop skills in **Fluency, Reasoning and Problem Solving**.

Number and Place Value

- Reading and writing numbers
- Counting
- Number sequences
- Place value and ordering numbers
- Estimating and rounding
- Fractions, decimals, percentages, ratio and proportion
- Algebra

Calculations

- Understanding addition, subtraction, multiplication and division
- Rapid mental recall of number bonds and times table facts
- Mental calculation strategies
- Informal pencil and paper calculation methods

- Formal written calculation methods
- Flexible and efficient choice of calculation method (**Fluency**)
- Estimating and checking results

Problem Solving

- Make decisions about how to solve a problem
- Use and apply mathematics in different routine problems
- Use mathematical relationships to understand how problems could be tackled (**Reasoning**)
- Break problems down into smaller steps
- Decide which calculations are needed
- Apply previously learned mathematics instantly and accurately (Fluency)
- Use mathematical language to justify chosen methods and strategies

Measurement

- Measure and compare lengths, mass, volume or capacity
- Convert between measures
- Money
- Time
- Perimeter and area

Geometry

- 2 dimensional and 3 dimensional shape
- Angles
- Position, direction and movement

Statistics

- Collect, present and interpret data in a variety of forms e.g. graphs, charts, tables and diagrams
- interpret and present discrete and continuous data
- solve comparison, sum and difference problems

Spoken language

The National Curriculum for Mathematics also reflects the importance of **spoken language** in pupils' development across the whole curriculum. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. Speaking and listening play an important part in every lesson. All staff model effective use of vocabulary and clear explanations. They have high expectations of **all** children in their responses.

MASTERY:

The core of our teaching is based on the concept of 'Teaching for **Mastery**'.

- A mathematical concept or skill has been mastered when a child can represent it in multiple ways, has the mathematical language to communicate related ideas, and can independently apply the concept to new problems in unfamiliar situations.
- Mastery is a long-term goal, achieved through exploration, clarification, practice and application **over time**. (It is NOT just being able to memorise key facts and procedures which tends to lead to superficial understanding that can be easily forgotten).

Mathematics lessons are crafted around the **5 Big Ideas** behind teaching for mastery:

1. Coherence

Every lesson or set of lessons must be built around **small coherent steps** with a focus on vocabulary and sentence stems. Coherent steps are the key to bringing the whole class with you.

2. Representations and Structures

Concrete – children should have the opportunity to use concrete objects and manipulatives (equipment) to help them understand what they are doing.

Pictorial – alongside this, children should use pictorial representations (pictures, diagrams, graphs etc). These can then be used to help reason and solve problems.

Abstract – both concrete and pictorial representations should support children’s understanding of abstract methods (calculations).

3. Fluency

Children are expected to **recall** and **apply** mathematical knowledge both **rapidly** and **accurately** (facts and procedures).

Children are expected to confidently move between contexts and representations, recognise relationships and make connections.

4. Number sense

Children are expected to know what a number looks like; understand the different ways it can be shown; read, write, order, compare and round numbers; have **rapid recall** of Number bonds and Multiplication and Division facts.

5. Variation

Conceptual variation

- When there is a change in how the maths is presented – the problem in a different context, a different visual, missing boxes etc.

Procedural variation

- When there is a change in the method used to solve the same problem e.g. repeated addition versus multiplication in a column.

Every classroom must have a working wall for mathematics which reflects the importance of the **5 Big Ideas** and supports current learning.

Problem Solving and Reasoning (Dong nai jing)

Children must have the opportunity to apply problem solving and reasoning skills in every Mathematics lesson. Dong nao jing problems will be completed to allow the children think deeply in the lessons.

WHITE ROSE MATHS

Children are taught using the **White Rose Maths** schemes of learning. The Age-Related Expectations (ARE) are contained in units set out in blocks for each term. Each unit is broken down into small steps progression making the curriculum accessible to the vast majority of children.

Lower key stage 2 - years 3 and 4

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word-reading knowledge and their knowledge of spelling.

Upper key stage 2 - years 5 and 6

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

The Rosenshine Principles

The Rosenshine principles are used throughout maths lessons at Shelton. This involves, a Rosenshine starter at the beginning of each lesson to encourage the children to think deeply. The Rosenshine principles are used to allow the children to recap previous learning and make connections. Learning is also broken down to allow the children to build on this previous learning.

CALCULATIONS POLICY

Shelton Junior School has adopted the White Rose Maths calculation policy. This sets out the progression of calculation methods used for addition, subtraction, multiplication and division. The range of methods taught develops mental skills and leads to the use of efficient formal written algorithms. The calculation policy is shared with parents.

RECORDING WORK

Work is recorded in squared-paper books. Pupil dry-wipe boards are also regularly used in lessons, providing a convenient medium for informal jottings and formal written calculation methods. Work can be easily assessed by staff, enabling lesson content to be instantly and effectively adapted as a result. Children are encouraged to work methodically, using the most appropriate, efficient method of recording.

When working in books, Shelton Junior School Presentation Policy is followed.

FEEDBACK and MARKING (also see Marking and Feedback Policy)

Feedback

Teacher's feedback will provide children with the information they need to make better progress. Feedback will always be constructive and sensitive because any assessment has an emotional impact. Feedback comments on the work rather than the child; this is constructive for both learning and motivation. As a result of this, verbal or written feedback to pupils is primarily descriptive and emphasizes strengths, identifies challenges, and points to next steps. As teachers assess understanding, they will adapt their teaching to address misconceptions, consolidate learning and introduce new learning.

Marking

We aim to ensure that all children have their work marked in such a way that it will lead to improved learning, develop self-confidence, raise self-esteem and provide opportunities for assessment – including self-assessment. Marking will encourage learners to be equally aware of **how** and **what** they are learning. The emphasis in marking will be on a child's achievement and what the next steps need to be in order for the child to further improve. These improvements will link to Age-Related expectations for individuals, small groups or the whole teaching-group.

ASSESSMENT

At Shelton Junior School, we use assessment tracking grids for formative assessment (Otrack). In Mathematics, pupils are assessed against their year group's Age-Related Expectations (ARE) throughout the year.

End of Autumn Term:

Working below ARE	Age currently working at. E.g. 3w1
Working towards ARE	W1
Working at ARE	W2
Working above ARE	W3

End of Spring Term:

Working below ARE	Level currently working at. E.g. 3w1
Working towards ARE	W2
Working at ARE	W3
Working above ARE	EXS

End of Summer Term:

Working below ARE	Level currently working at. E.g. 3w1
Working towards ARE	W3
Working at ARE	EXS
Working above ARE	GDS

Vocabulary:


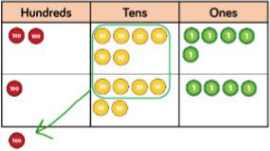
Addend	A number to be added to another.
Aggregation	Combining two or more quantities or measures to find a total.
Augmentation	Increasing a quantity or measure by another quantity.
Commutative	Numbers can be added to any order.
Complement	In addition, a number and its complement make a total e.g. 300 is the complement to 700 to make 1,000.
Difference	The numerical difference between two numbers is found by comparing the quantity in each group.
Exchange	Change a number or expression for another of an equal value.
Minuend	A quantity or number from which another is subtracted.
Partitioning	Splitting a number into its components.
Reduction	Subtraction as takeaway.
Subitising	Instantly recognising the number of objects in a small group without needing to count.
Subtrahend	A number to be subtracted from another.
Sum	The result of an addition.
Total	The aggregate or the sum found by addition.
Array	An ordered collection of counters, cubes or other items in rows and columns.
Commutative	Numbers that can be multiplied in any order.
Dividend	In division, the number that is divided.
Divisor	In division, the number by which another is divided.
Factor	A number that multiplies with another to make a product.
Multiplicand	In multiplication, a number to be multiplied by another.
Product	The result of multiplying one number by another.

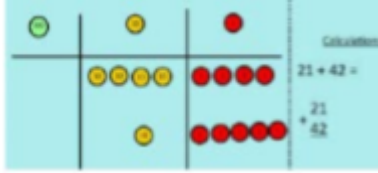

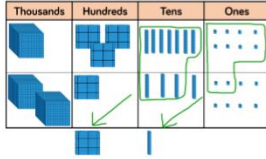

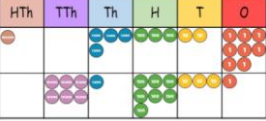


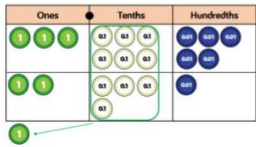
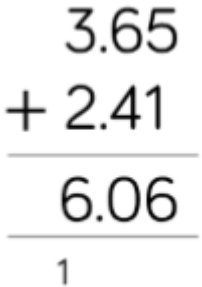
Quotient	The result of a division.
Remainder	The amount left over after a division when the divisor is not a factor of the dividend.
Scaling	Enlarging or reducing a number by a given amount, called the scale factor.

Addition:

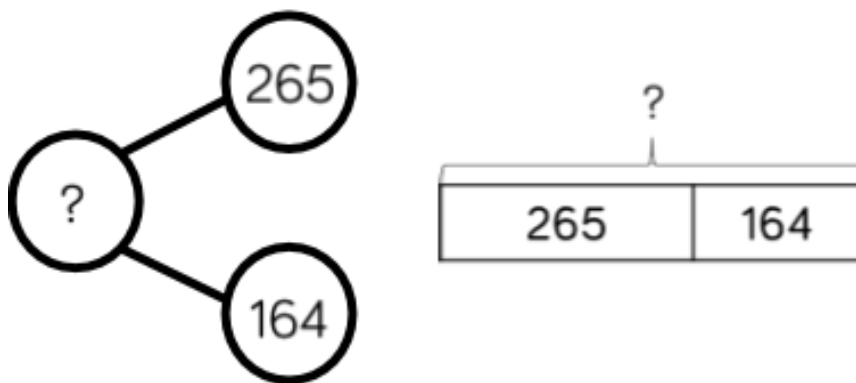
Vocabulary: sum, total, parts and wholes, plus, add, altogether, more than, 'is equal to', 'is the same as'.

Skill	Year	Presentation
Add up to 3 digits numbers	3	Part whole model Bar model Base 10 Place value counters Column addition
Add up to 4 digit numbers	4	Part whole model Bar model Base 10 Place value counters Column addition
Add with more than 4 digit numbers	5	Part whole model Bar model Place value counters Column addition
Add with up to 3 decimal places	6	Part whole model Bar model Place value counters Column addition

Objective	Concrete	Pictorial	Abstract																				
Add up to 3 digit numbers using columnar addition. Column addition	Using manipulatives children are to line up hundreds, tens and ones.  Children should be secure with manipulatives before moving onto pictorial presentation.	Children are to draw the manipulatives that they are using in a place value frame.  Secure knowledge of place value with place value frames.	Children are to use the column method. $\begin{array}{r} 265 \\ + 164 \\ \hline 429 \\ 1 \end{array}$ <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td></td> <td>3</td> <td>7</td> <td>8</td> </tr> <tr> <td>+</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td></td> <td>8</td> <td>3</td> <td>4</td> </tr> <tr> <td></td> <td>1</td> <td>1</td> <td></td> </tr> </table>		H	T	O		3	7	8	+	4	5	6		8	3	4		1	1	
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	 <p>When regrouping, children exchanges 10 ones for 1 ten and 10 tens for 1 hundred.</p>		Begin without any exchanges. Progress this to 1 and 2 exchanges.
<p>Add up to 4 digits numbers using columnar method.</p> <p>Column addition</p>	<p>Children continue to use manipulatives to add. Exchanging 10 ones for 1 ten, 10 tens for 1 hundred and 100 hundreds for 1 thousand.</p> 	<p>Children are to draw a pictorial representation of the manipulatives to further their understanding.</p> 	<p>Children are to use the column method. Children should be able to calculate up to three exchanges.</p> 
<p>Add numbers with more than 4 digits</p>	<p>See Year 4</p>	<p>See Year 4</p> 	<p>Children are to continue to use the column method.</p> 
<p>Add up to 3 decimal places</p>	<p>Use decimal place counters and model exchange for addition.</p> 	<p>Children are to draw pictorial presentations using decimal place value counters.</p> 	<p>Children are to use the column method with the decimal point in the correct place.</p> 

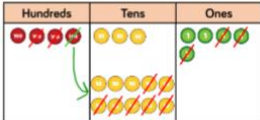
Fluency variation:

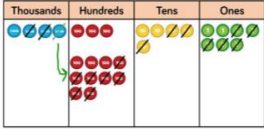
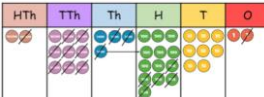
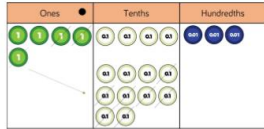


Subtraction:

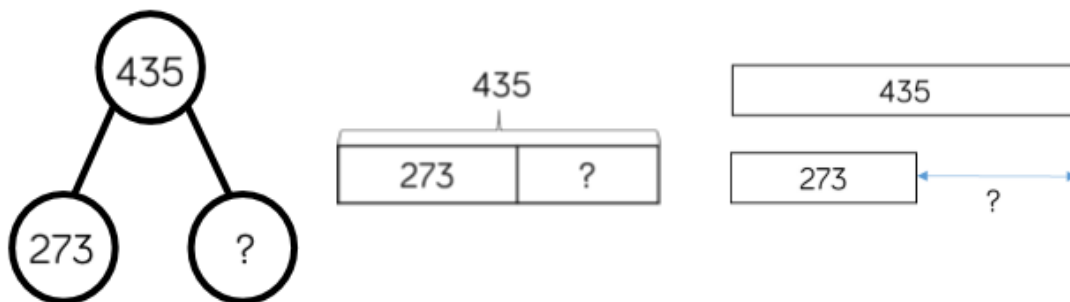
Vocabulary: takeaway, less than, the difference, subtract, minus, fewer and decrease.

Skill	Year	Presentation
Subtract with up to 3 digits numbers	3	Part whole model Bar model Base 10 Place value counters Column subtraction
Subtract with up to 4 digit numbers	4	Part whole model Bar model Base 10 Place value counters Column subtraction
subtract with more than 4 digit numbers	5	Part whole model Bar model Place value counters Column subtraction
Subtract with up to 3 decimal places	5	Part whole model Bar model Place value counters Column subtraction

Objective	Concrete	Pictorial	Abstract
Subtract with up to 3 digits numbers	Using manipulatives children are to line up hundreds, tens and ones. Children should be secure with manipulatives before moving onto pictorial presentation.	Children are to use draw manipulatives using a place value frame. 	When confident with the pictorial method. Children should use column subtraction. $\begin{array}{r} ^3 ^1 \\ 435 \\ - 273 \\ \hline 262 \end{array}$

<p>Subtract with up to 4 digit numbers</p>	<p>Model progress of exchanging using manipulatives.</p>	<p>Children are to draw a range of manipulatives to show their exchange.</p> 	<p>Column method to be used to show number of exchanges.</p> $\begin{array}{r} 3 \ 1 \\ 4357 \\ - 2735 \\ \hline 1622 \end{array}$																				
<p>Subtract with more than 4 digit numbers</p>	<p>Place value counters should be used when subtracting more than 4 digit numbers.</p>	<p>Children should be encouraged to draw place value counters using a place value frame.</p> 	<p>Children should be encouraged to use the column subtraction to subtract larger numbers</p> <table border="1" data-bbox="1082 864 1382 987"> <tr><td></td><td>2</td><td>9</td><td>3</td><td>8</td><td>2</td></tr> <tr><td>-</td><td>1</td><td>8</td><td>2</td><td>5</td><td>0</td><td>1</td></tr> <tr><td></td><td>1</td><td>1</td><td>1</td><td>8</td><td>8</td><td>1</td></tr> </table>		2	9	3	8	2	-	1	8	2	5	0	1		1	1	1	8	8	1
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<p>Subtract with up to 3 decimal places</p>	<p>Place value counters and plain counters on a place value grid should be used practically by the children.</p> <p>Ensure children have a solid understanding of manipulatives before using pictorial presentations.</p>	<p>Children should have experience of using place value counters with a variety of decimal places.</p> 	<p>Once confident with pictorial representations, children should use formal methods, using decimal points correctly.</p> $\begin{array}{r} 4 \ 1 \\ 5.43 \\ - 2.7 \\ \hline 2.73 \end{array}$																				

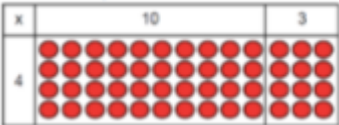

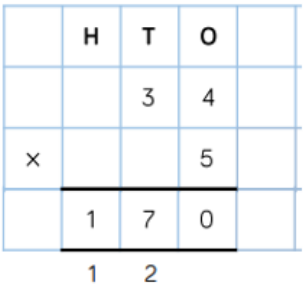
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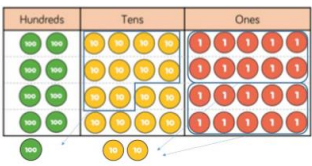

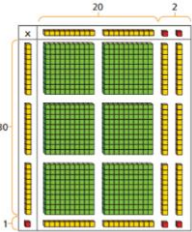


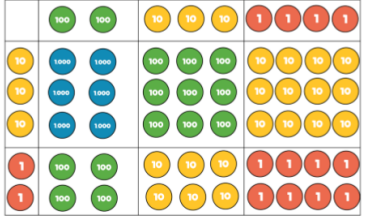
Multiplication:

Vocabulary: double, times, multiplied by, the product of, groups of, lots of, 'is equal to' and 'is the same as'.

Skill	Year	Presentation
Multiply 2-digit by 1-digit numbers.	3/4	Base 10 Place value counters Short written method
Multiply 3-digit by 1-digit numbers.	4	Base 10 Place value counters Short written method
Multiply 4-digit by 1-digit numbers.	5	Place value counters Short written method
Multiply 2-digit by 2-digit numbers.	5	Base 10 Place value counters Short written method Grid method
Multiply 2-digit by 3-digit numbers.	5	Place value counters Short written method Grid method
Multiply 2-digit by 4-digit numbers.	5/6	Formal written method

Objective	Concrete	Pictorial	Abstract
Multiply 2-digit by 1-digit numbers.	<p>Show the link with arrays.</p>  <p>Progress onto base 10 and place value counters.</p>  <p>Make exchanges when needed.</p>	<p>Children are to draw place value counters and show any exchanges.</p>	<p>Formal methods should be used when the children have a solid understanding of pictorial representations.</p> 

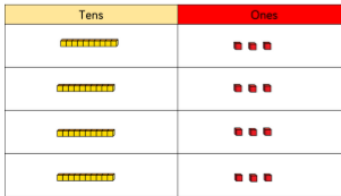

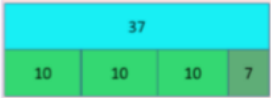
<p>Multiply 3-digit by 1-digit numbers.</p>	<p>Place value counters should be used to find groups of numbers.</p>  <p>Starting at the ones, make any exchanges when needed.</p>	<p>Children are to draw pictorial representations using place value counters.</p>	<p>Formal methods should be used.</p> <table border="1" data-bbox="1023 309 1289 613"> <tr><td></td><td>H</td><td>T</td><td>O</td></tr> <tr><td></td><td>2</td><td>4</td><td>5</td></tr> <tr><td>x</td><td></td><td></td><td>4</td></tr> <tr><td colspan="4"><hr/></td></tr> <tr><td></td><td>9</td><td>8</td><td>0</td></tr> <tr><td></td><td>1</td><td>2</td><td></td></tr> </table>		H	T	O		2	4	5	x			4	<hr/>					9	8	0		1	2							
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<p>Multiply 4-digit by 1-digit numbers.</p>	<p>Place value counters can be used on a place value frame.</p>  <p>Start at the ones, to complete any exchanges.</p>	<p>Children can draw their own counters and group them in a pictorial method.</p>	<p>When confident, children should be encouraged to move away from concrete and pictorial methods and use a formal method.</p> <table border="1" data-bbox="1023 880 1209 1055"> <tr><td></td><td>Th</td><td>H</td><td>T</td><td>O</td></tr> <tr><td></td><td>1</td><td>8</td><td>2</td><td>6</td></tr> <tr><td>x</td><td></td><td></td><td></td><td>3</td></tr> <tr><td colspan="5"><hr/></td></tr> <tr><td></td><td>5</td><td>4</td><td>7</td><td>8</td></tr> <tr><td></td><td>2</td><td></td><td>1</td><td></td></tr> </table>		Th	H	T	O		1	8	2	6	x				3	<hr/>						5	4	7	8		2		1	
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<p>Multiply 2-digit by 2-digit numbers.</p>	<p>Use the area model to demonstrate the size of the numbers. Base 10 and place value counters can be used.</p> 	<p>Children can draw their own counters and group them in a pictorial method.</p>	<p>The formal method can be used once the children are confident using the concrete and pictorial methods.</p> <table border="1" data-bbox="1023 1312 1203 1585"> <tr><td></td><td>H</td><td>T</td><td>O</td></tr> <tr><td></td><td></td><td>2</td><td>2</td></tr> <tr><td>x</td><td></td><td>3</td><td>1</td></tr> <tr><td colspan="4"><hr/></td></tr> <tr><td></td><td></td><td>2</td><td>2</td></tr> <tr><td></td><td>6</td><td>6</td><td>0</td></tr> <tr><td></td><td>6</td><td>8</td><td>2</td></tr> </table>		H	T	O			2	2	x		3	1	<hr/>						2	2		6	6	0		6	8	2		
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<p>Multiply 2-digit by 3-digit numbers.</p>	<p>Continue to use the area model when multiplying 2-digit by 3-digit numbers. Place value counters will be more efficient.</p>	<p>See above.</p>	<p>Encourage children to move towards the formal written method, seeing the links between the grid method.</p>																														

			<table border="1" data-bbox="1023 197 1380 336"> <tr><td>×</td><td>200</td><td>30</td><td>4</td></tr> <tr><td>30</td><td>6,000</td><td>900</td><td>120</td></tr> <tr><td>2</td><td>400</td><td>60</td><td>8</td></tr> </table> <table border="1" data-bbox="1023 392 1220 689"> <tr><th>Th</th><th>H</th><th>T</th><th>O</th></tr> <tr><td></td><td>2</td><td>3</td><td>4</td></tr> <tr><td>×</td><td></td><td>3</td><td>2</td></tr> <tr><td></td><td>4</td><td>6</td><td>8</td></tr> <tr><td>¹7</td><td>¹0</td><td>2</td><td>0</td></tr> <tr><td>7</td><td>4</td><td>8</td><td>8</td></tr> </table>	×	200	30	4	30	6,000	900	120	2	400	60	8	Th	H	T	O		2	3	4	×		3	2		4	6	8	¹ 7	¹ 0	2	0	7	4	8	8
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Multiply 2-digit by 4-digit numbers.			<p>Children need to be confident using the written method to calculate long division.</p> <p>Consider where exchanged digits take place and make sure that this is consistent.</p> <table border="1" data-bbox="1023 1030 1292 1377"> <tr><th>TTh</th><th>Th</th><th>H</th><th>T</th><th>O</th></tr> <tr><td></td><td>2</td><td>7</td><td>3</td><td>9</td></tr> <tr><td>×</td><td></td><td></td><td>2</td><td>8</td></tr> <tr><td>²2</td><td>¹5</td><td>⁹3</td><td>¹7</td><td>2</td></tr> <tr><td>¹5</td><td>4</td><td>7</td><td>8</td><td>0</td></tr> <tr><td>7</td><td>6</td><td>6</td><td>9</td><td>2</td></tr> </table>	TTh	Th	H	T	O		2	7	3	9	×			2	8	² 2	¹ 5	⁹ 3	¹ 7	2	¹ 5	4	7	8	0	7	6	6	9	2						
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Division:

Vocabulary: share, group, divide, divided by, half, 'is equal to' and 'is the same as'.

Skill	Year	Presentation
Divide 2-digits by 1-digit (no exchange)	3	Place value counters Part whole model
Divide 2-digits by 1-digit (sharing with exchange)	3	Place value counters Part whole model
Divide 2-digits by 1-digit (sharing with remainders)	3/4	Place value counters Part whole model
Divide 2-digits by 1-digit (grouping)	4/5	Place value grids Written short division
Divide 3-digit by 1 digit (sharing with exchange)	4	Place value counters Part whole model

Divide 4-digits by 1-digit (grouping)	5	Place value grids Written short division	
Divide multi-digits by 2-digits (short division)	6	List of multiples	
Divide multi-digits by 2-digits (long division)	6	List of multiples	
Objective	Concrete	Pictorial	Abstract
Divide 2-digits by 1-digit (no exchange)	When dividing numbers, children can use place value counters and Base 10 to share numbers.	Children should start using a place value frame and draw the manipulatives when dividing.	Children should build on from their concrete and pictorial understanding to calculate number sentences. How many 6's are there in 24? $24 \div 6 =$
Divide 2-digits by 1-digit (sharing with exchange)	When dividing numbers, children can use Base 10 and place value counters to exchange one ten for ten ones.	Children should start using a place value frame and draw the manipulatives when dividing.	Progressing from their concrete and pictorial understanding, children should compare calculations. Compare the statements using <, > or = $48 \div 4$ ○ $36 \div 3$ $52 \div 4$ ○ $42 \div 3$ $60 \div 3$ ○ $60 \div 4$
Divide 2-digits by 1-digit (sharing with remainder s)	Divide manipulatives between groups and identify the remaining amounts. 	Use a number line to jump forward then identify the amount left over.  Use bar models to identify the division with a remainder.  Use place value counters to exchange when needed.	Complete written remainders using r. $53 \div 4 = 13 \text{ r}1$

<p>Divide 2-digits by 1-digit (grouping)</p>	<p>When using the short division method, children use grouping. Starting with the largest place value, they group the divisor.</p>	<p>Using pictorial representations, children should consider the amount of groups that can be made.</p>	<p>Once confident with the concrete and pictorial methods, children should use formal methods.</p>
<p>Divide 3-digit by 1 digit (sharing with exchange)</p>	<p>Children can continue to use place value counters to share 3-digit numbers into equal groups.</p>	<p>Once the children are comfortable with the concrete method, place value frames should be used.</p>	<p>Partitioning can then be used to support this method.</p>
<p>Divide 4-digits by 1-digit (grouping)</p>	<p>Place value counters or plain counters can be used to divide the 4-digit numbers.</p>	<p>Children can then draw their own counters and group them.</p>	<p>Children should be encouraged to use the formal methods, once they have a good understanding of the concrete and pictorial.</p>

Divide multi-digits by 2-digits (short division)	See above	See above	<p>Written methods are more accurate than concrete or pictorial methods when dividing multi-digit by 2-digit numbers.</p>
Divide multi-digits by 2-digits (long division)	See above	See above	<p>Children should continue to use the formal method when using long division.</p> <p>Children can either leave a remainder or convert it to a fraction.</p> <p> $1 \times 15 = 15$ $2 \times 15 = 30$ $3 \times 15 = 45$ $4 \times 15 = 60$ $5 \times 15 = 75$ $10 \times 15 = 150$ </p>