

## Year 3 Programme of Study

### Amended for 2020-21 in response to school closures

School closure during the 2019-20 academic year will have had a significant impact on all pupils' mathematics learning. In some cases, this will have been beneficial for children's learning, providing them with more opportunities to explore maths in real-life contexts. Teachers have worked hard to provide home learning solutions, including online classrooms, investigations, and other home-learning materials; all of these will have supported pupils in making progress in mathematics. However, as pupils return to school, there will be uncertainty about the learning which has taken place. We have created amended Programmes of Study and Maths Meeting Guidance to help you understand the curriculum content which has likely been missed and plan for this.

### What amended resources are we providing?

To support you in planning for the academic year 2020-2021, we are providing the following:

- amended Programmes of Study for Years 2 to 6
- amended Maths Meeting guidance, with summer term learning from the previous year group included in red, as this content may not have been taught
- an amended Yearly Planner which allows for the additional time required to teach extra lessons

The Yearly Planner is an editable Excel document and is available on our online platform.

### How have we created the amended Programmes of Study?

We have taken the learning content that pupils may have missed during the summer term of the Mathematics Mastery curriculum of Years 1 to 5 and mapped out where this learning is required in Years 2 to 6. Using this, we have produced amended Programmes of Study for Years 2 to 6, which:

- explain key learning from the previous year and where it can be found
- suggest where you might want to teach lessons from the previous year's curriculum
- suggest revised durations for each unit

The number of extra lessons and unit length suggestions are for guidance only. The amount of time required for each unit will depend on the experiences your pupils have had during school closure. Do keep an eye on the Yearly Planner to ensure you are broadly on track to cover all the expected curriculum content across the year.

## How should I use these additional resources?

The amended Programmes of Study are written on the assumption that the pupils have missed the previous summer term's learning. Of course, this may not always be the case where home learning has taken place. We recommend firstly speaking to your pupils' teacher(s) from the previous year to find out what home learning was provided during school closure (whilst acknowledging that not all pupils may have accessed this). They will also be able to tell you which parts of the previous year's curriculum they had covered before school closure, bearing in mind that the amended Programmes of Study only take account of missed summer term learning.

We then advise reading through the whole amended Programme of Study for the year you are teaching, to get a sense of the learning which has been missed and how we have recommended ensuring it is covered. We recommend visiting the professional development on our online platform for missed units from the previous year to familiarise yourself with the content.

There are links to the previous year's missed units in the amended Programme of Study.

Once you have a good understanding of where the key bits of missed learning fit within the year, consider where you can use Maths Meetings to pre-teach concepts and/or language. If the missed learning is only required in the summer term, you may be able to sufficiently cover any missed learning throughout the year, through Maths Meetings and in other areas of the curriculum, so that the summer term units for 2029-21 can be taught as planned.

In some cases, we have lengthened units by a week. In these cases, you may wish to keep the learning blocked as we have planned, or you may prefer to split the unit into two shorter units, particularly where the content is more self-contained, e.g. shape.

## Will I still be able to teach the whole curriculum in a year?

The normal Mathematics Mastery curriculum consists of 30 weeks of planned lessons (including consolidation lessons) per year group. There are 38 weeks in the school teaching year. To accommodate the missed learning, we have recommended lengthening some units. You will therefore notice that the Yearly Planner is 'fuller' than normal, with fewer consolidation weeks. By following the amended Programme of Study, which introduces any missed content 'just in time', you should be able to ensure pupils catch up on any missed learning as well as covering all the essential elements of the year's curriculum.

## Can I just teach lessons from the previous year without adapting them?

Where we have suggested teaching lessons from the previous year, adaptations will be necessary, as is always the case. This may be simply altering the context of a lesson to something with which pupils are familiar. It could also involve adapting the representations and language used as well as the tasks themselves.

In some cases, we have suggested reading through a sequence of lessons and adapting these according to your pupils' needs. For example, two lessons may have a similar focus and you might amalgamate them, choosing a task from each, as you know your pupils will benefit from them. Alternatively, you might take the key learning from three lessons and plan one lesson which incorporates the main ideas side-by-side.

## Amended Year 3 Programme of Study

These are Mathematics Mastery's suggestions for amendments to units based on content that pupils will have missed in the summer term in the previous academic year.

The Year 2 summer term units are:

- Unit 12: Numbers within 1000 (1 week)
- Unit 13: Measuring capacity and volume (2 weeks)
- Unit 14: Mass (1 week)
- Unit 15: Exploring calculation strategies (2 weeks)
- Unit 16: Multiplication and division (3 weeks)

The missed unit which is likely to have the most significant impact on Year 3 learning is the final Year 2 unit on multiplication and division. Multiplication and division can be initially quite challenging concepts because pupils' early mathematical experiences are more often based on additive reasoning. The introduction of Year 3 multiplication and division will require careful scaffolding, ensuring pupils link their KS1 experiences of repeated addition, equal groups and sharing. Bear in mind that it is in Year 2 Unit 6 that the multiplication and division symbols are introduced, so pupils' understanding of the abstract mathematical notation used to represent multiplicative situations will not be particularly well-developed (so don't assume pupils will understand what a written multiplication or division equation means!).

The missed opportunities to discuss and compare calculation strategies in Year 2 summer term will also impact on pupils' fluency in Year 3. Maths Meetings should be utilised to regularly practise and compare strategies.

We have not scheduled any extra time on the Yearly Planner for Year 3 Unit 11: Measures, although three weeks of Year 2 measure learning will have been missed. This scheduling assumes that Maths Meetings are used throughout the autumn and spring terms to teach and consolidate the central Year 2 measure objectives. See the Maths Meeting guidance for recommendations. If your pupils have particular gaps in their measure understanding, you may wish to spend longer on it in the summer term.

Please also refer to the Yearly Planner to see how we expect the unit lengths to fit into the school calendar.

The pink boxes are abridged curriculum notes. These are Mathematics Mastery's suggestions for amendments to units based on content that pupils will have missed in the summer term of the previous academic year.

### Autumn term

<p>Unit 1 <b>Number sense and exploring calculation strategies</b>  (4 weeks)</p>	<p>Year 3 Unit 1 focuses on developing number sense and reasoning within 100. If pupils have missed the Year 2 summer term content, they should still be able to access everything in this unit, but they may require more consolidation time.</p> <p>The learning up to Lesson 7 should not present any issues. In Lessons 8 to 13, pupils revisit calculation strategies they learnt in KS1, such as the 'Make ten' strategy and 'round and adjust'. The aim is that they begin to use these strategies with increasing fluency. However, as pupils will have missed <b>Year 2 Unit 15: exploring calculation strategies</b>, they will have had less practice applying these strategies. Consider planning additional consolidation lessons at this point (but also bear in mind that pupils are not expected to be completely fluent in these strategies as they</p>
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	<p>will continue to revisit them frequently through the year and key stage).</p> <p>We also recommend looking at <b>Year 2 Unit 15 Lessons 5 to 8</b>. These Year 2 lessons introduce column addition and subtraction, both with and without regrouping, with 2-digit numbers. In the Year 3 materials, the formal written column method first appears in Unit 4. However, there it is with 3-digit numbers. Speak to your pupils' previous teacher(s) to find out what pupils experienced in Year 2 and consider whether your pupils would benefit from the Year 2 Unit 15 lessons at this point. We recommend teaching them here rather than directly before the column addition lessons in Year 3 Unit 4 in order to allow for reflection between the two experiences and so as not to break the flow of Year 3 Unit 4 (as pupils should already be feeling confident adding and subtracting 3-digit numbers by the time they reach the lessons on column addition and subtraction).</p> <p>Year 3 Unit 1 is normally a 3-week unit. This year we have allowed an additional week for consolidation, making it a 4-week unit.</p> <ul style="list-style-type: none"> <li>• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> <li>• recognise the place value of each digit (tens, ones), compare and order numbers up to 100</li> <li>• find 10 more or less than a given number</li> <li>• read and write numbers up to 100 in numerals and in words</li> <li>• solve number problems and practical problems involving these ideas</li> <li>• identify, represent and estimate numbers using different representations, including the number line</li> <li>• add and subtract amounts of money to give change, using both £ and p in practical contexts</li> </ul>
<p>Unit 2 <b>Place value</b>  (2 weeks)</p>	<p>Pupils will have missed <b>Year 2 Unit 12: numbers within 1000</b>. This is a four-lesson unit which prepares pupils for Year 3 Unit 2 by providing some initial exploration of 3-digit numbers. The objectives from the Year 2 unit are all covered again in the Year 3 unit, but as pupils will have had less time to explore these previously, you may want to take an extra couple of lessons for consolidation during the first week of Year 3 Unit 2. For example, depending on your pupils' starting points, you may want to teach <b>Year 2 Unit 12 Lesson 1</b> ('the hundreds place') before teaching Year 3 Unit 2 Lesson 1 ('read and write 3-digit numbers') to give extra time for exploration and practice.</p> <p>Do refer to Year 2 Unit 12 for ideas for consolidation tasks.</p> <p>Year 3 Unit 2 is normally a 2-week unit and we have allowed 2 weeks for it this year too. Aim to complete Units 1 and 2 in the first half term.</p>

	<ul style="list-style-type: none"> <li>• identify, represent and estimate numbers using different representations</li> <li>• find 10 or 100 more or less than a given number</li> <li>• recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</li> <li>• compare and order numbers up to 1000</li> <li>• read and write numbers up to 1000 in numerals and in words</li> <li>• solve number problems and practical problems involving these ideas</li> <li>• count from 0 in multiples of 50 and 100</li> </ul>
<b>Unit 3 Graphs</b>  (1 weeks)	<ul style="list-style-type: none"> <li>• interpret and present data using bar charts, pictograms and tables</li> <li>• solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables</li> </ul>
<b>Unit 4 Addition and subtraction</b>  (3 weeks)	<p>See paragraph three of the notes to Year 3 Unit 1.</p> <ul style="list-style-type: none"> <li>• add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds</li> <li>• add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</li> <li>• estimate the answer to a calculation and use inverse operations to check answers</li> <li>• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> </ul>
<b>Unit 5 Length and perimeter</b>  (2 weeks)	<ul style="list-style-type: none"> <li>• measure, compare, add and subtract: lengths (m/cm/mm)</li> <li>• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> <li>• measure the perimeter of simple 2-D shapes</li> <li>• continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed ... and simple equivalents of mixed units (for example, 5m = 500cm)</li> </ul>

## Spring term

<b>Unit 6 Multiplication and division</b>  (3 weeks)	<p>Pupils will have missed <a href="#">Year 2 Unit 16: multiplication and division</a>, a 3-week unit which introduces the 3 and 4 times tables. Key learning in this unit includes:</p> <ul style="list-style-type: none"> <li>• the introduction of the words 'product' and 'multiple' and of 'inverse' and 'commutative' in the context of multiplication (these have already been introduced for addition)</li> <li>• exploration of arrays as models of multiplication and division</li> <li>• exploration of the inverse relationship between multiplication and division</li> <li>• introduction of bar models as ways to model multiplication and division and help pupils see the calculation required to solve problems.</li> </ul>
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These ideas will be explored again in Year 3 Unit 6, but it is worth bearing in mind that pupils will have missed these initial experiences.

The previous multiplication and division unit pupils will have been taught is [Year 2 Unit 6](#), which is where the symbols  $\times$  and  $\div$  are introduced and the 2, 5 and 10 multiplication tables are explored. We recommend reading the Unit Narrative for this unit to familiarise yourself with what pupils will have learnt. We also recommend reading the Unit Narrative for Year 2 Unit 16 in order to understand what has been missed.

The first half term of the Year 3 spring term will therefore be the first time pupils spend a substantial amount of time exploring the concept of multiplication and division. It is worth ensuring enough time is spent securing the foundations of the concept so that *all* pupils can progress together.

Our recommendation is that you teach the first three lessons of [Year 2 Unit 16](#) before beginning Year 3 Unit 6. These three lessons cover the following:

- Recalling the 3 times table through skip counting (bead strings, number lines, grouped images)
- Recalling the 4 times table through skip counting (bead strings, number lines, grouped images)
- Arrays for the 3 and 4 multiplication tables

The first two of these lessons will build on familiar representations such as the bead string and number line, and introduce the words product and multiple. They will begin to familiarise pupils with the 3 and 4 multiplication tables which will be revisited throughout Year 3 Unit 6. The third of the Year 2 lessons (arrays) will scaffold entry into Year 3 Unit 6, which begins with an exploration of the commutative property of multiplication (the array is very useful in understanding this property of multiplication).

As you teach the remainder of Year 3 Unit 6, be sure to remain aware of the experiences your pupils may have missed which would have prepared them for the learning. For example, Year 3 Unit 6 Lesson 2 introduces bar models as a representation, which would previously have been visited in Year 2 Unit 16. You may need to use consolidation lessons to provide further time for exploration.

Year 3 Unit 6 is normally a 2-week unit with 9 planned lessons and 1 consolidation lesson. With the additional 3 Year 2 lessons and allowing for a few extra consolidation lessons, we have scheduled this for 3 weeks this year.

- recall and use multiplication and division facts for the 3 and 4 multiplication tables
- count from zero in multiples of 4
- solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which  $n$  objects are connected to  $m$  objects

<p>Unit 7 <b>Deriving multiplication and division facts</b></p> <p>(3 weeks)</p>	<ul style="list-style-type: none"> <li>recall and use multiplication and division facts for the 3 and 4 multiplication tables</li> <li>write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</li> <li>solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which <math>n</math> objects are connected to <math>m</math> objects</li> </ul>
<p>Unit 8 <b>Time</b></p> <p>(2 weeks)</p>	<ul style="list-style-type: none"> <li>tell and write the time using 12-hour analogue and digital clocks, including using Roman numerals from I to XII</li> <li>estimate and read time with increasing accuracy to the nearest minute</li> <li>record and compare time in terms of seconds, minutes and hours</li> <li>use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight</li> <li>know the number of seconds in a minute and the number of days in each month, year and leap year</li> <li>compare durations of events [for example to calculate the time taken by particular events or tasks]</li> </ul>
<p>Unit 9 <b>Fractions</b></p> <p>(3 weeks)</p>	<ul style="list-style-type: none"> <li>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</li> <li>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</li> <li>count up and down in tenths</li> <li>recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10</li> <li>recognise and show, using diagrams, equivalent fractions with small denominators</li> <li>add and subtract fractions with the same denominator within one whole [ for example, <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math> ]</li> <li>compare and order unit fractions, and fractions with the same denominators</li> <li>solve problems that involve all of the above</li> </ul>

## Summer term

<p>Unit 10 <b>Angles and shape</b></p> <p>(3 weeks)</p>	<ul style="list-style-type: none"> <li>recognise angles as a property of shape or a description of a turn</li> <li>identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle</li> <li>identify horizontal and vertical lines and pairs of perpendicular and parallel lines</li> <li>draw 2-D shapes and make 3-D shapes using modelling materials</li> <li>recognise 3-D shapes in different orientations and describe them</li> <li>measure the perimeter of simple 2-D shapes</li> </ul>
<p>Unit 11 <b>Measures</b></p> <p>(3 weeks)</p>	<p>Pupils will have missed <a href="#">Year 2 Unit 13: volume and capacity</a> and <a href="#">Year 2 Unit 14: mass</a>. By the summer term of Year 3, there should have been opportunity to teach/revise the key ideas from Year 2 measure, including:</p> <ul style="list-style-type: none"> <li>the introduction of standard measures (litres/millilitres, kilograms/grams)</li> <li>their abbreviations (l/ml, kg/g)</li> <li>reading scale intervals of 2, 5 and 10</li> </ul> <p>Consider the experiences your pupils will have had with measuring volume and mass, e.g. do they bake at home? Do they go to the post office and will they have discussed the mass of letters and parcels?</p> <ul style="list-style-type: none"> <li>Year 3 Unit 11 Lesson 1 revises reading scales in 2s, 5s and 10s and goes on to read intervals of 50 and 100. If you have built plenty of practice of intervals of 2, 5 and 10 into Maths Meetings throughout the year, pupils should be able to access this lesson.</li> <li>Lesson 2 explores kilograms and grams and measures the mass of objects in mixed measures. The lesson assumes no knowledge of these measures, but depending on the experiences your pupils have had in Year 3 so far, they may need more time to explore. Use a consolidation lesson for this.</li> <li>Lesson 3 focuses on estimating mass and applies understanding from Lesson 2.</li> <li>Lessons 4-6 follow the same content structure as 1-3, but with volume. Bear in mind the same considerations.</li> </ul> <p>The remainder of Unit 11 focuses on problem solving with measures and requires pupils to apply both their understanding of measures and of the four operations. The previous calculation units will have prepared pupils for this. Ensure pupils continue to connect the problems to the measures themselves, e.g. using measuring equipment to measure out the things that are referred to in the word problems, to prevent the problem solving becoming too abstract.</p> <p>Year 3 Unit 11 is normally a 3-week unit and we have scheduled 3 weeks for it this year, based on the assumption that teachers use Maths Meetings and other areas of the curriculum, e.g. science, to ensure this learning is secure.</p> <ul style="list-style-type: none"> <li>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</li> <li>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> </ul>

	<ul style="list-style-type: none"> <li>continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (for example, 1 kg and 200g) and simple equivalents of mixed units (for example, 5m = 500cm)</li> </ul>
<p>Unit 12 <b>Securing multiplication &amp; division</b></p> <p>(1 week)</p>	<ul style="list-style-type: none"> <li>write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</li> <li>recall and use multiplication and division facts for the 8 multiplication tables</li> <li>count from zero in multiples of 8</li> </ul>
<p>Unit 13 <b>Exploring calculation strategies and place value</b></p> <p>(2 weeks)</p>	<ul style="list-style-type: none"> <li>add and subtract numbers mentally</li> <li>find 1000 more or less than a given number; recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) (Y4)</li> <li>order and compare numbers beyond 1000 (Y4)</li> <li>round any number to the nearest 10, 100 or 1000 (Y4)</li> </ul>