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Mathematics  
Mastery



Helping pupils  
achieve in maths with  
a fully resourced  
curriculum programme

Supporting subject mastery in Primary Maths



# Pupil success through empowered teaching

**Teachers** hold the key to unlocking pupils' potential, and we are here to help you on that journey.

Grown out of Ark Schools, one of the highest achieving academy groups in the UK, our team of well researched and highly skilled curriculum designers and expert trainers partner with you and your team to provide consistent, high-quality education for all pupils.

We help you provide your best teaching to all pupils, working with you to close the attainment gap. We've seen the impact on disadvantaged pupils through our Ark Schools (making nearly half a grade more progress than their peers nationally) and are here to give all pupils the opportunities that an excellent education provides.



## Success for all

We believe that education has the power to help every young person excel – and it all starts with you.

By enriching the curriculum to move beyond achieving grades alone, we create a learning structure that constantly builds contextual and conceptual knowledge.

Our holistic approach helps you to identify and support specific needs. As a result, we help to narrow the attainment gap, ensuring no child is left behind.

## Teachers make the difference

Our programmes are built for teachers, because you are the people who can make a real difference to a young person's understanding.

Professional development is central to our approach. We build teachers' subject and pedagogical expertise without taking time away from the classroom.

We also ensure that teachers remain in control. You choose the material and topics, but can access pre- and post-teaching assistance to make the most impact with every lesson.

## Evidence meets practice

When creating our programmes, we conduct in-depth research into the latest curriculum designs and pedagogical theories. This approach means our support is always grounded in evidence-based principles.

Teachers also help to develop and test our curriculum in the classroom, meaning you can be confident that our programmes are accessible, easy to implement and make a tangible difference to the teacher and pupil experience.



## Driving progress

Ark Curriculum Plus is already having an impact in hundreds of primary schools across the UK.

Our Mathematics Mastery programme offers:

- A meticulously sequenced and interlinked Reception, KS1 and KS2 maths curriculum
- Integrated professional development and planning tools to support teachers' curriculum and pedagogical knowledge
- Fully resourced classroom materials, allowing pupils of all abilities to make explicit, observable progress throughout the primary years



Mathematics  
**Mastery**

The Mathematics Mastery programme is also available for Key Stage 3

Learn more on our [website](#).

## Proven impact

Mathematics Mastery Primary has been shown by the Education Endowment Foundation (EEF) to give Key Stage 1 pupils on average **two month's additional progress** after one year on the programme.



*“On average, pupils in schools adopting Mathematics Mastery made more progress than similar pupils in schools that did not adopt the programme.”*

EEF Report

Teachers in our partner schools repeatedly tell us what a difference our programme is making:

*“Since joining Mathematics Mastery we've seen a significant change in the children's understanding and enjoyment of maths and strengthened subject knowledge and confidence among staff.”*

Claire Pettman | Assistant Headteacher  
St Stephen's Catholic Primary School

*“The programme has been brilliant for teacher confidence because of the training and resources available.”*

Jodie Wallace | Mathematics Lead  
Thornaby Church of England Primary School

Visit our website to hear more about the positive impact Mathematics Mastery has had in other primary schools:  
[www.arkcurriculumplus.org.uk/case-studies](http://www.arkcurriculumplus.org.uk/case-studies)

# Our approach

We are committed to our partnership together, knowing the journey to full-school transformation takes dedication and a consistent approach over time.

## Providing integrated, consistent professional development, helping you improve pupils outcomes

We work with a goal in mind – to help your teachers deliver their best teaching possible. Our style of support responds to your team’s growing confidence and expertise.

Stage 1: Launch

Stage 2: Develop

Stage 3: Sustain



### Launch 1 YEAR

Laying the foundations for impactful implementation

#### PD to lay foundations:

- Whole-school and 1:1 training on subject knowledge and pedagogy
- Dedicated training for your Mastery Lead
- Dedicated support from our team of Development Leads to help determine your areas of focus for greatest impact

### Develop 1-3+ YEARS

Building on your team’s subject and pedagogical understanding to develop their practice

#### PD to hone classroom skill:

- Teacher training covering planning and adaptation of lessons, diagnosing and responding to learning gaps, providing challenge, assessment, and more
- Further training of Mastery Lead, equipping them to provide in-house training
- Annual 360 review ensuring you’re on track in transforming pupil outcomes

### Sustain ONGOING

Making the programme your own

#### On-demand PD:

- Regular webinars and embedded training within resources to refine your teachers’ classroom practice
- Annual summative assessment tracks pupils’ progress and identifies development areas
- Option to add-on personalised support

✓ Classroom resources ✓ Subject knowledge development ✓ Teaching guidance



## Developing deep understanding

The programme is carefully sequenced to enhance pupils' understanding of maths. It is underpinned by the **Dimensions of Depth**, which address conceptual understanding, language & communication and mathematical thinking.

These support mathematical problem solving and enable pupils to make connections between topic areas, draw on representations to support their thinking and be prepared to articulate, justify and explain this thinking.



## Route to recovery

To help support your school's route to recovery after the pandemic, the Mathematics Mastery programme includes:

- **Pre-unit diagnostic assessments** to help you identify if pupils have the necessary pre-requisite knowledge before they start the unit
- **Response signposts** that allow you to close these gaps through booster units, lessons and pre-teach resources
- **End of unit diagnostic assessments** to evaluate what pupils have learnt, with advice on next steps
- **Differentiated tasks** that provide activities for increased support and increased challenge in every lesson



# What do I get when I join the programme?

## Mastery Curriculum

The Mathematics Mastery curriculum is cumulative, building on learning and allowing pupils to make deep connections across topics.

We sequence concepts so that established ideas can be linked to new learning, supporting pupils in developing mastery by understanding the coherent and connected nature of the subject.

## Full suite of resources, accessed online

The MyMastery learning platform offers 'anytime, anywhere' access to the full suite of Mathematics Mastery content. This includes all of the teaching support, assessment materials and lesson resources needed to deliver the programme.



## Integrated Professional Development

Throughout, your team can make use of videos, tutorials and workshops to grow their subject and teaching expertise.

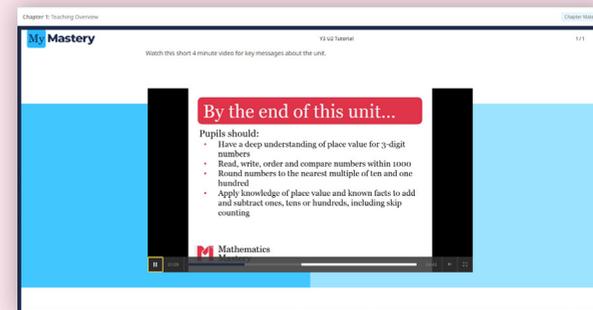
Our Tailored programme offers comprehensive support for schools new to delivering Mathematics Mastery Primary.

You'll receive in-person visits and one-to-one support, personalised training for your senior leaders and teachers, plus instant-access PD delivered online via our MyMastery learning platform.

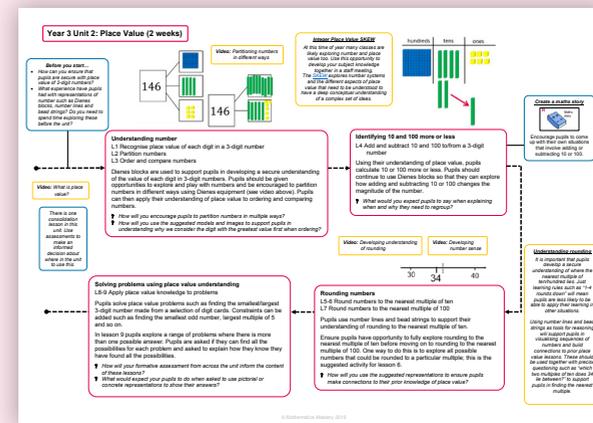
See page 14 for full details on pricing.

## Teaching support

A number of videos support each unit including **unit tutorials** that outline key content, **knowledge recaps** for quick refreshers of subject knowledge and **modelling videos** to exemplify the tasks.

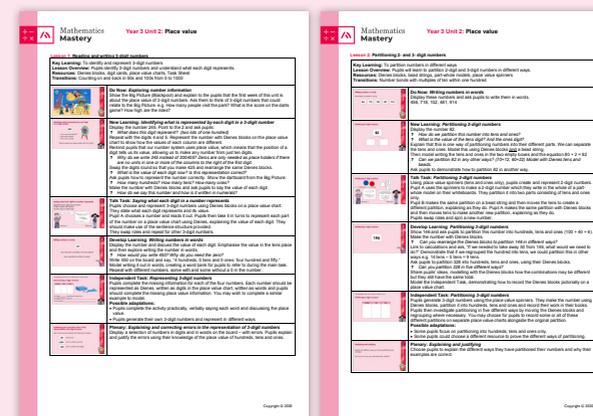


**Unit narratives** provide overviews of the key content and learning covered. These give teachers guidance on the sequence of lessons in the unit, possible adaptations and signposts to professional development videos and research articles.



## Planning guidance

outlines the core structure of each lesson, with details on adapting the materials for learners.





## Lesson resources

Slide decks are provided for each lesson, including notes and guidance to support delivery.

**Saying what each digit in a number represents**

Represent each digit of your chosen 3-digit number with Dienes.  
Say the value of each digit.

Partner A

I have chosen ...

Partner B

There is a \_\_\_\_\_ in the hundreds column.  
It represents \_\_\_\_\_ hundreds.  
It has a value of \_\_\_\_\_.

**Key learning:** To identify and represent 3-digit numbers

place value      digit

numeral      position

hundreds      tens      ones

**Fully editable**

Star Words

Think Task

**Identifying what is represented by each digit in a 3-digit number**

**245**

- How many hundreds?
- How many tens?
- How many ones?

What number has been made with the darts?

New Learning

## Assessment and intervention

The programme integrates formative assessment throughout, enabling teachers to assess depth of understanding and scaffold learning.

**Pre-unit quizzes** support diagnostic assessment of the pre-requisite concepts for each unit. Guidance is provided to support teachers in identifying misconceptions with signposts to address these through maths meetings and consolidation lessons.

Each unit also has a **post-unit quiz** to help evaluate pupil understanding.

Y3 U2 Pre-Unit Q1: To recognise the place value of 2-digit numbers and the number names.

**Which number is represented here?**

A seventeen four      B seventy four

C eleven      D forty seven

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Y3 U2 Pre-Unit Q1: To recognise the place value of 2-digit numbers and the number names.

**Which number is represented here?**

Answer	Misconception	Response Signpost
A.	<b>Incorrect</b> The pupil may have a confusion between the teen numbers and the tens numbers.	<ul style="list-style-type: none"> <li>Pupils need to have a good number sense of numbers to 100 and know the place value of the digits. They should be able to compose and partition 2-digit numbers and be ready to move on to 3-digit numbers.</li> </ul>
B.	<b>Correct</b> The pupil recognises the place value of 3-digits numbers and know the number names.	<ul style="list-style-type: none"> <li>Booster: Year 2 Unit 1 Lessons 2, 3 and 4. These lessons focus on identifying tens and ones in a 2-digit number and partitioning 2-digit numbers.</li> </ul>
C.	<b>Incorrect</b> The pupil may have counted the discrete objects as one each.	<ul style="list-style-type: none"> <li>Booster: Year 2 Unit 1 Lesson 6 Reteach Representing 2-digit numbers which includes writing numbers in words.</li> </ul>
D.	<b>Incorrect</b> The pupil may have reversed the digits.	

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**Maths Meetings** are a vital part of the programme, providing fun opportunities for pupils to consolidate key areas of maths and develop fluency.

**Important concepts for Year 3 Maths Meetings**

The topics below **could** be included each term for both fluency and because some key revealed until a later term and requires ongoing consolidation. Teachers should also consider detailed guidelines in this document for suggested activities and other areas to include.

Throughout Year 3, time, money and angles should be regularly incorporated into all other Unit 1's (fractions), counting up and back in tenths should also feature regularly.

Term	Detail
Autumn	<p><b>Number</b></p> <ul style="list-style-type: none"> <li>Complete mental addition and subtraction for 2-digit numbers (with and without range of calculation strategies)</li> <li>Represent numbers to 1000 with concrete manipulatives and images, including 1000</li> <li>Place value of digits in numbers with up to three digits</li> <li>Define multiplication and division equations using arrays (multiples of 2, 5, 10)</li> <li>Recognises, find and write fractions of lengths, shapes and quantities</li> <li>Choose and discuss different calculation strategies for 3-digit addition and subtraction using number bonds / make tens</li> <li>Define facts from known facts "I know... what else do I know?" (number bonds)</li> <li>Doubles &amp; halves (continue throughout the year)</li> </ul> <p><b>Shape and Space</b></p> <ul style="list-style-type: none"> <li>Name and describe 2-D and 3-D shapes according to their properties</li> <li>Describe position, direction and movement in terms of straight line movements and angles</li> <li>Identify horizontal and vertical lines</li> </ul> <p><b>Measurement</b></p> <ul style="list-style-type: none"> <li>Read scales with intervals of 2, 5, 10 and 100 (comparing to increments of 1)</li> </ul> <p><b>Time</b></p> <ul style="list-style-type: none"> <li>Tell the time to the nearest five minutes</li> </ul> <p><b>Money</b></p> <ul style="list-style-type: none"> <li>Use representations of all coins and notes (ES, £10, £20)</li> </ul>
Spring	<p><b>Number</b></p> <ul style="list-style-type: none"> <li>Recognises that non-integer three digit numbers are equal to one whole</li> <li>Count in halves, thirds and quarters within 10</li> <li>Choose and justify efficient calculation strategies for age-appropriate calculations</li> <li>Devise facts from known facts (multiplication / division and addition / subtraction)</li> <li>Introduce counting in tenths during Unit 3</li> <li>Multiply by 10 and 100 recognising the importance of place value</li> <li>Doubles &amp; halves</li> </ul> <p><b>Shape and Space</b></p> <ul style="list-style-type: none"> <li>Read scales in steps of 2, 3, 4, 5 and 10</li> <li>Draw and measure</li> <li>Identify right angles and that two right angles make a half turn</li> <li>Calculate the perimeters of simple 2-D shapes</li> <li>Tell the time to the nearest minute</li> <li>Tell the time from an analogue clock using Roman numerals 1 to XII</li> </ul>

**Additional concepts and activities for Year 3 Maths Meetings**

Autumn	Detail
Calendar maths	<ul style="list-style-type: none"> <li>Discuss using vocabulary: century, calendar and leap year</li> <li>Days of the week               <ul style="list-style-type: none"> <li>Today is, yesterday was, tomorrow will be</li> <li>Days of the Week song (Adams family tune) <a href="http://www.youtube.com/watch?v=4q2Z2W5yY">http://www.youtube.com/watch?v=4q2Z2W5yY</a></li> </ul> </li> <li>Months of the year               <ul style="list-style-type: none"> <li>This month is, last month was, next month will be</li> <li>Months of the Year song (found on YouTube) <a href="http://www.youtube.com/watch?v=VnWVW3m">http://www.youtube.com/watch?v=VnWVW3m</a></li> </ul> </li> <li>Time, date and year               <ul style="list-style-type: none"> <li>Ordering the months of the year</li> </ul> </li> <li>Weather               <ul style="list-style-type: none"> <li>Collect and compile weather data using a bar chart</li> <li>Measure and read the temperature in degrees Celsius</li> <li>Record the daily temperature using a bar chart</li> </ul> </li> </ul>
Number	<ul style="list-style-type: none"> <li>Multiplication tables of 2, 3, 4, 5, 6 and 10 and related division facts</li> <li>Patterns of numbers within 100               <ul style="list-style-type: none"> <li>Pass the teddy counting game – the teddy is passed around the class with each child saying 2, 3, 6 or 10 more or less than the previous number</li> <li>Use a hundred square to show patterns within 100</li> <li>100 square puzzle – show one part of the hundred square with only 2 or 3 numbers showing. Fill in the remaining numbers</li> </ul> </li> <li>Say cardinal numbers' names in order within 10 000</li> <li>Estimate a set of objects within 100               <ul style="list-style-type: none"> <li>Use jars of marbles, pencils, counters, etc. for estimation</li> <li>Fractional estimation – show a picture of 100 objects, estimate and then count in groups of 3, 4, etc.</li> </ul> </li> <li>Order numbers within 1000 on a number line (vertical and horizontal)</li> <li>Compare numbers within 1000 using &lt; and &gt; signs</li> <li>Place value of digits in numbers within 1000               <ul style="list-style-type: none"> <li>Number of the day or week – count on and back in tens to and from the number; how many tens and ones?; reverse the digits – what is the number now?</li> <li>Guess my number: it is odd, it has 6 in the thousands column, zero hundreds, it has a digit total of 8, etc.</li> </ul> </li> </ul>
Data handling	<ul style="list-style-type: none"> <li>Bar model representations for addition and subtraction</li> <li>Bar model representations for multiplication and division</li> </ul>



Our **Ready to Progress Interventions** programme includes over 140 pupil-facing videos and an activity bank. Ideal for use by TAs to target specific areas of the curriculum where additional support may be needed.

Five groups of ten

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“*The programme makes a huge difference to my lessons and the pupils’ learning, particularly in the pace, language and level of questioning displayed by the children.*”

**Kirsty Williams | Year 1 class teacher  
Ark Dickens Primary Academy**

## Limited subsidised places available

Thanks to funding from the Education Endowment Foundation, we’re excited to offer our Mathematics Mastery Primary Key Stage 1 Tailored programme for £1110\* – 80% off the usual price.

Our partnerships team will be happy to talk you through the programme.

To book a demo, or sign up for a free trial, contact us on:

**E: [partnerships@arkcurriculumplus.org.uk](mailto:partnerships@arkcurriculumplus.org.uk)**

**T: 020 3116 6363**

Or book a call online at

**[www.arkcurriculumplus.org.uk/book-a-demo](http://www.arkcurriculumplus.org.uk/book-a-demo)**

## Pricing

We are a non-profit organisation. The schools that we work with are charged a financial contribution which goes towards delivering and developing the programmes.

**<https://www.arkcurriculumplus.org.uk/join-us>**

\*This subsidised price is only available to state-funded schools in England who sign up for two years. Places are limited.



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