

Mathematics guidance: Key stage 1 and 2

Non-statutory guidance for the national curriculum in England

Summary of support for your math curriculum

Sessions:

12th October 2020

1. How to find RTP criteria, docs, ppts and videos
(Ready To Progress)
2. Core Ideas within

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National Centre
for Excellence in the
Teaching of Mathematics

 **MathsHUBS**
Matrix Herts

Non-statutory Mathematics guidance for the national curriculum in England

Session:

How to find RTP criteria, docs, ppts and videos

(Ready To Progress)



National Centre
for Excellence in the
Teaching of Mathematics



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Primary National Curriculum- guidance for teaching mathematics – The DfE Guidance materials

← → ↻ 🏠 <https://www.gov.uk/government/publications/teaching-mathematics-in-primary-schools> 📖 ☆

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➔ **Coronavirus (COVID-19)** | Guidance and support

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Guidance

Teaching mathematics in primary schools

Guidance for teaching mathematics at key stages 1 and 2 to help pupils progress through the national curriculum.

Published 6 July 2020
From: [Department for Education](#)

 Department for Education

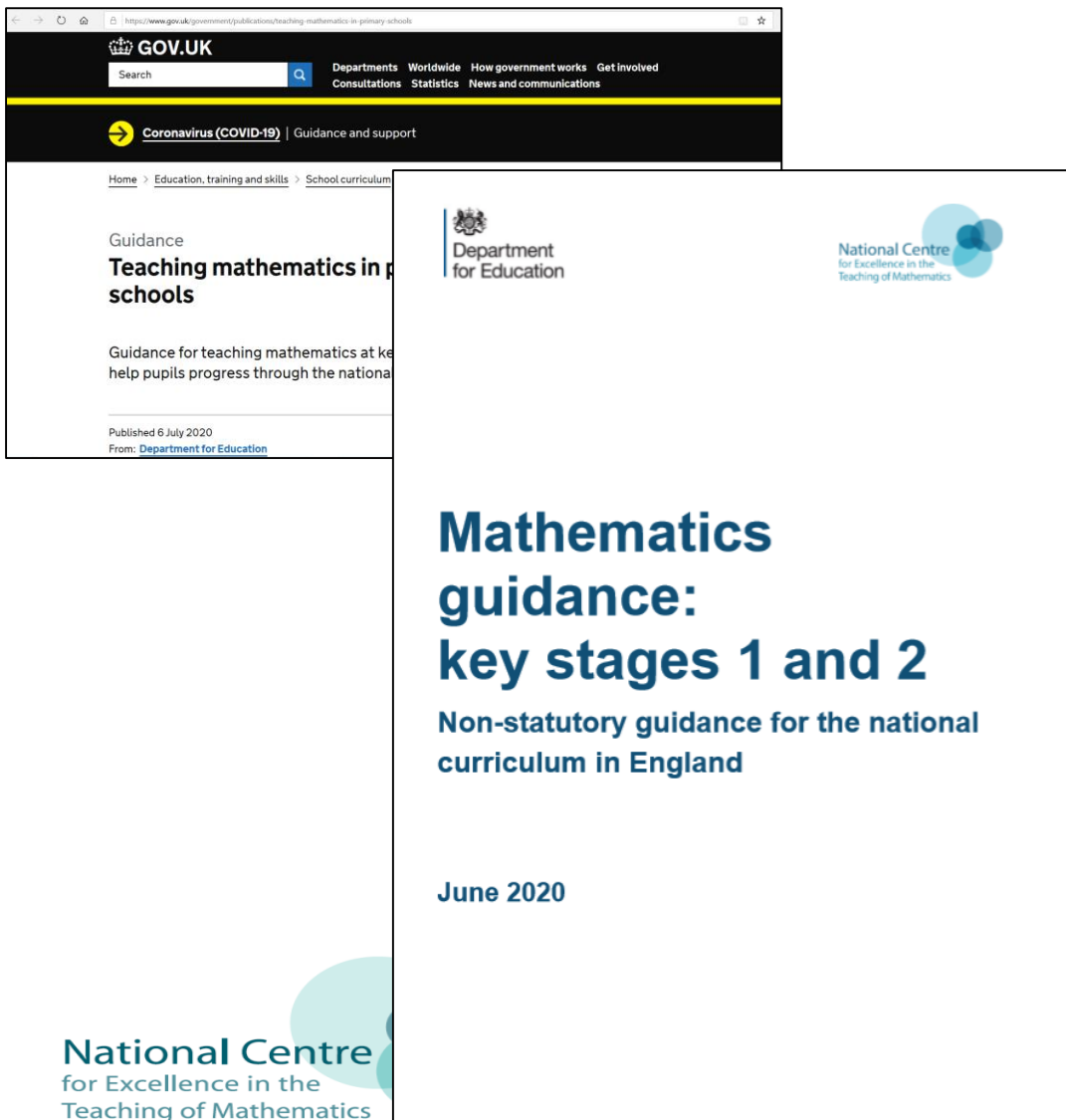
 National Centre for Excellence in the Teaching of Mathematics

Mathematics guidance: key stages 1 and 2

Non-statutory guidance for the national curriculum in England

June 2020

Getting started



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Guidance
Teaching mathematics in primary schools

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June 2020

National Centre for Excellence in the Teaching of Mathematics

1. Read the relevant section in the year group chapter for your new set of planning for your year group

<https://www.youtube.com/playlist?list=PL6gGtLyXoeq-FMWk00AlcIPo3fhGmi03D>

2. Watch three videos: Link above

- The introduction (3 mins)
- and the summary video for your current yr group and the yr grp before (about 15 min each)

NCETM support materials: Where to find?

Home page on NCETM new website



[News & Features](#) [Professional Development](#) [In the Classroom](#) [Teaching for Mastery](#) [Maths Hubs](#) [Q](#)

WORKING COLLABORATIVELY TO ENHANCE MATHS TEACHING

Raising levels of achievement in maths, and increasing appreciation of the power and wonder of maths

Coronavirus (Covid-19) and the new school year

We have a range of materials and guidance to help primary and secondary schools adapt maths teaching, when necessary, to address the ongoing impact of the outbreak.

[Find out more](#)



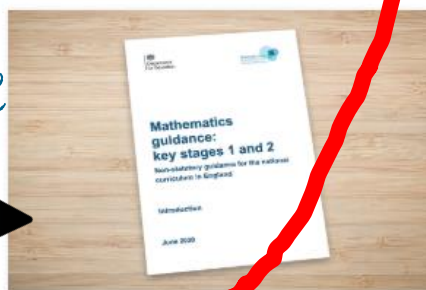
SUPPORT FOR SCHOOLS ADDRESSING ONGOING CORONAVIRUS IMPACT

Materials and guidance to help primary and secondary schools adapt maths teaching, when necessary, to address the ongoing impact of the outbreak

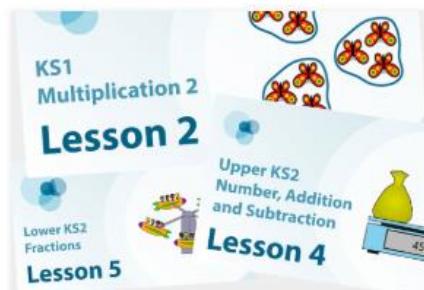


For the new school year, this section provides a range of lesson-planning and professional development resources for primary and secondary teachers. This includes support materials to help teachers use the [DfE National Curriculum guidance](#) for teaching maths in primary schools, published in July 2020.

Click on 2020
DfE Guidance



Support with 2020 DfE guidance
Resources for primary and secondary teachers using the primary guidance



Primary video lessons
Developed for the school closure period, these videos will also be useful for Covid recovery



Support for secondary teachers
Teaching and curriculum guidance for secondary teachers as schools fully re-open

Supporting your staff/colleagues

which year group you consider it is from.
• See if you are correct.
• Before the next slide is shown, predict if the criterion will be from a higher or lower year group.



Which year group?

Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.

Will the next slide show a criterion from a higher or lower year group?
(Predict higher or lower now!)



Which year group?

Count within 100, forwards and backwards, starting with any number.

It was lower!

Will the next slide show a criterion from a higher or lower year group?
(Predict higher or lower now!)



Which year group?

Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.

It was higher!

Will the next slide show a criterion from a higher or lower year group?
(Predict higher or lower now!)



DfE Primary National Curriculum Guidance 2020
Training Materials

Introduction to the DfE Primary National Curriculum Guidance



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IN THE TEACHING OF MATHEMATICS

Click to add notes

A short introduction video from Debbie Morgan

A ppt from NCETM to support your staff with the materials

Ready-to-progress criteria: year 1 to year 6

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NPV	1NPV-1 Count within 100, forwards and backwards, starting with any number.		3NPV-1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.	4NPV-1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	5NPV-1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.	6NPV-1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).
					→	6NPV-2 Recognise the place value of each digit in numbers up to 10 ⁷ , including decimal fractions, and compose numbers from them using non-rounding.
						about any million, mal the linear system, and numbers, as appropriate, including in contexts.
NPV			of 100 with 2, 4, 5 and 10 equal parts.	scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.	e and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.	6NPV-4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.
			→	→	→	
					5NPV-5 Convert between units of measure, including using common decimals and fractions.	



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Year Group chapters

Year 3 guidance

Ready-to-progress criteria

Year 2 conceptual prerequisite	Year 3 ready-to-progress criteria	Future applications
Know that 10 ones are equivalent to 1 ten, and that 40 (for example) can be composed from 40 ones or 4 tens. Know how many tens are in 100.	3NPV-1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10.	Solve multiplication problems that involve a scaling structure, such as 'ten times as long'.
Count in tens from a given number, including across 100.	3NPV-4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	Read scales on graphs and measuring instruments.

To support staff, there is a lesson ppt for each of the 79 RTP criteria for yr 1 to Year 6

The reasoning here can be described as grouping or repeated addition – pupils group or add 10 tens to make 100, then add another group of 8 tens.

Pupils need to be able to apply this reasoning to measures contexts, as shown in the [3NPV-1](#) below. It is important for pupils to understand that there are tens within this new unit of 100, in different contexts.

Pupils should be able to explain that numbers such as 180 and 300 are multiples of 10, because they are each equal to a whole number of tens. They should be able to identify multiples of 10 based on the fact that they have a zero in the ones place.

As well as understanding 100 and other three-digit multiples of 10 in terms of grouping

3NPV-1 Example assessment questions

1. How many 10cm lengths can a 310cm length of ribbon be cut into?
2. The school office sells 52 poppies for 10p each. How much money have they collected altogether?
3. I take 10ml of medicine every day. How many days will a 250ml bottle last?
4. Marek is 2 years old, and has a mass of 10kg. His father's mass is 10 times as much. What is the mass of Marek's father?

They save up £100. This is 10 times as much money as her brother has. How much does her brother have?

Write down the numbers that are multiples of 10. Explain your answer.

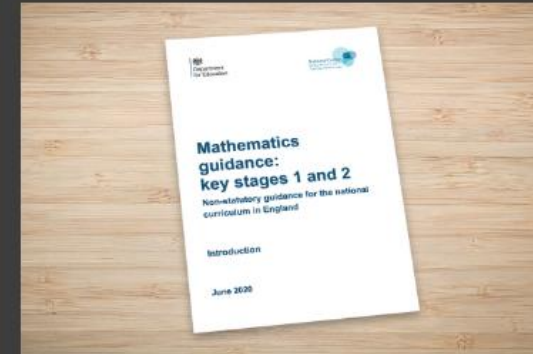
300 105 510 330 409 100 864

This is related to pupils understanding of multiplication and the grouping structure of 100 (2MD-1). Pupils should, for example, be able to represent 180 as 18 tens using the multiplication equations $180 = 18 \times 10$ or $180 = 10 \times 18$, and be able to write the corresponding division equations $180 \div 10 = 18$. In [3MD-1](#) they will learn that $180 \div 10 = 18$ can represent the structure of 180 divided into groups of 10 (quotitive division), as here, and that it can also represent 180 shared into 10 equal shares of 18 each (partitive division).

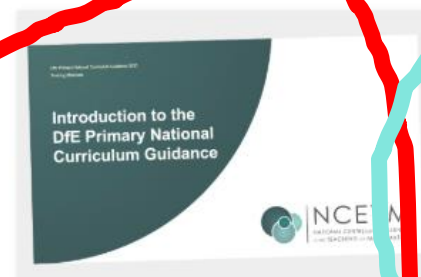
[Home](#) > [Support for schools addressing ongoing coronavirus impact](#) > [Support with 2020 DfE guidance](#)

SUPPORT WITH 2020 DFE GUIDANCE

Resources for primary and secondary teachers in interpreting and using the primary guidance



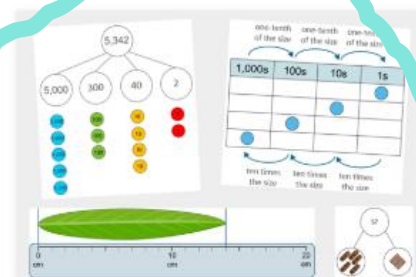
We have produced a range of materials and resources to support both primary and secondary teachers using the new DfE Mathematics guidance.



Introduction to the DfE Primary National Curriculum Guidance

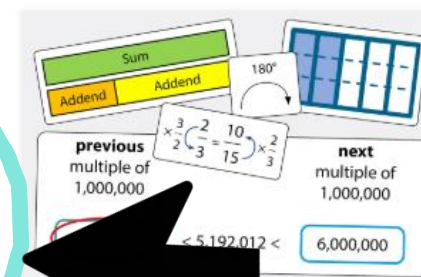
Training materials for DfE Mathematics guidance

A ready-to-use PowerPoint designed for whole school development and ideal for a Friday afternoon session



Exemplification of ready-to-progress criteria

7 PowerPoints, each one focusing on one of the ready-to-progress criteria in the new DfE mathematics guidance for KS1 and KS2



Shaping the Year 7 curriculum: building on Year 6

Ready-to-use training materials, ideal for use in planning effective curriculum transition from primary

Here is introduction video and ppt to use with your staff to introduce the materials



Here are the 79 lesson ppts for each ready to progress criteria



Exemplification of RTP criteria

The 79 lesson ppt and notes
for each RTP criteria.

Organised by

topic/strand

or year group

By topic



Number and place
value (Complete)



Number facts
(Complete)



Addition and
subtraction (Complete)



Multiplication and
division (Complete)



Fractions (Complete)



Geometry (Complete)

By year



Year 1



Year 2



Year 3



Year 4



Year 5



Year 6

1NF-2

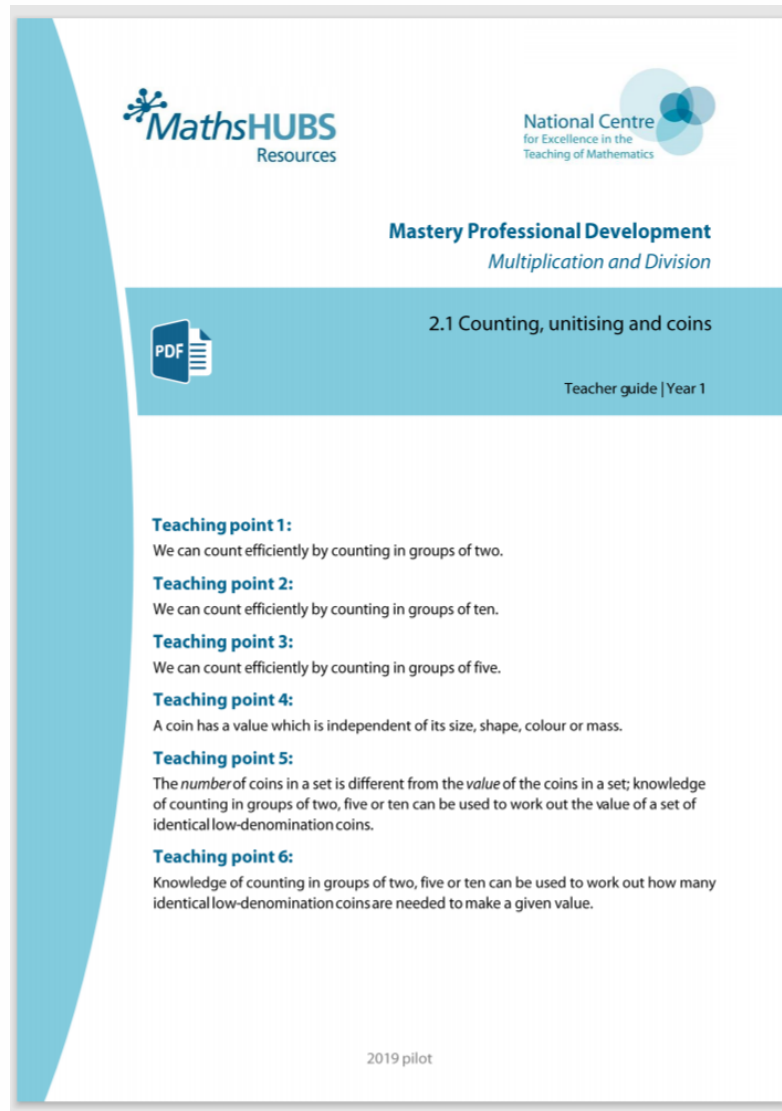
Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.

The materials in this pack have been collated and written to support the teaching of 1NF-2. Before planning and teaching the content in 1NF-2, read the teaching guidance and example assessment questions in the non-statutory guidance itself, which can be found [here](#).

A video summarising all of the ready-to-progress criteria for Year 1 can be found [here](#).

Each Powerpoint has a direct link to the Guidance document and the accompanying video on the Dfe site

1NF-2: Linked mastery PD materials



- Additional pedagogical subject knowledge support can be found in the Mastery Professional Development Materials:
- [2.1 Counting, unitising and coins](#)
- Several of the activity slides have been taken from these materials.

It also has links to the relevant section of the NCETMs PD materials that many of you will be familiar with.

KEY STAGE 1 NUMBER, ADDITION AND SUBTRACTION VIDEO LESSONS

Video lessons on number, addition and subtraction for children in Years 1 and 2

These short videos were originally produced to provide primary school pupils with interactive lessons while they were learning at home. Parents or teachers can now use them in school or at home, but it is important that, within each batch, they are set in the suggested order. Most lessons are between 15 to 20 minutes long, each ending with suggested follow-up tasks.

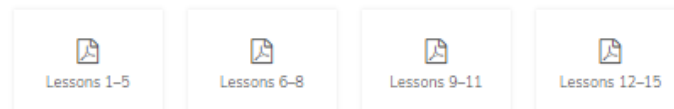
The associated teacher guides below the videos accompany the lessons, and give details of the features of teaching for mastery found in each batch.

PowerPoints of the lessons are also available below the teacher guides. These include the same content as the video lessons, but allow teachers the flexibility to adapt and deliver the lessons themselves as part of their own teaching sequence.

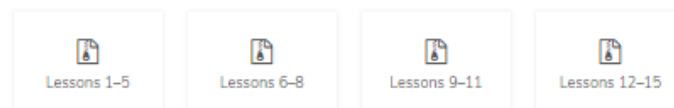
The video below is the first in a playlist. To see the full list of lessons, click on the three horizontal bars in the top right hand corner.



Teacher guides



Lesson PowerPoints



Phase

PRIMARY KS1 YEAR 1 YEAR 2

Related Pages

Primary video lessons
Support for schools addressing ongoing coronavirus impact
Primary Mastery Professional Development

video

ion for

YEAR 2

e 2 -
o

or children

YEAR 4

e 2 -
on

...

Plus, if there are any video lessons linked to the RTP criteria, these are also linked to the document.

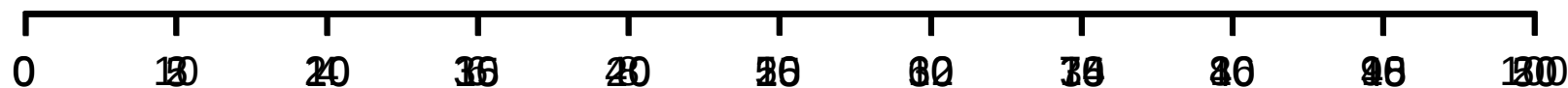
NB: the powerpoint slides from these video lessons are now also available for teachers to use within their own lessons.

XX

1NF-2 Count forwards and backwards in multiples of 2, 5 and 10

After this introduction, there are a series of animated slides to review, practice and consolidate learning ensuring that they have mastered this criteria and are therefore ready to progress.

Counting in 10s



- What numbers can you see on the number line?
- Let's count along the number line in multiples of...
- Can you start in different places?
- What's the next multiple of... after...? What's the multiple of... before...?
- Can you count backwards as well as forwards?

You can see that the questioning that should scaffold the learning is included on the slides, making them suitable for support staff to also use with individuals and small groups that need additional support to master them.

1NF-2 Count forwards and backwards in multiples of 2, 5 and 10

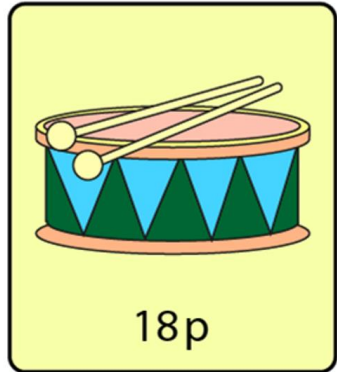
- How many fingers on each hand?
- We can use them to count in fives!
- Let's count how many fingers there are altogether by counting in fives.
- Can you say how many fingers if I show you...
3 hands, 5 hands, 4 hands?
- Can you find some of your own objects to group and count in fives?

Each hand shows a set of five, so we will count in fives.

Five, ten, fifteen...

1 group of five, 2 groups of five, 3 groups of five...

1NF-2 Count forwards and backwards in multiples of 2, 5 and 10



- What sort of coins can you see in the purse? Can you find some of the same coins to use yourself?
- How much does the drum cost?
- Let's see how many 2 pence coins we need to buy the drum.
- If we count in twos, what number do we need to stop at? Why?
- So how many 2 pence coins do we need?
- Can you make your own 2p shop?



2p, 4p, 6p... 18p. There is 18 pence altogether.

Follow-up NRICH activity

- **Biscuit Decorations**
- <https://nrich.maths.org/154>



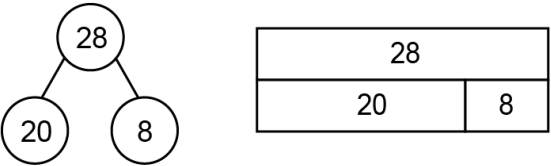
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Appendix: Calculation and Fluency

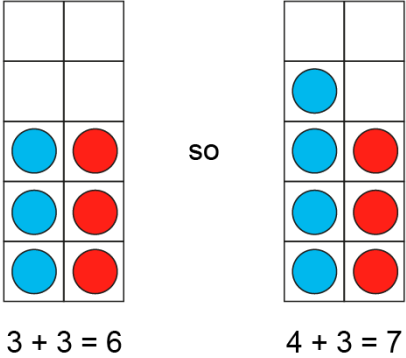
Factual fluency progression

												Year 1		Year 2		Year 3		Year 4		Year 5															
Addition						Addition and subtraction across						Secure and maintain fluency in addition and subtraction within and across 10, through continued practice.																							
+	0	1	2	3	4	5	6	7	8	9	10																								
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10																								
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	1+10																								
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8	2+9	2+10																								
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7	3+8	3+9	3+10																								
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6	4+7	4+8	4+9	4+10																								
5	5+0	5+1	5+2	5+3	5+4	5+5	5+6	5+7	5+8	5+9	5+10																								
6	6+0	6+1	6+2	6+3	6+4	6+5	6+6	6+7	6+8	6+9	6+10																								
7	7+0	7+1	7+2	7+3	7+4	7+5	7+6	7+7	7+8	7+9	7+10																								
8	8+0	8+1	8+2	8+3	8+4	8+5	8+6	8+7	8+8	8+9	8+10																								
9	9+0	9+1	9+2	9+3	9+4	9+5	9+6	9+7	9+8	9+9	9+10																								
10	10+0	10+1	10+2	10+3	10+4	10+5	10+6	10+7	10+8	10+9	10+10																								
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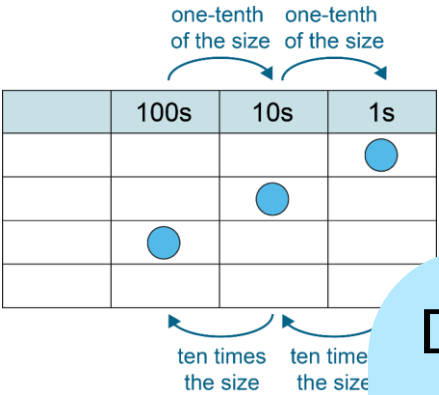
Core Representations



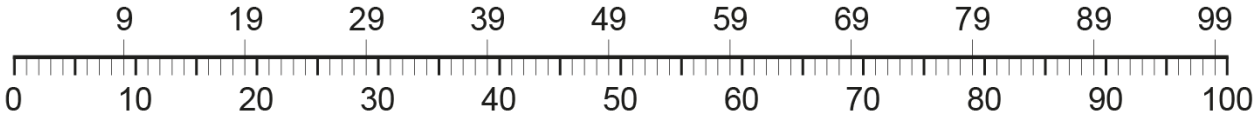
Partitioning diagrams to reveal the composition of numbers



10 frames to see additive relationships



Place Value chart
multiplicative

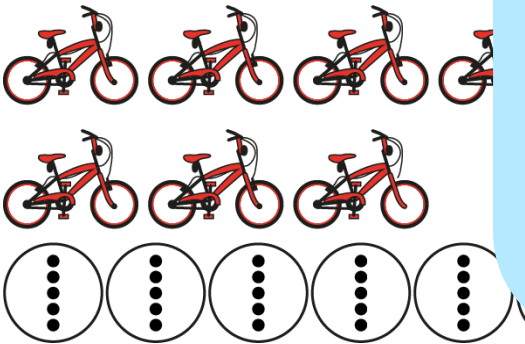


7,000	8,000	9,000
700	800	900
70	80	90
7	8	9

Understanding of
of the number

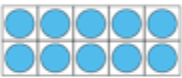
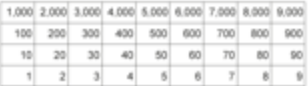
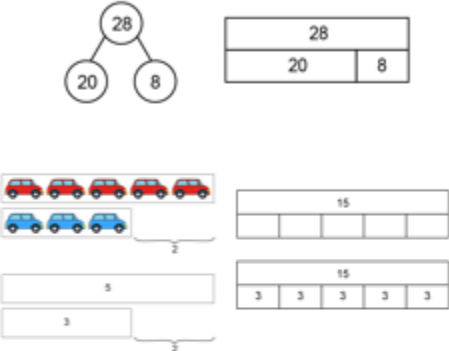
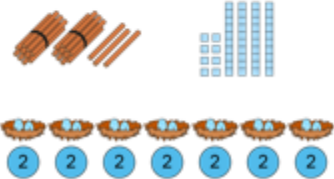
Do you have a set of core representations that are used consistently through your school?

Are teachers confident in their intended purpose?



Unitising images

Core representations used in the guidance

Representation		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Tens frame	1NPV-1 1AS-1 1NF-1	2AS-1 2AS-3	3NPV-1 3NF-1 3NF-3	4NPV-1 4NF-3	5NPV-1 5NF-2 5MD-1	6NPV-1
	Number line	1NPV-1 1NPV-2 1NF-2	2NPV-2 2AS-2	3NPV-3 3F-3 3F-4	4NPV-3 4F-1 4F-2 4F-3	5NPV-3 5F-2 5F-3	6NPV-3 6F-1
	<u>Gattegno chart</u>	1NPV-1 1NF-2			4MD-1	5NPV-2 5MD-1	6NPV-1
	Partitioning diagrams including bar models	1AS-1 1AS-2 1NF-1	2NPV-1 2AS-1 2AS-3 2AS-4	3NPV-2 3NPV4 3AS-1 3AS-2 3AS-3 3F-2 3F-4	4NPV-2 4NPV-4 4MD-2 4F-3	5NPV-2 5NPV-4 5F-1	6NPV-4 6AS/MD-4 6F-3
	Groups of units in addition to ones such as Dienes, PV counters		2NPV-1 2AS-3 2AS-4 2MD-1 2MD-2	3AS-2 3MD-1	4MD-2 4F-2	5 NPV-1 5MD-3 5MD-4	6NPV-2

Mathematics guidance: Key stage 1 and 2

Non-statutory guidance for the national curriculum in England

Summary of support for your math curriculum

Sessions:

12th October 2020

1. How to find RTP criteria, docs, ppts and videos
(Ready To Progress)
2. Core Ideas within

Zoe.akers@matrixmathshub.co.uk



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for Excellence in the
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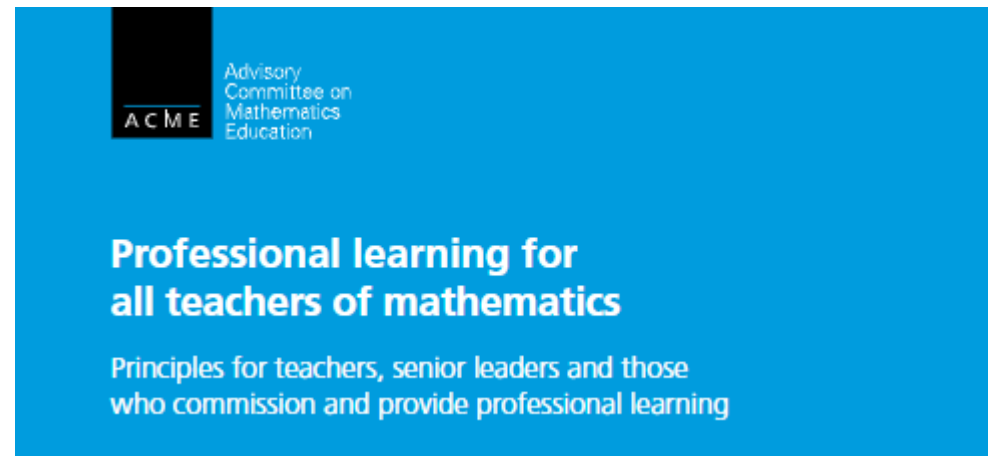
Non-statutory Mathematics guidance for the national curriculum in England

Session: Core Ideas within

What mathematics-specific knowledge is needed to become a highly-effective teacher of mathematics?

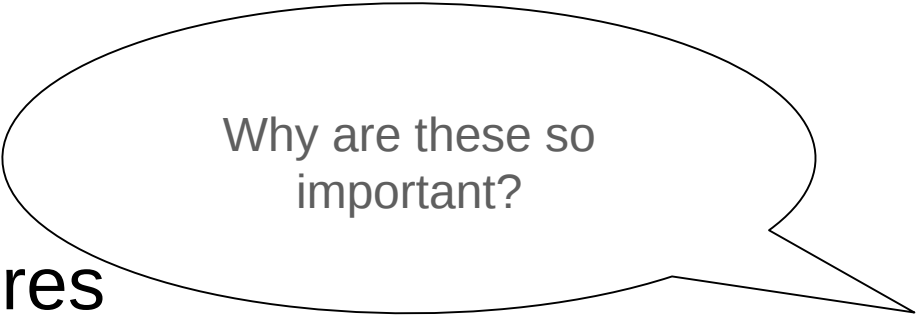
Knowledge includes:

- Knowledge about the mathematics
- Knowledge about teaching mathematics



Professional learning for all teachers of mathematics, ACME (2016)

Five main core ideas



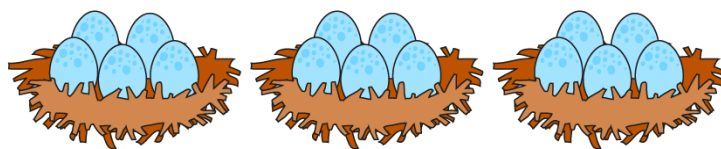
Why are these so important?

1. Unitising
2. Fluency of known facts and procedures alongside conceptual understanding
3. Four foci within place value
4. Additive and multiplicative relationships (not four separate operations)
5. Not overload of concepts in any one year group
 - year 4 and year 5 no RTP for addition and subtraction
 - year 6 - addition, subtraction, multiplication and division grouped together
 - year 5 - decimals within place value - to deepen understanding of the structure of the number system; year 6 focussing on larger numbers

What is the additive relationship that can be applied to this situation?

Unitising

Why show the 'five' counters?



5

5

5

$$5 + 5 + 5$$

$$3 \times 5$$

Put these in a progressive order that a child might use to find the total number of eggs:

Seeing the eggs and counting all the eggs one by one.
Seeing the eggs in equal groups of five and use the known fact of three fives are fifteen.
Seeing the eggs in equal groups of five but still count all the eggs one by one.
Seeing the eggs in equal groups of five but still count all the eggs one by one.
Seeing the eggs in equal groups of five and counting up in fives.
Seeing the eggs and counting all the eggs one by one.
Seeing the eggs in three equal groups of five and use the known fact of three fives are fifteen.
Seeing the eggs in equal groups of five and counting up in fives.

Units are not just about standard units of mass, length, time money and other measures.

In which year groups is ‘unitising’ mentioned in the guidance?

Click the shoes icon for each year group to see a related extract from the materials



Year 1

Being able to 'unitise' is fundamental in handling money and in understanding place value. It forms a thread of understanding throughout further development of multiplication and division concepts. It allows children to move from additive to multiplicative thinking.

This article demonstrates how the concept of unitising can be coherently sequenced through a primary maths curriculum. It exemplifies how new knowledge is built on solid prior understanding from Year 1 to Year 6. We use examples from the [Primary Mastery Professional Development Materials](#), to help you get a feel for the materials and see how they might help your school. In the materials themselves, each teaching idea is presented with associated professional development prompts, to help strengthen teachers' subject and pedagogical knowledge.



Year 5

In Year 5, the concept of unitising is again drawn upon when children begin to multiply decimals. Their deep understanding of times tables is also used.

Year 6

In Year 6, division by 2-digit numbers is introduced, retaining a strong emphasis on understanding the structure of the mathematics so children can see why an algorithm works.

You may also like to look at the [overview of Spine 2](#), from Years 1-6, to understand where unitising fits with other concepts of multiplication and division.

Subitising??

Unitising

ARTICLE

WHAT IS UNITISING, AND WHY IS IT IMPORTANT?

This article follows the concept of unitising through Years 1-6, also demonstrating effective curriculum sequencing



Click on the shoes to access an article on unitising

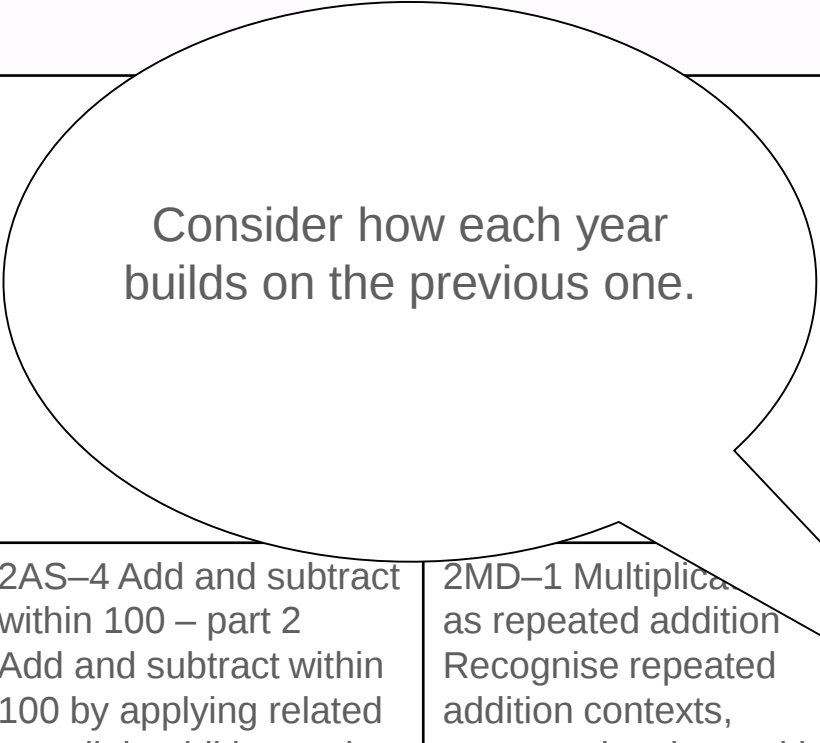
2. Calculation and fluency

NF	<u>1NF-1</u> Develop fluency in addition and subtraction facts within 10. →	<u>2NF-1</u> Secure fluency in addition and subtraction facts within 10, through continued practice. →	<u>3NF-1</u> Secure fluency in addition and subtraction facts that bridge 10, through continued practice.			
	<u>1NF-2</u> Count forwards and backwards in multiples of 2, 5 and 10, up to 100.		<u>3NF-2</u> Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. →	<u>4NF-1</u> Recall multiplication and division facts up to 12×12 , and recognise products in multiplication tables as multiples of the corresponding number. →	<u>5NF-1</u> Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	
				<u>4NF-2</u> Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.		
			<u>3NF-3</u> Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10). →	<u>4NF-3</u> Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100). →	<u>5NF-2</u> Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).	

In addition to the number fluency ready-to-progress criteria, at the end of each year group chapter, there is a focus on calculation and fluency



Calculation and fluency

Year 1	Develop fluency in addition and subtraction facts within 10. The main addition and subtraction calculation focus in year 1 is developing fluency in additive facts within 10, as outlined in the 1NF–1 Teaching guidance	Pupils should also be expected to solve contextual addition and subtraction calculations with the 4 structures described in 1AS–2 (aggregation, partitioning, augmentation and reduction), for calculation within 10.	 Consider how each year builds on the previous one.		
Year 2	2AS–1 Add and subtract across 10 Add and subtract across 10, for example: $8 + 5 = 13$ $13 - 5 = 8$	2AS–3 Add and subtract within 100 – part 1 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number	2AS–4 Add and subtract within 100 – part 2 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers	2MD–1 Multiplication as repeated addition Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.	2MD–2 Grouping problems: missing factors and division Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division).



Year 3	Number, place value and number facts: 3NPV–2 and 3NF–3 3NPV–2: Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning. 3NF–3: Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10)	3NF–1 Fluently add and subtract within and across 100. Secure fluency in addition and subtraction facts through continuous practice.	3AS–2 Columnar addition and subtraction. Pupils should be able to add and subtract numbers using columnar methods.	3NF–2 Recall of multiplication tables Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.
Year 4	Number, place value and number facts: 4NPV–2 and 4NF–3 4NPV–2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning. 4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)	Addition and subtraction: extending 3AS–1. Pupils should be able to add and subtract multi-digit numbers.	4AS–2 Columnar addition and subtraction. Pupils should be able to add and subtract numbers using columnar methods.	4MD–2 Manipulating the multiplicative relationship. Pupils should be able to manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.

What is the focus in year 3?
How does this change in year 4?

Year 3 continues to deepen understanding of the additive relationship.
Year 4 – no RtP for AS in this year group- shift of importance to the multiplicative relationship

Year 5	Number, place value and number facts: 5NPV–2 and 5NF–2 5NPV–2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning. 5NF–2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth)	Addition and subtraction: extending 3AS–3 Pupils should also extend columnar addition and subtraction methods to numbers with up to 2 decimal places	5NF–1 Secure fluency in multiplication and division facts Secure multiplication and division facts	5MD–2 Multiply using a formal written method Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.
Year 6	Number, place value and number facts: 6NPV–1 and 6NPV–2 6NPV–1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000). 6NPV–2 Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.	Addition and subtraction: formal written methods Pupils should continue to practise adding whole numbers with up to 4 digits, and numbers with up to 2 decimal places, using columnar addition. This should include calculations with more than 2 addends, and calculations with addends that have different numbers of digits.	5NF–1 Secure fluency in multiplication and division facts Secure multiplication and division facts	5MD–2 Multiply using a formal written method Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.

Look at year 5 compared to year 6. Consider decimals and larger numbers.

Year 5 focuses on numbers up to 2 decimal places. Year 6 builds upon this and extends to larger numbers.

In year groups...you may wish to..

Read the relevant section of the year-group chapter that focuses on calculation and fluency.

Year 1 – page 46 to 47

Year 2 – page 78 to 81

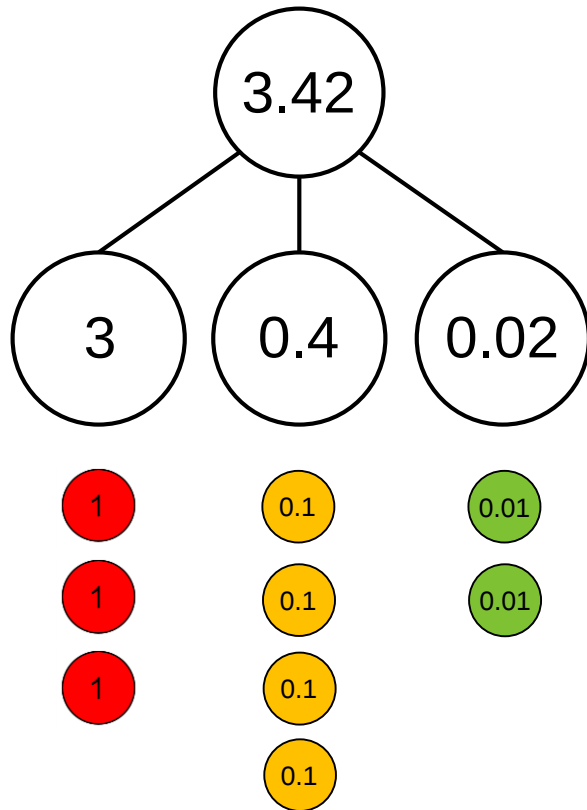
Year 3 – page 139 to 142

Year 4 – page 204 to 207

Year 5 – page 274 to 277

Year 6 – page 327 to 331

5NPV-2 Place value in decimal fractions

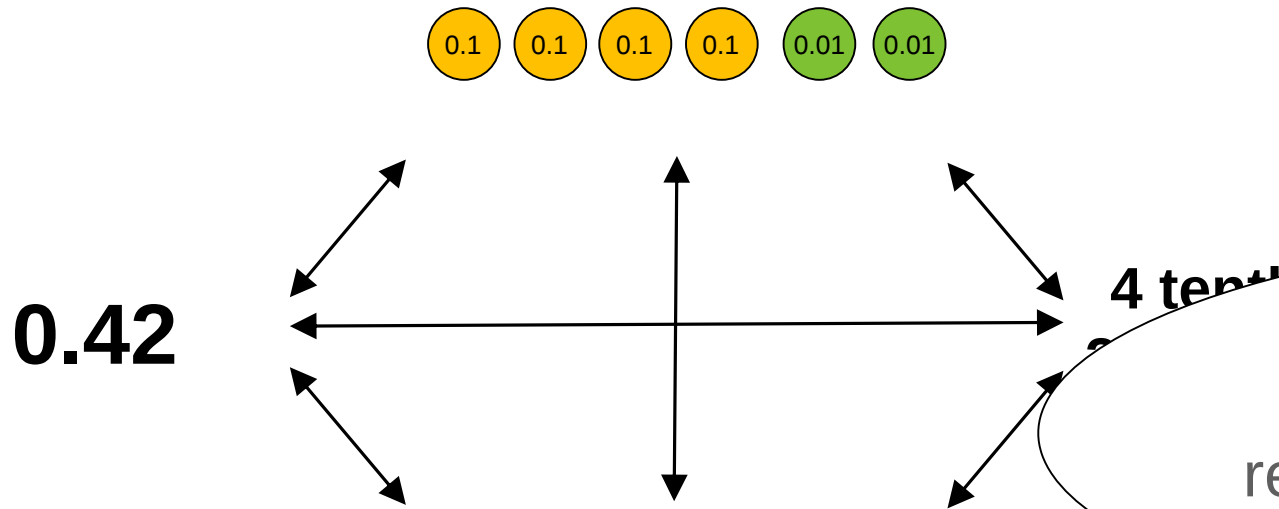


- Represent this number using place value counters and a part-part-whole model.
- What digit is in the tenths place? What is the value of the hundredths digit?
- What does

Teachers tend to do this well!

- Rep
10 that have
- Show children representations of numbers either using part-part-whole or place value counters and ask them to write the value of each number represented.

5NPV-2 Place value in decimal fractions



1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

- What number has been represented using place value counters?

- How do the place value counters and locations of the

Do teachers always link all of these representations as much as they could?

number?

- Repeat with other combinations of counters.

5NPV-2 Place value in decimal fractions

0.18

0.2

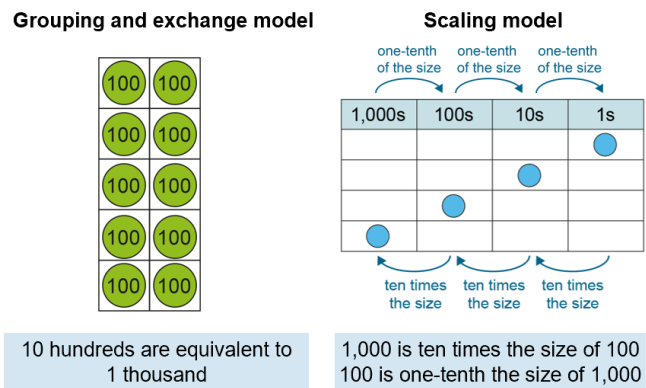
- Skip count in one-hundredths.
- Identify the number of hundredths in each number.

Do teachers understand unitising and make this link?

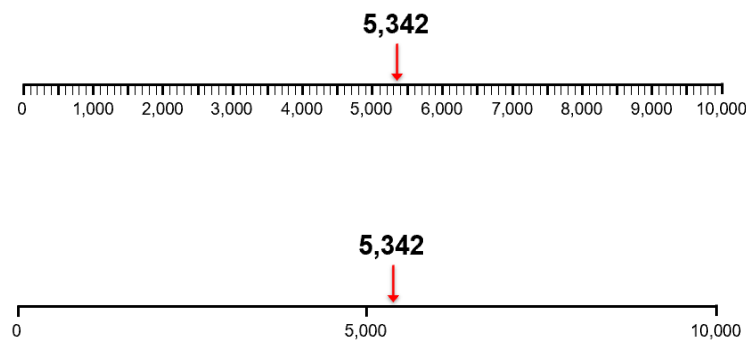
Unitising – children need to be confident expressing numbers in different units - know that two tenths is equivalent to twenty hundredths.

3. Four foci within place value be?

NPV1:



NPV3:



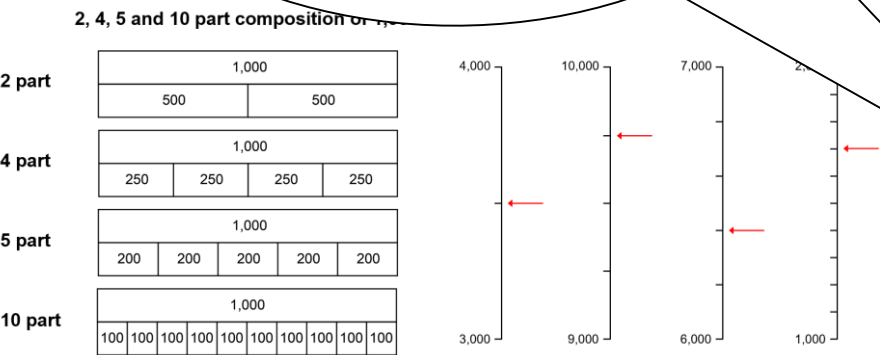
NPV criteria what would they

NPV2:

Consider and summarise each of these aspects. Then click for the titles to appear.

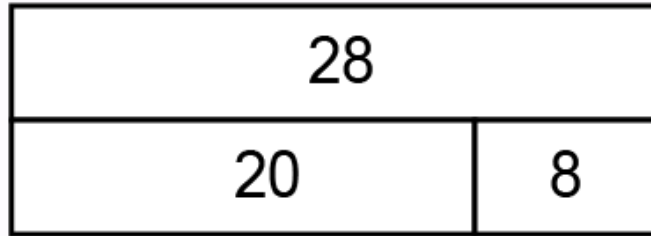
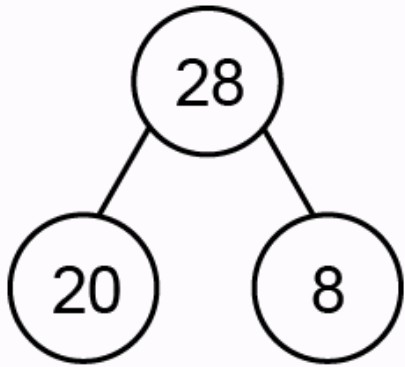
Look at where you teach number and place value in your medium term plans. Do you cover all these areas in enough depth?

NPV4:



4. Additive relationships

Write the addition and subtraction equations that these diagrams could represent.



Partitioning 28 into 20 and 8

$$20 + 8 = 28 \quad 28 - 20 = 8$$

$$8 + 20 = 28 \quad 28 - 8 = 20$$

$$28 = 20 + 8 \quad 8 = 28 - 20$$

$$28 = 8 + 20 \quad 20 = 28 - 8$$

The use of representations to focus on relationships

Additive relationships

Multiplicative relationships

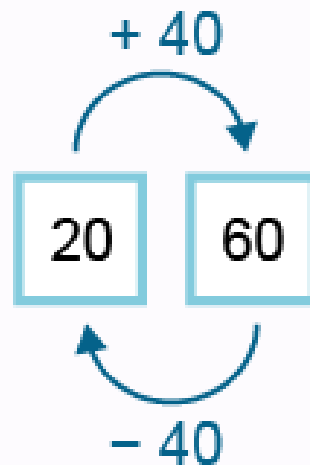
Not four separate operations

What is the relationship
between these numbers?

20

60

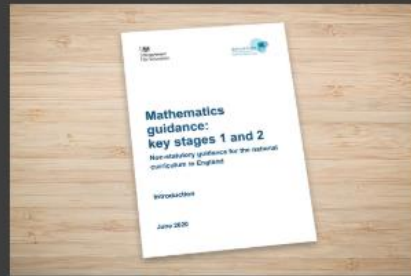
**Additive relationship
between 20 and 60**



Getting started with the guidance

2020 DFE MATHEMATICS GUIDANCE

Support for primary and secondary teachers in interpreting and using the primary guidance



- Watch all the videos!
- Review your curriculum map and highlight the RTP criteria, maybe start with just one strand?
- Consider how to use the RTP criteria to support Covid curriculum recovery.
- What representations/language is used, is there consistency across year groups?

Reflection and Evaluation

Please complete the reflection and evaluation form.

Email a copy back to us:

sally.barker@matrixmathshub.co.uk

Zoe.akers@matrixmathshub.co.uk

Thank you for your time! Any questions?