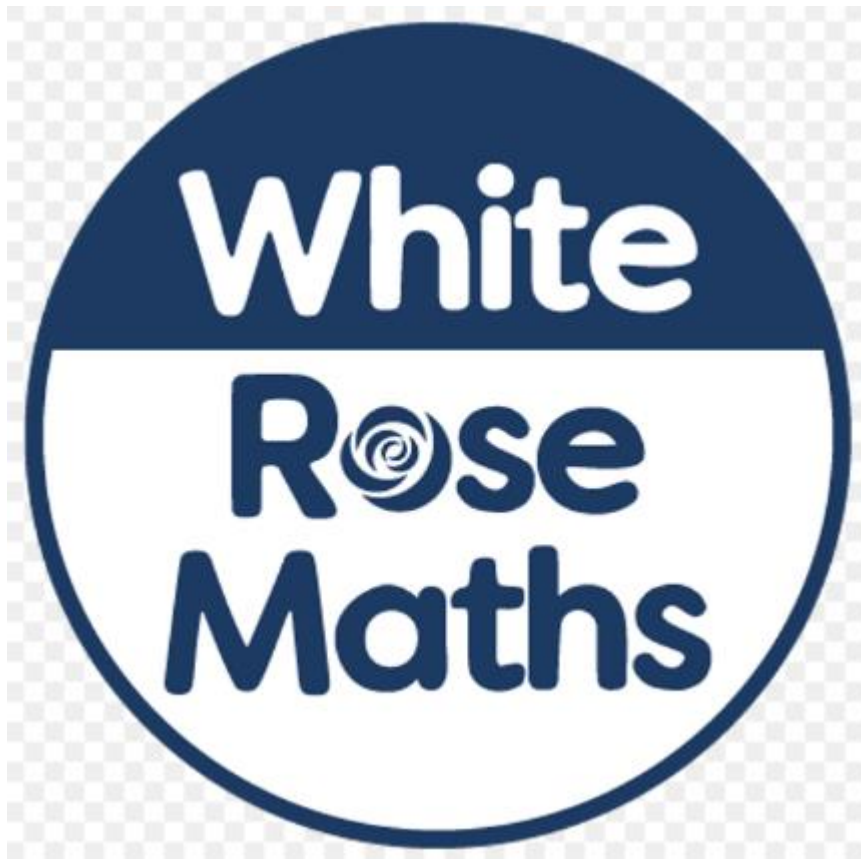


What does Maths Look Like at Broadstone Hall Primary School?



At Broadstone Hall, we plan using the White Rose Maths Scheme.

Long/Medium Term Planning: White Rose Yearly Overview

E.g. Year 5

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Place value VIEW		Addition and subtraction VIEW		Multiplication and division VIEW			Fractions A VIEW				
Spring term	Number Multiplication and division VIEW		Number Fractions B VIEW		Number Decimals and percentages VIEW			Measurement Perimeter and area VIEW		Statistics VIEW		
Summer term	Geometry Shape VIEW		Geometry Position and direction VIEW		Number Decimals VIEW			Number Negative numbers VIEW	Measurement Converting units VIEW		Measurement Volume VIEW	

We need to be aware of approximately how long each of these units should take, in order to ensure coverage of all the key objectives across the year, and also adjust to account for the changing length of terms each year. The blocks are deliberately planned to provide opportunity for skills to be revisited later in the year.

How to plan a unit:

Look at the **Scheme of Work** for the block.

*You will find the whole scheme for the block at the top of each unit within White Rose.

*For quick reference, each individual page of the scheme of learning can be found in each step of the resources.

* Other helpful overviews can also be found at the very bottom of the White Rose page (scroll down!)

Autumn
Scheme of learning
Year 5

White
Rose
Maths

#MathsEveryoneCan

What are the **Small Steps** for this Unit?

**Watch out – sometimes the steps are spread out over two pages! There may be more than you expect. Which are Recap Steps?

You will find some of the steps are recap steps from the previous year group. Look back at previous year group block – are there any other steps from that year group that you may need to be aware of/recap?

How many lessons do you expect each small step to take? **

Are there any small steps which you expect to be particularly challenging/potential misconceptions?

**A small step does not necessarily equate to a lesson (although it often will). Some small steps will take less, some may take more. However the length of the unit should still say approximately the same.

Year 5 | Autumn term | Block 1 - Place value

White Rose Maths

Small steps

- Step 1 Roman numerals to 1,000
- Step 2 Numbers to 10,000
- Step 3 Numbers to 100,000
- Step 4 Numbers to 1,000,000
- Step 5 Read and write numbers to 1,000,000
- Step 6 Powers of 10
- Step 7 10/100/1,000/10,000/100,000 mo
- Step 8 Partition numbers to 1,000,000
- Step 9 Number line to 1,000,000
- Step 10 Compare and order numbers to 100,000
- Step 11 Compare and order numbers to 1,000,000
- Step 12 Round to the nearest 10, 100 or 1,000
- Step 13 Round within 100,000
- Step 14 Round within 1,000,000

Check against the DfE Ready to Progress Criteria

These are the objectives that are considered **vital** in order for children to be ready to progress to the next year group's learning.

They do not cover the whole curriculum (we still have to cover it all!) but they are designed to help **prioritise essential** learning.

It is essential that children have a good grasp of these skills before moving up to the next year group.

Also look at the RTP for the previous year group – will you need to check understanding of these before moving on to new learning?

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).
		2NPV-1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning.	3NPV-2 Recognise the place value of each digit in <i>three</i> -digit numbers, and compose and decompose <i>three</i> -digit numbers using standard and non-standard partitioning.	4NPV-2 Recognise the place value of each digit in <i>four</i> -digit numbers, and compose and decompose <i>four</i> -digit numbers using standard and non-standard partitioning.	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.	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.
	1NPV-2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =	2NPV-2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.	3NPV-3 Reason about the location of any <i>three</i> -digit number in the linear number system, including identifying the previous and next multiple of 100 and 10.	4NPV-3 Reason about the location of any <i>four</i> -digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.	5NPV-3 Reason about the location of any number with up to 2 decimal places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.	6NPV-3 Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.
Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NPV			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.	4NPV-4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.	5NPV-4 Divide 1 into 2, 4, 5 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 belled intervals divided to 2, 4, 5 and 10 equal parts.
					5NPV-5 Convert between units of measure, including using common decimals and fractions.	

You will find the RTP objectives on a PDF within our maths folder. In the same location, you will also find some ppts with useful animations that can be used as extra resources if necessary to ensure full understanding of these objectives. These can be useful for pre-teaching/gap-fill.

Highlight Small steps which are related to the ready to progress Criteria.

These will be priority objectives.

How will we ensure that all children meet these priority objectives?

Will pre-teach/gap-fill intervention be needed?

***RTP

exemplification pts from NCETM can be useful as additional material for these objectives.

[Exemplification of ready-to-progress criteria | NCETM](#)

Year 5 | Autumn term | Block 1 - Place value

White Rose Maths

Small steps

Step 1	Roman numerals to 1,000
Step 2	Numbers to 10,000
Step 3	Numbers to 100,000
Step 4	Numbers to 1,000,000
Step 5	Read and write numbers to 1,000,000
Step 6	Powers of 10
Step 7	10/100/1,000/10,000/100,000 more or less
Step 8	Partition numbers to 1,000,000

White Rose

Planning a small step:

Notes and guidance – what do we want children to be **doing** in this lesson?

What **concrete resources** and **images** will they be using?

Mathematical Talk –

What are the **key questions** we should be asking?

What is the **key vocabulary**?

What are the **stem sentences**?

Importance of **varied fluency**

Notes and guidance

In Year 4, children learned about Roman numerals to 100. In this small step, they explore Roman numerals to 1,000, and the symbols D (500) and M (1,000) are introduced.

Children explore further the similarities and differences between the Roman number system and our number system, learning that the Roman system does not have a zero and does not use placeholders.

Children use their knowledge of M and D to recognise years using Roman numerals. Asking children to write the date in Roman numerals is one way to reinforce the concept daily.

Things to look out for

- Children may mix up which letter stands for which number.
- Children may add the individual values together instead of interpreting the values based on their position, for example interpreting CD as 600 instead of 400
- It is often more difficult to convert numbers that require large strings of Roman numerals.
- Children may think that numbers such as 990 can be written as XM instead of CMXC.

Key questions

- What patterns can you see in the Roman number system?
- What rules do we use when converting numbers to Roman numerals?
- What letters are used in the Roman number system? What does each letter represent?
- How do you know what order to write the letters when using Roman numerals?
- What is the same and what is different about representing the number “five hundred and three” in the Roman number system and in our number system?

Possible sentence stems

- The letter _____ represents the number _____
- I know _____ is greater than _____ because ...

National Curriculum links

- Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals

Remember that the schemes of learning give you plenty of questions that you can share as a class, before you even start using any of the premium worksheets.

What opportunities for **reasoning** and **problem solving** will you include in this small step?

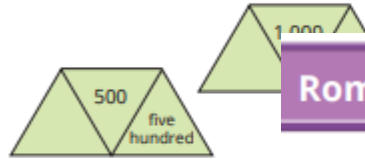
It is important we give **all children** opportunity to develop their **verbal reasoning skills**, and, as they get older, also the opportunity to regularly practise writing down this reasoning.

Roman numerals to 1,000

Key learning

- Each diagram should show a number in Roman numerals, digits and words.
- Complete the diagrams.
- Here is a date written in Roman numerals.

XXI / IX / MMXV



Roman numerals to 1,000

- Match the Roman numerals to

- DC
- CD
- CCCXX
- DXC
- CML
- CDLX

Reasoning and problem solving

Work out $CCCL + CL$.

Give your answer in Roman numerals.

Write five calculations, using Roman numerals, that give the same answer.

Compare answers with a partner.

D

multiple possible answers, e.g.

$CD + C$

$M \div II$

$C + CC + CC$

$C \times V$

Is the statement true or false?

In Roman numerals, 400 is CD, so 800 is CDCD.

False

Do you agree with Rosie?

Explain your answer.

No

The numbers in the sequence are increasing by CXX each time.

, , , ,

DL, DCLXX, CMX, MXXX


Work out the missing numbers in the sequence.

White Rose Slides

Which slides from the White Rose might be useful for teaching this small step?

** The slides are not necessarily just 'pick up and go'. We must adapt to the needs of our learners. Not all slides will be necessary, and some activities may need further examples before moving on.

**The videos can also be useful for planning as they provide an example of a teacher explaining the maths using the White Rose



Tens	Ones	tenths	hundredths
		● ● ● ● ● ● ●	● ●

There are 0 ones, 7 tenths and 2 hundredths.

The number is 0.72

Worksheets -

Which questions will be most beneficial to the learners?
You do not need to use them all. Less is more!

-Which questions will make a good **starting point**/re-inforce the concept using **concrete/pictorial**?

-Which questions will provide **varied fluency**?

-Which questions will provide opportunities to develop verbal **reasoning** skills?

-Which questions will provide opportunities to develop **problem solving** skills?

-Which questions will provide opportunities to develop **problem solving** skills?

-Which questions could be used **together** on the whiteboard as a whole class or for collaborative learning in pairs?

-Which questions could be used for independent practice?

-Which questions would be useful to challenge confident learners?

White Rose Maths

Decimals up to 2 d.p.

1 What number is represented on the place value chart?

Ones	Tenths	Hundredths
	0.1 0.1	0.01 0.01 0.01
0	2	3

Complete the sentences.
There are ones, tenths and hundredths.
The number is .

2 Represent these numbers on a place value chart.
Complete the sentences.

a) 0.56
There are ones, tenths and hundredths.

b) 0.08
There are ones, tenths and hundredths.

c) 1.48
There is one, tenths and hundredths.

d) 2.07
There are ones, tenths and hundredths.

3 Mo is thinking about tenths and hundredths.

In the number 2.49 the digit 4 represents 4 tenths or 0.4

What is the value of the digit 4 in each of these numbers?

a) 14.8 _____ d) 42.03 _____
b) 13.74 _____ e) 106.48 _____
c) 8.04 _____ f) 176.4 _____

4 a) Circle the number that has 5 in the tenths position.
53 5.3 0.53 0.35

b) Write three numbers that have 3 in the hundredths position.

5 Complete the calculations.

a) $0.64 = 0.6 + \square$ c) $0.3 + 0.05 = \square$
b) $0.53 = 0.5 + \square$ d) $0.06 + 0.8 = \square$

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Other useful things on the White Rose Website:

- At the very bottom of the White Rose webpage there are various other useful resources you can find – scroll down!
- Digital tools- here you will find an interactive place value chart, rekenrek, number lines etc – very useful.
- IWB files – these are downloadable in Active Inspire format so you can put them into your flips.
- 1 minute maths – this is an app that you should find on all the ipads. Great for fluency and times tables. It is now also available on the website so you can use it in class on your whiteboard.



Check out these 7 top reasons for using 1-Minute Maths!

1. Excellent practice — and no distractions.
2. A clear, intuitive process that children pick up straight away.
3. No login or internet access needed. Just download and play.
4. Enjoyable and motivating... How many can they get correct in one minute?
5. Helpful hints match those used in class.
6. Brilliant for building number fluency and confidence.
7. The mobile app is **completely FREE!**

Other Resources

In some cases, extra resources may be needed to reinforce a concept or provide further practice.

Any other resources used must match the mastery approach and be in line with the models and images used in the White Rose.

- NCETM Ready to Progress Materials
- NCETM Mastering Number materials (EYFS and KS1)
- Deepening Understanding maths materials
- ‘I see Reasoning’
- Twinkl ‘diving into mastery’ resources (**in general, AVOID other resources from twinkl as these do not support a mastery approach)