



Maths Workshop 2023

Maths at Oak Meadow

Core Values

1. Show empathy - 'More than me.'
2. Be healthy - 'Healthy body, healthy mind.'
3. Be curious - 'I see, I wonder.'
4. Be ambitious - 'Rise to the challenge.'
5. Be creative - 'Express yourself.'

Our core values underpin everything that we do in school.

How do we encourage these core values in Maths?

Maths at Oak Meadow

'More than Me'

We encourage the children to talk and think collaboratively about their learning.

They often work with a learning partner to share ideas and support one another.



Maths at Oak Meadow

'Healthy Mind, Healthy Body'

As with all subjects we encourage the children to apply themselves with a 'Growth Mindset'.

To keep trying when they meet challenges.

To learn from their mistakes and learn from them.


To look for different ways of approaching a problem.

To keep practising in order to improve.

Accomplish BIG Things With a

GROWTH MINDSET!

Success Begins With Believing You Can



Instead of Thinking...	Think This...
I can't do it.	I'm still learning. I'll keep trying!
I'm not good at this.	What can I learn to get better at this?
It's good enough.	Is this the best I can do?
It's too hard.	With more practice it will get easier!
I'm afraid of making a mistake.	Mistakes are how I learn & get better!
They are better at it than I am.	What can I learn from them?
I don't know how.	I can learn how!
I can't make this any better.	I can always find ways to improve!
I don't like challenges.	Challenges make me better!
I give up.	I'll try a different way!



Maths at Oak Meadow

'I see, I wonder'

We encourage the children to ask questions about the maths they are learning.

We encourage the children to want to push themselves further and achieve their best.



Maths at Oak Meadow

'Rise to the challenge'

We encourage all children to want to push themselves further and achieve their best.

Through the 'Mastery approach' that we use in school, we aim to ensure that all children are able to apply their skills to problem solving.



Maths at Oak Meadow

'Be creative'

Even in maths, it is possible to be creative!
Creative thinking is actively encouraged to allow children to look for alternative approaches to solve a problem.

We encourage the children to try out ideas and look for different ways of tackling a problem.

We encourage the children to independently select support resources such as number frames and cubes when they feel they are needed.



Teaching for Mastery

- At Oak Meadow, we teach our children following a mastery mathematics approach- with the ethos that 'all children can!'
- The National Centre for Excellence in the Teaching of Mathematics (NCETM) describes mastery maths as "acquiring a deep, long-term, secure and adaptable understanding of the subject."
- In the classroom, this will mean teaching mathematical learning in small steps that allow the children to develop confidence and fluency before moving on.
- This approach allows children to become 'fluent' in an area of maths and be able to apply their learning to new situations, such as solving problems.



Power Maths

Power Maths is a UK curriculum mastery programme recommended by the Department for Education to spark curiosity and excitement and nurture confidence in maths. This programme has been successfully implemented across our school over the last 3 years.



Power Maths

Although, we use the Power Maths Programme, teachers do have the freedom to adapt teaching as needed. This could mean adding extra tasks or whole lessons that help build children's varied fluency or provide further opportunities to extend our children's understanding applying their skills.




Lesson Starters

Most lessons start with Flashback 4.

The questions included, reminds the children of prior learning, recalling all aspects of maths.

Flashback 4 Year 6 | Week 1 | Day 1



1) What is the value of the digit 7 in the number 10.75?

2) What is 36×10 ?

3) Work out $\frac{1}{3} + \frac{5}{9}$

4) Write down a 4-digit number with 7 in the hundreds column.

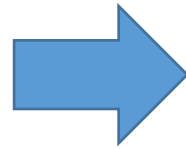
White Rose Maths



Lesson Starters

There will also a short activity linked to the times tables that are being focussed on for the week.





Numbers to 1,000,000

Discover

I have made a 6-digit number using the cards. It has 4 hundreds. My number has 2 ten thousands. It is less than 800,000 and odd.

10,000 more than the number I have made is 106,287.

Richard Lexi

2 4 6 7 8 9

1 a) What numbers could Richard have made using the digit cards shown? How many different answers can you find?
b) What number has Lexi made?

A 'discover' task to encourage curiosity about the up coming learning. Presenting a problem in a relatable context.



Think together

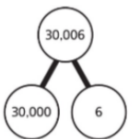
1 Richard has made some numbers using different representations.

Say each number **out loud**. Then write each number in words.

3 2 5 6 7

HTh	TTh	Th	H	T	O
4	9	1	0	6	2

HTh	TTh	Th	H	T	O
●●	●●●●●●●●	●●●●●●●●			



73273

20580

43006

extra examples

Question: How can you tell what to write?

HTh	TTh	Th	H	T	O

Number Words

1 one	11 eleven	20 twenty	30 thirty
2 two	12 twelve	21 twenty one	40 forty
3 three	13 thirteen	22 twenty two	50 fifty
4 four	14 fourteen	23 twenty three	60 sixty
5 five	15 fifteen	24 twenty four	70 seventy
6 six	16 sixteen	25 twenty five	80 eighty
7 seven	17 seventeen	26 twenty six	90 ninety
8 eight	18 eighteen	100 one hundred	1,000 one thousand
9 nine	19 nineteen	1,000,000 one million	1,000,000,000 one billion
10 ten	20 twenty		

Think about resources which may be useful to provide extra support.

The 'share' task, encourages the children to talk about how they tackled the discover task and the mathematical modelling that they used. Key interactive modelling tools can be found within the unit online.

'Think together' is another set of questions that can be completed; using the 'I do, we do, you do' approach, which scaffolds the skills they will be practising and learning.

Share

a)

I have made a 6-digit number using the cards. It has 4 hundreds.

Put the 4 in the hundreds column.

HTh	TTh	Th	H	T	O
			4		

My number has 2 ten thousands.

Put the 2 in the ten thousands column.

HTh	TTh	Th	H	T	O
	2		4		

It is less than 800,000 and odd.

The digit in the hundred thousands column must be less than 8.

The 7 or the 9 must go in the ones column to make the number odd.

HTh	TTh	Th	H	T	O
6	2		4		9

The digits that are left can be placed in either the thousands or the tens column. So Richard could have made:

I made 726,489 and 728,469 when I used 7 instead of 6 as the first digit.

I made 629,487 and 628,497 when I used 7 instead of 9 in the ones column.

Independent learning

Unit 1: Place value within 10,000,000, Lesson 1 → Textbook 6A p8

Numbers to 1,000,000

1 Write the numbers that are shown on the place value grids.

a)

HTh	TTh	Th	H	T	O
●●●	●●	●●●●● ●●●●●	●●●●●	●	●●

b)

HTh	TTh	Th	H	T	O
	●●●●● ●●	●●	●●●		●●●●

2 Write each of the numbers in numerals.

a) one hundred and twenty-three thousand

3 What is the value of each underlined digit?

a) 731,142 _____

b) 2,904 _____

c) 7,373 _____

d) 518,420 _____

e) 112,304 _____

f) 35,182 _____

4 Using all six digit cards each time, write a number:

a) that is even

b) that is odd

c) that is a multiple of 5

d) that is greater than 500,000 but less than 700,000.

7	8	5
3	4	9

The children will all then access their Power Maths pupil books to try out independently the skills they have been practising.



Support

first group		
second group		
total		

$6 + 1 = 7$

Concrete **Pictorial** **Abstract**

$3 + 2 = 5$

MathShed

When accessing activities in Power Maths, children will be either given or are allowed to select resources that will be useful support, particularly when being introduced to something new.

The questions within the books will also use pictorial representations.

As our children develop their skills, they may require less and less concrete or pictorial support.



Resources - Numicon

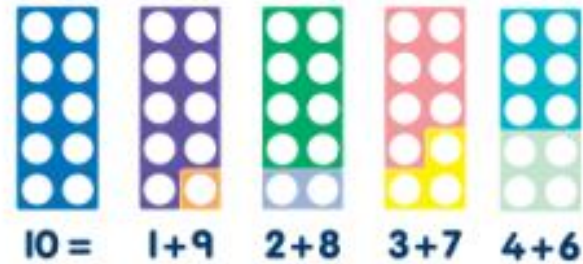
Numicon is a fantastic resource that is again used throughout school. Each Numicon shape represents a number from 1-10. We use the resource in a variety of ways, some of which are shown below:



To practically represent numbers and count accurately.



To scaffold adding numbers together and finding number bonds!



To represent odd and even numbers visually. Children can see that odd numbers cannot be shared equally.



To support your child's understanding of the pattern of the counting system.

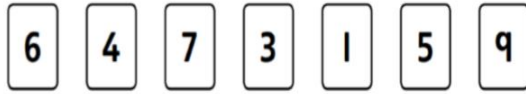
Teens numbers



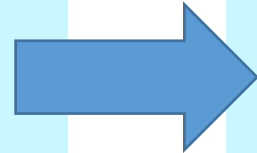
Mathematics Workshop

Deepen Understanding Challenge

- 2 a) Use each digit card once to make an even number as close as you can to five million.



- b) What is the difference between the second largest and second smallest odd numbers you can make?
c) How many multiples of 5 can you make greater than nine million, seven hundred and fifty thousand?



This question has been found in the follow up deepen activities section for children who complete all of their questions correctly and need an extra challenge.

There are challenges across the pages of the children's Power Maths books, but there will be also be 'deepening understanding' tasks too.

Let's reflect...

Write down three pieces of information about the number 172,428.
Compare your information with your partner's information.

• _____
• _____
• _____

Completed by all at the end of the lesson- regardless of where they got to in their PM book.



1. a) The LCM of 4 and 10 is 20.

$$\frac{3}{4} = \frac{15}{20}, \frac{1}{10} = \frac{2}{20}, \frac{15}{20} + \frac{2}{20} = \frac{17}{20}$$

$$\text{So } \frac{3}{4} + \frac{1}{10} = \frac{17}{20}$$

- b) The LCM of 8 and 12 is 24.

$$\frac{7}{8} = \frac{21}{24}, \frac{5}{12} = \frac{10}{24}, \frac{21}{24} - \frac{10}{24} = \frac{11}{24}$$

$$\text{So } \frac{7}{8} - \frac{5}{12} = \frac{11}{24}$$

2. $\frac{1}{20}$ of a metre remains.

3. Ambika has added both the numerator and denominator. To work out the calculation correctly, you need to find the lowest common denominator and find equivalent fractions using this denominator. You can then add the numerators but the denominator will stay the same. $\frac{3}{10} + \frac{1}{5} = \frac{3}{10} + \frac{2}{10} = \frac{5}{10}$ which can be simplified to $\frac{1}{2}$.

4. a) $\frac{13}{15}$

b) $\frac{23}{24}$

- c) $\frac{1}{12}$

d) $\frac{13}{20}$

5. $\frac{6}{7}$

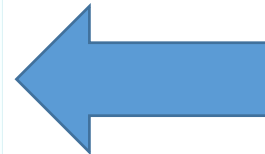
6. No, Richd is not correct. $\frac{5}{9} + \frac{2}{5} = \frac{25}{45} + \frac{18}{45} = \frac{43}{45}$. This is less than the whole book as that would be $\frac{45}{45}$.

7. a) $\frac{1}{2} + \frac{3}{8} = \frac{7}{8}$

b) $\frac{1}{2} - \frac{1}{7} = \frac{5}{14}$

Reflect

Amelia found the lowest common denominator of 20, however, she forgot to multiply the numerators in order to find equivalent fractions. The correct calculation is $\frac{8}{20} + \frac{5}{20} = \frac{13}{20}$.



Children will reflect on how they feel they have found the lesson.

To allow the children instant feedback, some lessons will contain 'self marking', this supports children in quickly find errors and address misconceptions. This of course will be checked by a teacher! This means the teacher can find out quickly who may need more practice or support.

Power Maths

The mastery approach was designed to allow all children to make progress and be sufficiently challenged in their thinking and understanding.



How can you help?



All of our children have access to MathShed – homework will usually be set their linked to their learning. There are also other activities for the children to try.



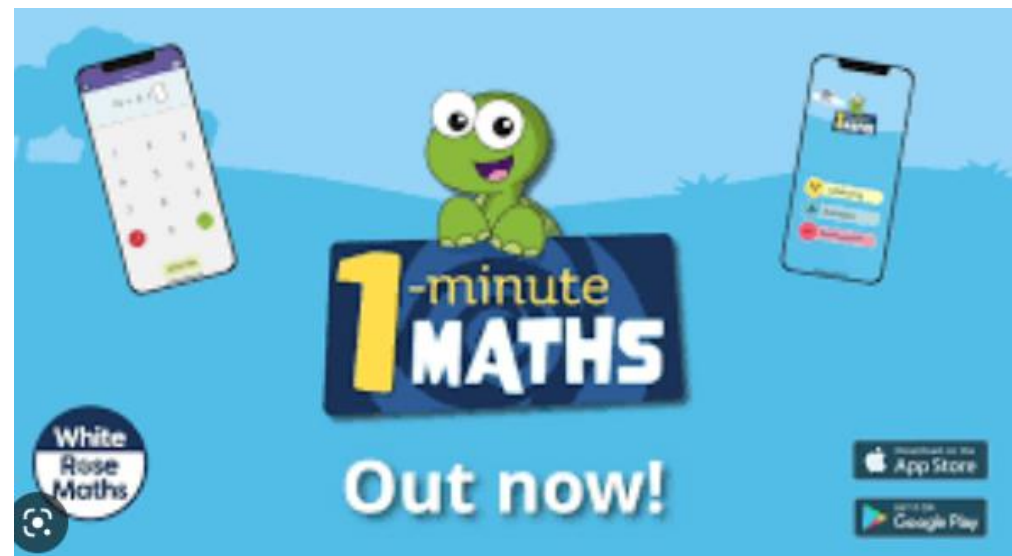
When it comes to times tables, speed AND accuracy are important – the more facts your child remembers, the easier it is for them to do harder calculations. Times Table Rock Stars is a fun and challenging programme designed to help children to master the times tables!



Interactive Resources to Access at Home

NumBots

NumBots is a fantastic programme that supports the recall of number facts and builds a conceptual understanding of seeing numbers in different representations. There are two modes – Story Mode and Challenge Mode. As the children progress through the levels, they can receive rewards to upgrade their robot – a big incentive!



How can you help?



Thank you for your support!



Any questions?

Let's now go and join our children in their maths learning journey. . .