Maths Workshop
19.11.25

What words or feelings do you think of when thinking about your own experience of maths?

Assumptions about ability in mathematics...

"You can either do maths or you can't"
"Only some people are good at maths"
"You are either mathematical/scientific or arty/creative"
"I was never any good at maths" (parent to child)
"When will I ever use this in everyday life?"

Why Maths Matters

- Builds problem-solving skills
- Helps with everyday life
- Supports future learning
- Encourages logical thinking and resilience

Aims

-To give an insight into mathematics at primary school

-To give an insight into mathematics at Smallwood

-To share some ideas of how you can help your child at home

What does the national curriculum say?

- **1. Become fluent in the fundamentals of mathematics**
- This includes:
- Developing strong knowledge of number facts and procedures
- Practising and applying skills regularly
- Working with increasing accuracy and efficiency
- Fluency means pupils can recall facts, use methods confidently, and apply them to different situations.

- **2. Reason mathematically**
- Pupils should be able to:
- Follow a line of enquiry
- Conjecture relationships and generalisations
- Use mathematical language to explain and justify their ideas
- Reasoning involves explaining *why* something works, not just giving an answer.

- **3. Solve problems**
- Pupils should be able to:
- Apply their maths to a variety of routine and non-routine problems
- Break problems down into smaller steps
- Use different strategies to find solutions
- Problem solving includes word problems, puzzles, and real-life maths.

KS1 statutory curriculum

Number
Number & Place Value
Addition & Subtraction
Multiplication & Division
Fractions

Measurement

Geometry
Properties of Shapes
Position & Direction
Statistics

KS2 Curriculum

Number
- Number & Place Value
- Addition & Subtraction
- Multiplication & Division
- Fractions, Decimals & Percentages

Ratio & Proportion (Year 6 only)
Algebra (Year 6 only)
Measurement
Geometry
- Properties of Shapes
- Position & Direction

How are the 3 aims assessed?

Multiplication Check- Year 4

SATS in Year 6 (end of KS2)
1 x arithmetic paper
2 x problem solving papers

Example questions...

A school library has **500 books**.
12% of them are non-fiction.
How many non-fiction books are there?

A number is multiplied by 6 and then 4 is added.
The result is 58.

A rectangle has a **perimeter of 30 cm.**
Its **length is 9 cm.**
What is the width of the rectangle?

Maths 'Buzz' Words…

Fluency

Recall and automaticity: the effortless recall of facts, such as number bonds within 10 and times tables facts, and understanding the relationship between these facts.

Procedural fluency: being confident and accurate with using procedures and being able to select the most appropriate method for the task at hand.

Flexibility and adaptability: the skill of moving between different contexts and recognising connections between them. For example, understanding the concept of 1/4 in various situations, whether it's a fraction of a shape, a portion of time or a proportion of set of objects.

Mastery

Mastery in mathematics means that pupils develop a **deep, long-term, secure and adaptable understanding** of mathematical concepts. Instead of rushing through content, pupils spend more time exploring and fully understanding each topic.

Mastery is based on three key principles:

1. Fluency

- Pupils can recall and apply key number facts and methods **quickly and accurately**.

2. Reasoning

- Pupils can **explain their thinking**, justify answers, describe patterns, and use mathematical language confidently.

3. Problem Solving

- Pupils can apply their knowledge **in a variety of contexts**, tackle new problems, and choose efficient strategies.

The Goal of Mastery

- For every child to:
- Understand *why* mathematical methods work, not just follow steps
- Be able to use mathematical knowledge flexibly and independently
- Make connections between topics
- Retain learning over time and apply it to unfamiliar situations

What Mastery Looks Like in the Classroom

- **Small steps**: Concepts are broken into manageable steps so everyone can succeed.

- **Representation & Structure**: Pupils use concrete objects, images, and abstract methods to build deep understanding.

- **Variation**: Carefully chosen examples help children see patterns and connections.

- **Keeping the class together**: Most pupils move through content at the same pace with in-lesson challenge for rapid graspers.

- **Depth before acceleration**: More able pupils deepen understanding rather than moving to new content too soon.

Other Vocabulary

Maths Jargon Buster Sheets for Parents- take photos or I have put them on the school website on the maths page.

Place Value

Place value is at the heart of the number system. All digits have a value and a secure understanding of this will enable children to use and understand different calculation methods.
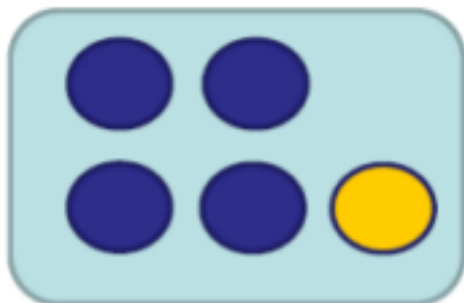
Subitising

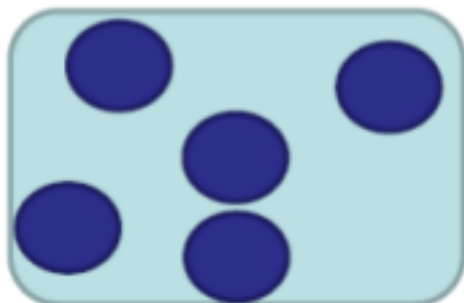The process of immediately knowing how many objects are in a small group without needing to count them.
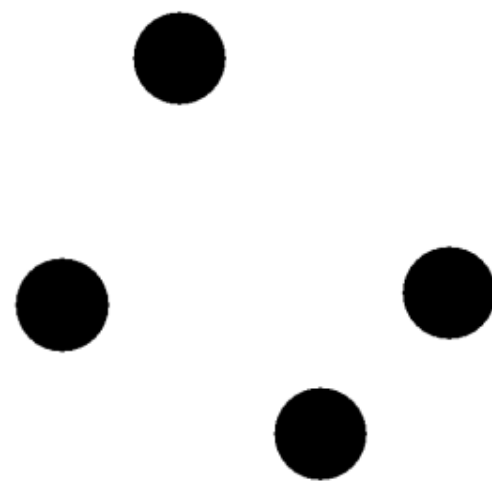
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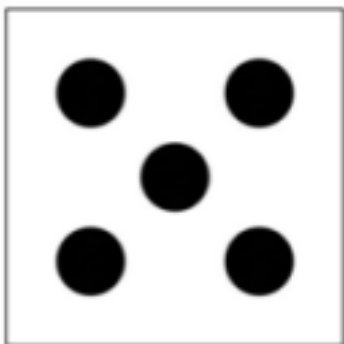
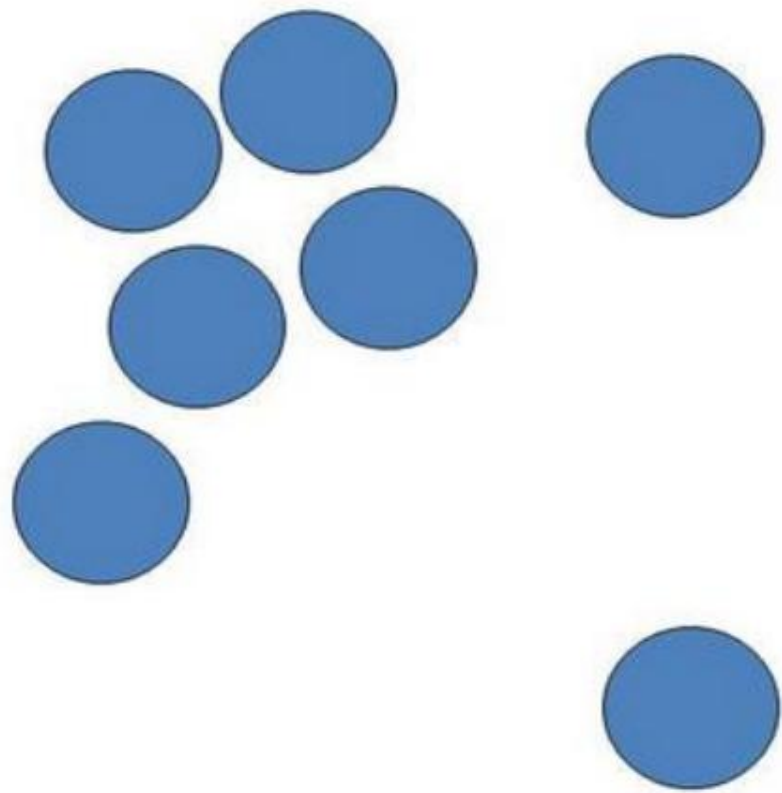Familiar and structured dot patterns

structured dot patterns

unstructured dot patterns

Maths at Smallwood

-Follow the National Curriculum

-Use White Rose Maths interactive resources (adapted long term overview to meet the needs of our children)

-Follow the mastery approach (with support/ challenge for individual learners)

-A focus on varied representations

-A focus on the concrete, pictorial, abstract approach

-A focus on fluency (additional 15 minutes daily)
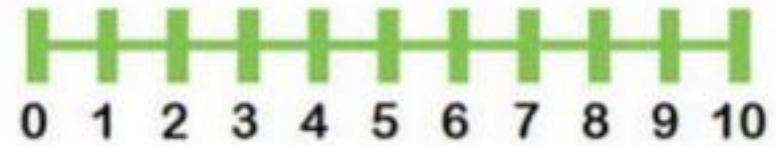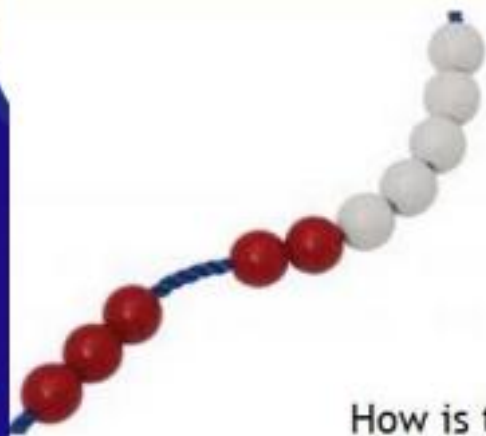
Conceptual variation

How is the concept presented in different ways through the representations used, the language used, the examples and explanations provided (including calculations presented in different ways , equals sign in different positions, linking of concepts eg inverse relationships)
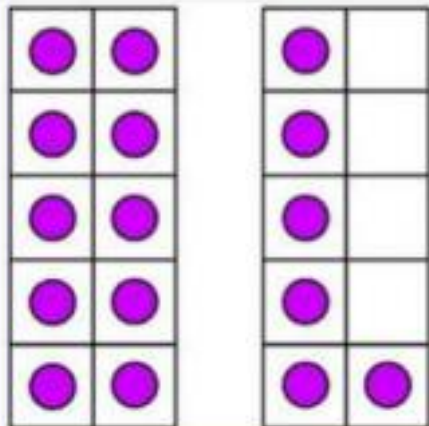
Some more models...
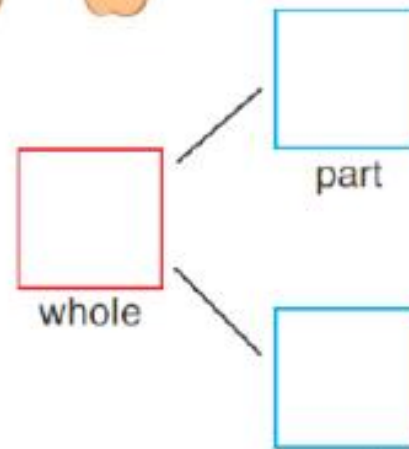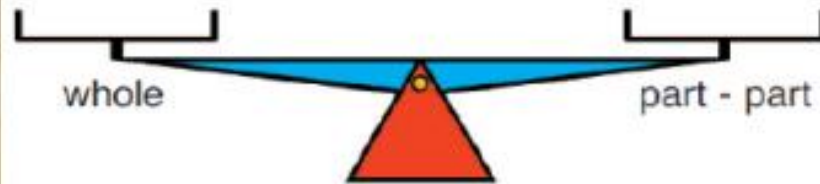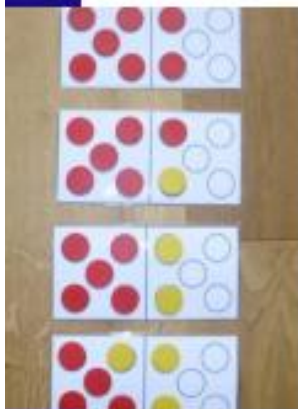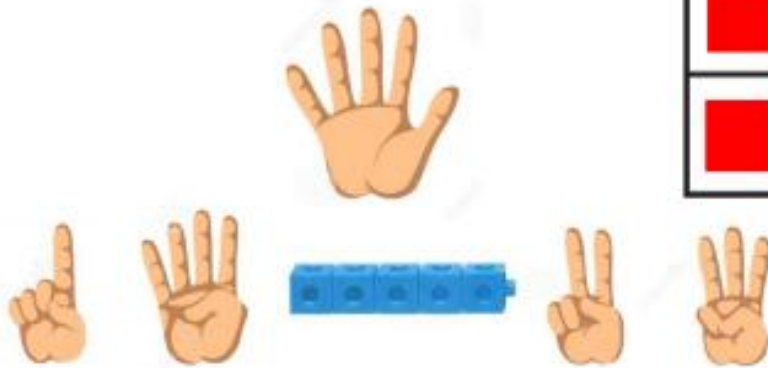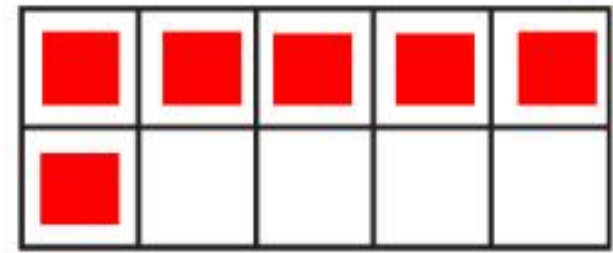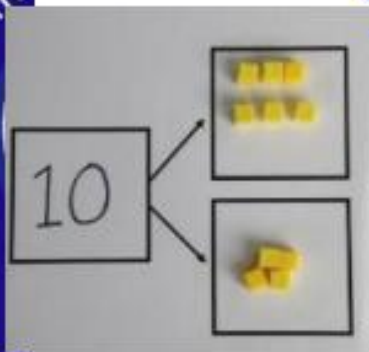
It is important that children recognise number bonds, different pairs of numbers with the same total.

6 + 2

7 + 3

5 + 3

1 + 4

6 + 4

6 + 1

6 + 3

3 + 4

5 + 4

3 + 3

Multiple representations

Concrete The DOING

Pictorial The SEEING

Abstract The SYMBOLIC

Tens	Ones
2	3

/ˈtwɛnti ˈθri/
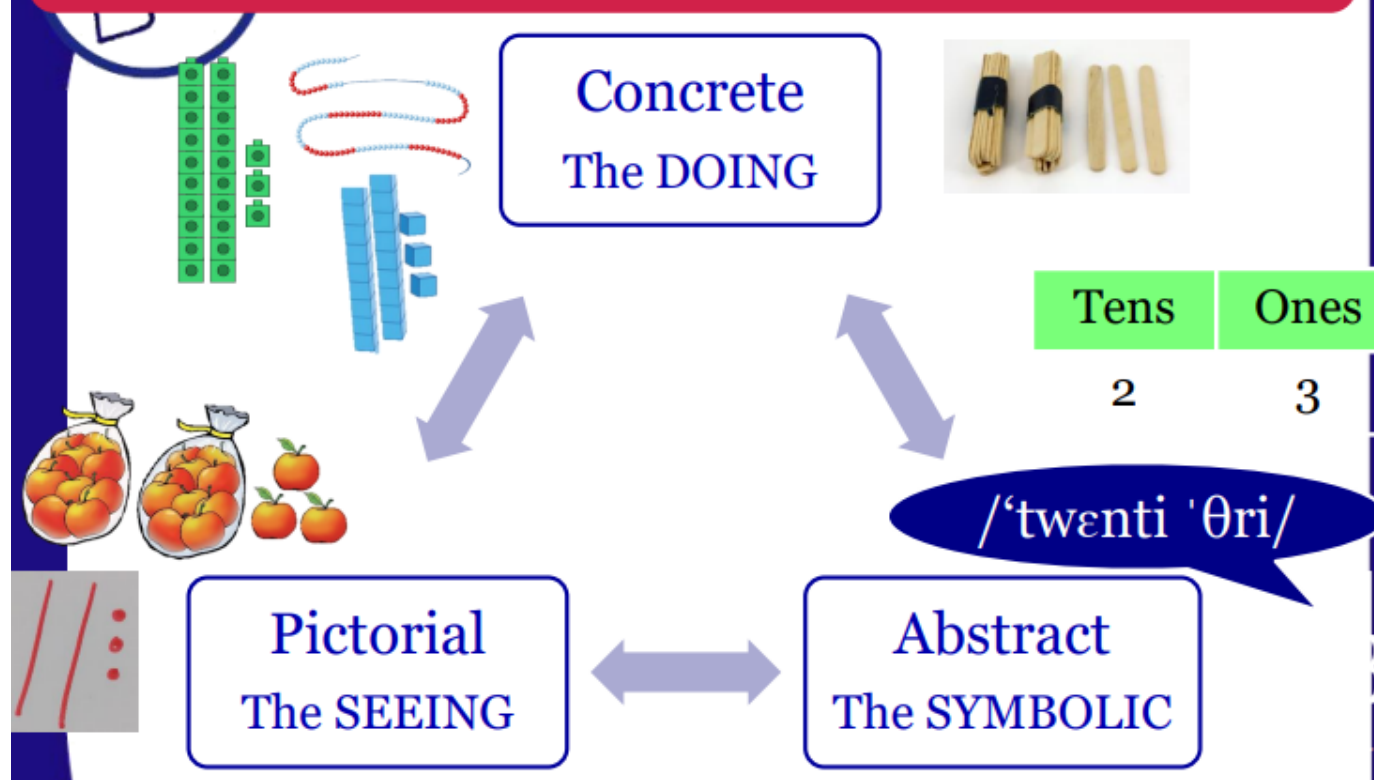
What might a typical lesson look like?

-Flashback 4

-Response time from previous lesson (support/ challenge)

-Introduce new content (get ready)

-Teacher talk/ modelling

-Guided Practice (teacher leading learning)

-Independent practice in White Rose Textbook (or alternative task, practical/ worksheet)

*There is also an additional 15 minutes per day of fluency work (song, mental, written)

Assessment

Flashback 4

Teacher feedback/ on the spot marking (at point of learning)

Mini plenaries (picking up errors/ misconceptions at point of teaching)

Self/ peer/ teacher marking of maths books/ white rose text books

End of unit assessments

Times tables Tests

TT rockstars scores/ data

Termly assessments

Numbots

TT Rockstars

Children should be fluent with multiplication facts (and repeated division facts) up to 12 x 12 by the end of year 4.

We have your child's login details printed so you can get them after the session.

Please promote this at home.

What do we want from our mathematicians?

A deep conceptual understanding

Ability to understand and use mathematical vocabulary

 An ability to spot patterns, reason and generalise

 Flexibility and resilience when approaching problems

Fluency and efficiency

An ability to solve problems in a range of contexts

Progress in Calculation Techniques…

1. Addition

Year	Method / Stage	Examples
Y1	Number lines, counting on, number bonds	7 + 5 → 7, 8, 9, 10, 11, 12
Y2	Column addition (2 digits), bridging 10	34 + 28 → 34 + 20 + 8
Y3	Column addition (3 digits)	234 + 456
Y4	Column addition (4 digits), decimals	2345 + 5678
Y5	Column addition with decimals	34.5 + 12.78
Y6	Multi-step problems with all number types	234.56 + 12.4 + 7.8

2. Subtraction

Year	Method / Stage	Examples
Y1	Counting back, number line, taking away	12 – 5 → 12, 11, 10, 9, 8, 7
Y2	Column subtraction with regrouping	54 – 28
Y3	Column subtraction (3 digits), bridging	456 – 178
Y4	Column subtraction (4 digits)	3456 – 1789
Y5	Subtraction with decimals	34.56 – 12.78
Y6	Multi-step problems	234.56 – 78.9 – 12.34

3. Multiplication

Year	Method / Stage	Examples
Y1	Repeated addition, arrays	3 × 4 = 4 + 4 + 4
Y2	2, 5, 10 times tables, arrays	5 × 6
Y3	3, 4, 8 times tables, grid method	23 × 4
Y4	Multiplication facts up to 12 × 12, formal written method	34 × 12
Y5	Multiply decimals by whole numbers	3.4 × 5
Y6	Long multiplication (4 digits × 2 digits), decimals	234 × 12, 3.45 × 2.1

4. Division

Year	Method / Stage	Examples
Y1	Sharing and grouping	12 ÷ 3
Y2	Division facts (2, 5, 10), simple word problems	20 ÷ 5
Y3	Short division (3, 4, 8 tables)	84 ÷ 4
Y4	Short division with remainders	96 ÷ 7
Y5	Divide decimals by whole numbers	34 ÷ 5
Y6	Long division (4 digits ÷ 2 digits), multi-step problems	234 ÷ 12

Mental Strategies

- Counting on/back in 1s, 10s, 100s
- Using number bonds
- Doubling/halving
- Near doubles
- Using known multiplication/division facts

Useful websites

Numbots

TTrockstars

Topmarks- hit the button

White Rose Maths (1-minute maths app)

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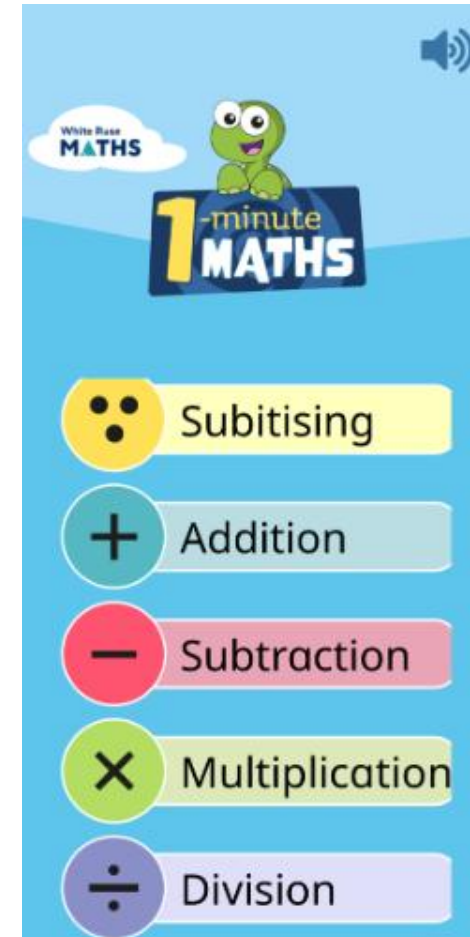
NCETM

Twinkl

National Numeracy — Family Maths Toolkit

Families Learning Together

The Maths Mum

Teach My Kids

BBC Bitesize – Primary Maths

Netmums – Fun Maths Games

What can you do?

Play (maths) with your child

There are opportunities for impromptu learning in games with real people that you can't get from an ipad or DS!

Recognise that there is more than one way of doing calculations – You may have learnt one method, but children are actively encouraged to seek out alternative methods in school and choose one which works for them.

Be an actor! – Get excited about maths and your child will get excited too.

Any Questions?

Thank you for listening ☺