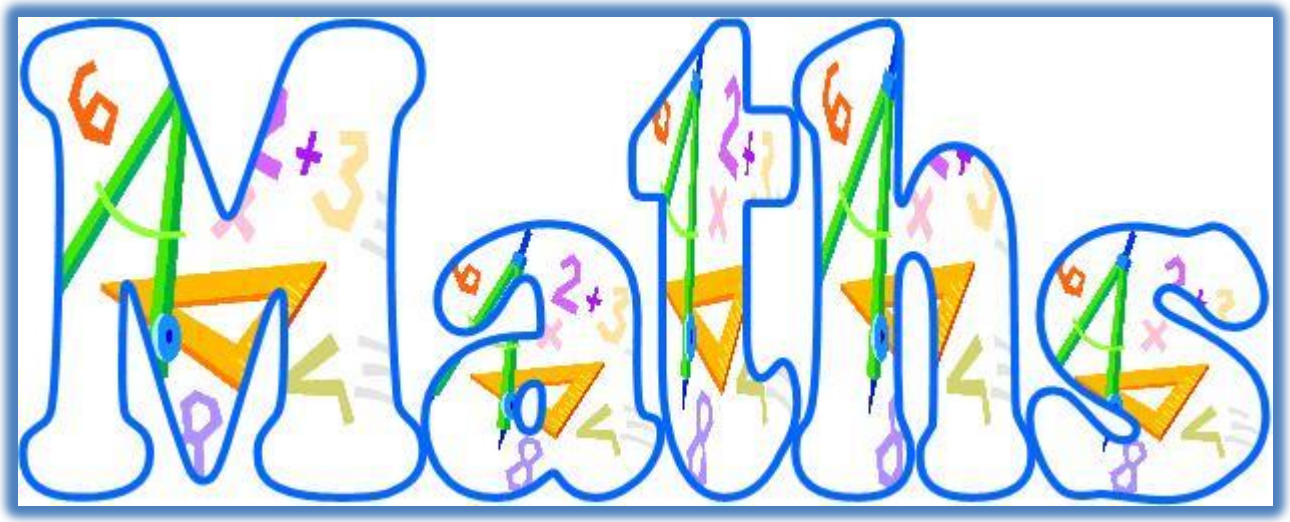
Harby C of E Primary School

Welcome to

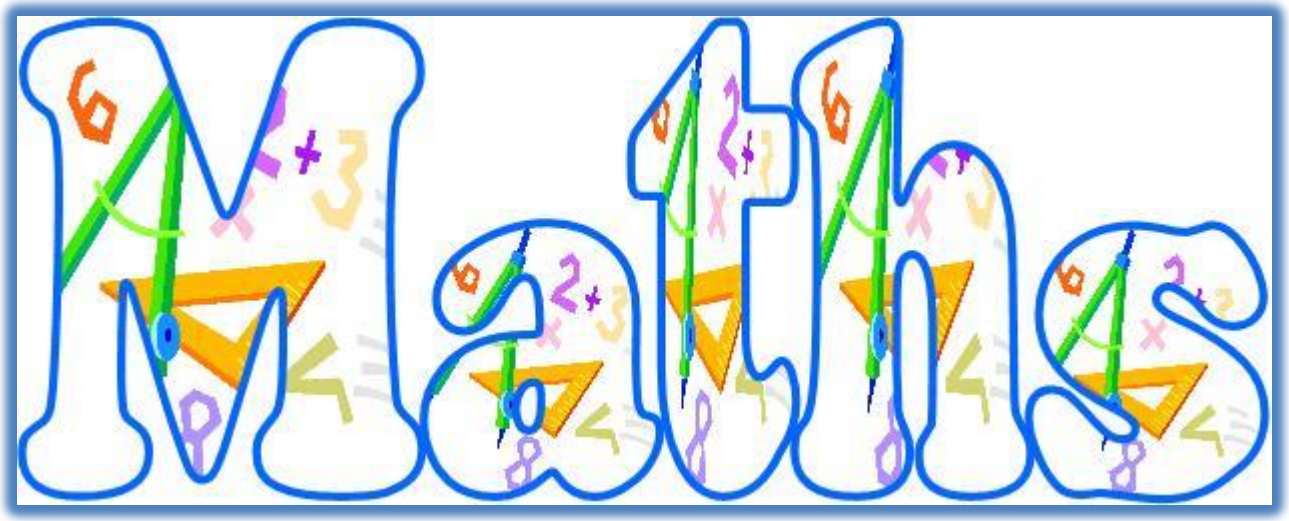
Parents Information Evening

November 2015



Aims

- The new curriculum and ‘Mastery’ approach
- Calculation
- Reasoning and problem solving



Why is maths important?

'A high-quality mathematics education provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.'

National Curriculum for Mathematics, DfE, September 2013

Mastery is something that we want pupils to acquire.

All pupils.

What does NC mean by ‘Mastery’

Children should;

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Following on from the last point…

- Growth-mindset Vs Fixed-mindset (positive attitude)
  - The importance of being stuck.
  - Resilience
  - We learn from our mistakes (children make connections between synapses quicker as a result of mistakes)

Another quote from the National Curriculum…..

‘The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.’

How does this impact on us and our pupils?

- Higher expectations!
- New end of Key Stage tests will test against the new curriculum – mastery and mastery at greater depth.

(KS1 – Arithmetic Paper, reasoning paper 1 (5 aural questions) Reasoning paper 2

(KS2 – Arithmetic Paper, Reasoning Paper 1 and Reasoning paper 2)

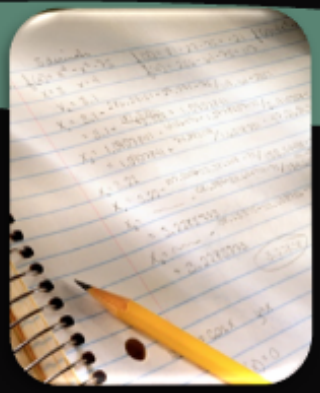
- Children should become more confident in their secure understanding of mathematical concepts.

Calculation

- This is still carried out in lessons as before – in line with our calculation policy (found on our website)
- There is an push for children to learn formal vertical methods

This comes with a hefty health warning!

Learning written methods is not the ultimate aim.

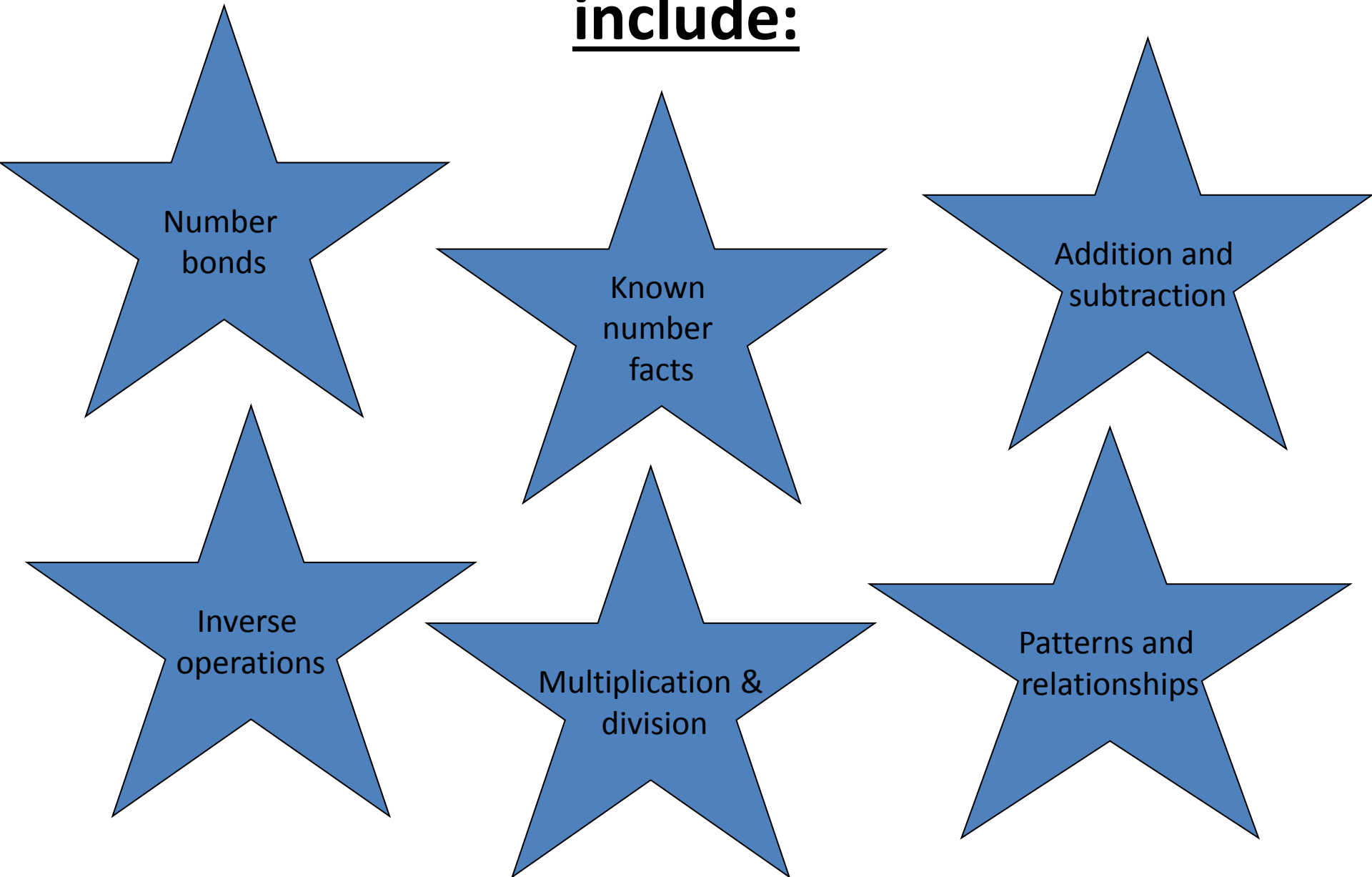


Mathematics is foremost an activity of the mind; written calculations are an aid to that mental activity.

Focus on mental methods

- As you have seen the New Curriculum relies on fluency, flexibility and adaptability
- Children expected to be able to select the most efficient method – not always vertical
- Crucial to secure mental methods along side fluency – this allows decision making

Areas we develop in mental maths include:



Calculation flow chart

- Can I solve this using a mental strategy? Yes/No
- Can I solve this using a mental strategy with jottings? Yes/No
- Can I solve this using an informal method? Yes/No
- Can I solve this using a formal written method? Yes/No
- Can I solve this with a calculator?

A sledgehammer to crack a nut!

$$\begin{array}{r} {}^{0}\cancel{1}\,{}^{9}0\,{}^{9}0\,{}^{1}0 \\ -\quad\quad 7 \\ \hline 993 \end{array}$$

$$\begin{array}{r} {}^{1}\cancel{1}6\,{}^{0} \\ -\ 9 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 97 \\ \times\ 100 \\ \hline 00 \\ 000 \\ 9700 \\ \hline 9700 \end{array}$$

$$7\overline{)\cancel{5}\,{}^{5}6} \quad 08$$

"A key issue ... to improve pupil's understanding of mathematics by focusing more on concepts and development of insight, and by relying less on teaching 'rules'."

Mathematics: made to measure, OfSTED, May 2012

Concrete – modelled - abstract

- New end of Key Stage tests will test against the new curriculum – mastery and mastery at greater depth.
- Fluency requires children to be secure in all aspects of the concept therefore it is essential that children gain plentiful experience of hands-on Maths – starting with concrete understanding of number.
- This then progresses through to modelling
- Finally to abstract
- Not seen in isolation – essential to make constant links throughout this process.

Progression through the year grps

- This is made explicit in our calculation policy.
- Children explore each concept and develop links across the subject
- Greater depth is explored before accelerating through the curriculum (fundamental message)

    - A child may be able to add 2 2-digit numbers but can they solve missing number questions?

Formal written methods

- These are underpinned by secure understanding of arithmetic concepts and will be developed through the Concrete-modelled-abstract approach – eg addition
- These should be used when it is appropriate – eg when it is most efficient

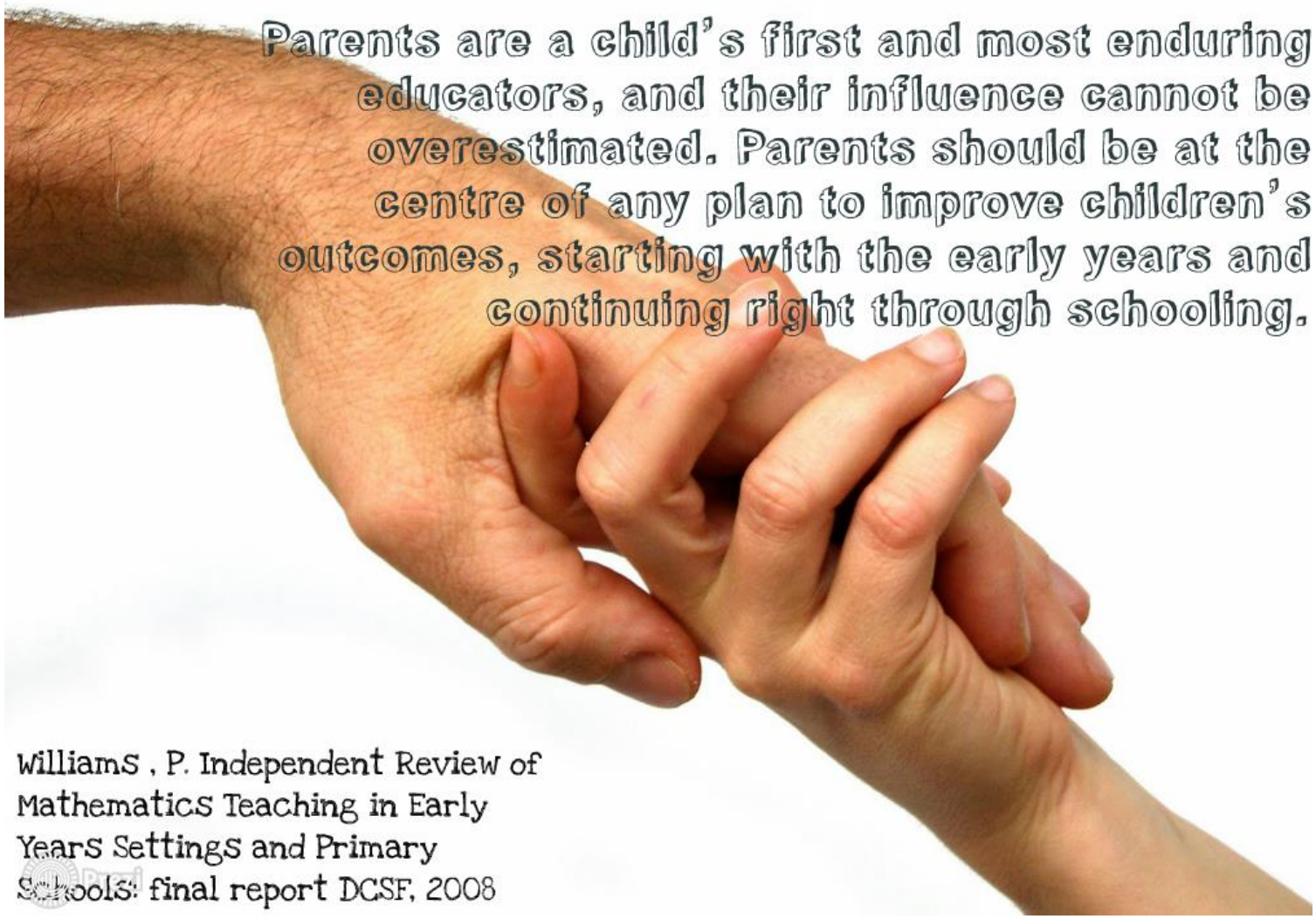
Problem solving and reasoning

- Use of rich tasks
- The importance of understanding process
- Application of knowledge
- The importance of being able to use rich Maths vocabulary to explain decisions and processes
- Try one……

Lets see what we expect of our children

- Arithmetic paper – 36 questions in 30 mins
- How about 5 questions in 5 mins?

What can I do at home to support?



What can you do at home to help?

Parental dos

- Have a **positive attitude** to maths!

- **Talk maths** with your child... e.g. "How much change will I get from...?", "Can you see five rectangles around us?", "How many...?"
- Involve children when taking measurements or weighing items
- Take note of numbers in real life e.g. telephone numbers, bus numbers, lottery numbers etc
- Give children opportunities to use money to shop, check change etc
- Talking about the mathematics in sport e.g.. How many points does your favourite team need to catch the next team in the division?

- **Challenge** with mental arithmetic questions.
- Encourage quick recall of times table facts (flash cards).
- Learn and show card and number tricks.
- Look at number puzzles/challenges from newspapers.
- Play number games

- **Enable concentration**: does your child get enough sleep?

- **Share strategies** and methods (allow child to be the expert)
- When helping your child calculate, use the method that the child has been taught.
- Numbers such as 10, 100, 1000 will be called Landmark Numbers.

What shouldn't I do?

Parental don'ts

We all want the best for our children and are enthusiastic about helping them. The following is a list of things that will not help your child in the long run. **Please don't teach your child the following things;**

- Please **do not teach your child a method that is 'out of order' developmentally**. Your child will be taught the appropriate method at school and this will be the method they will need to use for their homework.
- Please **do not teach your child a different method to the methods used in school** unless you have discussed it with the class teacher beforehand.
- The **decimal point never moves**!
- **We do not 'just add a zero'** when multiplying by 10 - adding 0 changes nothing!
- **We do not do sums**. Sum is another word for addition and not a general term for calculations.
- We encourage children to keep all work, even if it is wrong or a practice. Please **do not rub out and start again** a mistakes are the bedrock of learning and, as such, should be celebrated as part of the learning journey.

Thank you for your attention

If you have any further questions please do not hesitate to ask – if it is a quick question we can probably sort it then and there otherwise we are more than happy to make an appointment.