



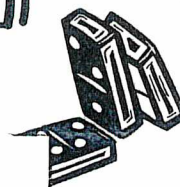
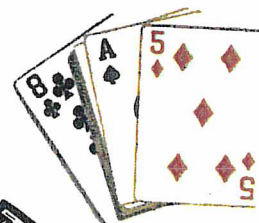
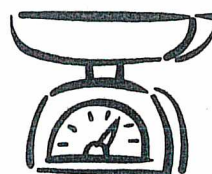
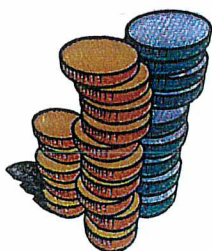
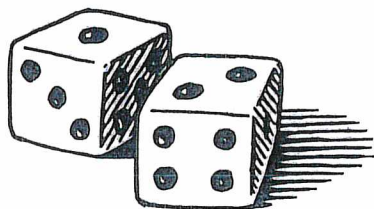
Long Sutton (C. of E.) Primary School Mathematics for Parents

Some key points and messages:

- Always present a positive attitude to mathematics! Don't let any fears/dislike/apprehension of your own towards all things mathematical affect how your child perceives and approaches maths.
- We all do maths every day - at home, at work, when we are shopping, gardening, playing sport etc.
- Encourage them to have a go - it's OK to get it wrong and try again.
- Maths is not always about only one correct answer - it's about explanations, justifications, reasoning - discovery, investigation.
- We teach things differently today to ensure real understanding. The methods we teach lead them ultimately to use efficient written methods (like the ones we were taught) - but with more understanding and therefore more accuracy. Respect the methods your child uses. Encourage them to show you and explain how they do it.
- Ask your child's teacher if you want more explanations of methods. We are very fond of our "teacher talk", so please ask if we mention something you are not sure of.
- Children need to develop "number sense". Being able to approximate and estimate are vital skills.
- Place value - a key concept. The place of a digit determines its value e.g. the digit "6" means different quantities in 60, 36, 675 etc.
- The Number line is a key tool that children will use throughout. It is an informal jotting that supports their thinking, their understanding of the number system and also their mental calculations.
- Developing mental strategies is vital to efficient calculation. These can be practised through games/puzzles etc.
- Partitioning is about breaking numbers up in lots of different ways. It supports efficient calculation.
- Arrays help children to understand multiplication and division - they are everywhere in the environment - windows, chocolate bars, on supermarket shelves etc.

- Division - could be about sharing things equally - or grouping things into groups of the same size
- "Chunking" is a method that children use for division - it is about using their own number knowledge to subtract groups or chunks to work out the division calculation. It is an expanded method that leads to greater understanding of more formal methods.
- Children need to use resources, models and images as and when they need to. These support mental calculation. Never make them think they should be able to do it without.
- Support your child through everyday maths - cooking, weighing, measuring, timing, counting, playing games. Maths is all around us in the environment and in our everyday lives and jobs.

Above all, have fun, bring maths alive for them and help to make it "an exciting adventure"!



Fun ideas for practising multiplication and division facts at home

Times tables Bingo: Write six multiples of your target times table in a bingo grid. Shuffle a set of cards marked 1 to 10 and place them in a pile face down. Turn over the top card and multiply it by your target number. For example, you are working on the multiples of 5 (target number) and you turn over a card showing 6. 5 multiplied by 6 = 30, so if you have 30 on your board you can cross it out. The winner is the person who crosses out all their numbers first!

Rap or song: Make up a rap or a song to help your child remember a times table, or specific fact, which they are struggling to remember.

Beat the calculator: In pairs, one with a calculator, one without, each works out the answer to a calculation aiming for the one without the calculator to say the answer first!

Multiplication Grid: Complete as much of a multiplication grid as you can, focusing on those that are your child's target. Once your child can do them all, they can start to time themselves, keeping a record of their best time.

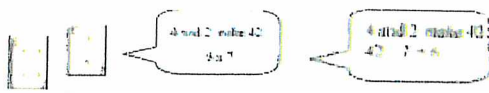
Poster: Create a poster of their target times table and use it to practise with.

Cards: Turn two cards over and multiply them together. Quickest correct answer keeps the cards. Or turn a card over and multiply it by the times table you are working on. Encourage your child to say a related division fact straight away. **Snap Cards:** Make a set of cards, some with multiplication questions on, and others with the answers. Use the cards to play snap or pairs!

What's the question? The answer is 24, 'What's the multiplication question?' My answer is 8, 'What's the division question?' Make it harder by letting children only be able to answer using facts on their target times tables (e.g. 2 or 4 times tables)

Turn the tables: You need a pack of cards with picture cards removed. Choose one of your child's target times tables such as the 7 times table. Share them out between the two players. Together turn over the top card from each player's piles. Put them together to make a double digit number. Is the number in your chosen table? If so, the first person to call out the corresponding calculation wins the pile of cards.

Whoever collects all the cards is the winner. Can be used for multiplication and/or division. One of many ways you can play with cards.



Do you remember how excited your children were about maths* when they were young? How they were excited by patterns in nature? How they rearranged a set of objects and found, with delight, that they had the same number? Before children start school they often talk about maths with curiosity and wonder, but soon after they start school many children decide that maths is confusing and scary and they are not a “math person”. This is because maths in many schools is all about procedures, memorization and deciding which children can and which cannot. Maths has become a performance subject and students of all ages are more likely to tell you that maths is all about answering questions correctly than tell you about the beauty of the subject or the way it piques their interest.

Given the performance and test-driven culture of our schools, with over-packed curriculum and stressed out students, what can parents do to transform maths for their children? Here are some steps to take:

1

Encourage children to play maths puzzles and games. Award winning mathematician, Sarah Flannery reported that her maths achievement and enthusiasm came not from school but from the puzzles she was given to solve at home. Puzzles and games – anything with a dice really – will help kids enjoy maths, and develop number sense, which is critically important.

2

Always be encouraging and never tell kids they are wrong when they are working on maths problems. Instead find the logic in their thinking – there is always some logic to what they say. For example if your child multiplies 3 by 4 and gets 7, say – Oh I see what you are thinking, you are using what you know about addition to add 3 and 4, when we multiply we have 4 groups of 3...

3

Never associate maths with speed. It is not important to work quickly, and we now know that forcing kids to work quickly on maths is the best way to start maths anxiety for children, especially girls. Don't use flashcards or other speed drills. Instead use visual activities such as <https://bhi61nm2cr3mkdkgk1dtaov18-wpengine.netdna-ssl.com/wp-content/uploads/2015/03/FluencyWithoutFear-2015.pdf>

4

Never share with your children the idea that you were bad at maths at school or you dislike it – especially if you are a mother. Researchers found that as soon as mothers shared that idea with their daughters, their daughter's achievement went down.

5

Encourage number sense. What separates high and low achievers is number sense – having an idea of the size of numbers and being able to separate and combine numbers flexibly. For example, when working out $29 + 56$, if you take one from the 56 and make it $30 + 55$, it is much easier to work out. The flexibility to work with numbers in this way is what is called number sense and it is very important.

6

Perhaps most important of all – encourage a “growth mindset” let students know that they have unlimited maths potential and that being good at maths is all about working hard. When children have a growth mindset, they do well with challenges and do better in school overall. When children have a fixed mindset and they encounter difficult work, they often conclude that they are not “a math person”. One way in which parents encourage a fixed mindset is by telling their children they are “smart” when they do something well. That seems like a nice thing to do, but it sets children up for difficulties later, as when kids fail at something they will inevitably conclude that they aren't smart after all. Instead use growth praise such as “it is great that you have learned that”, “I really like your thinking about that”. When they tell you something is hard for them, or they have made a mistake, tell them: “That's wonderful, your brain is growing!”



** I use maths, rather than math, partly because I am from the UK and we say maths there and partly because maths is short for mathematicS, it is a plural noun. Mathematics was chosen to be plural to reflect all the many parts of mathematics - drawing, modeling, asking questions, communicating, etc. Math sounds more singular and narrow (Do the math, usually means do a calculation!), and I prefer to keep the idea that maths is a multidimensional and varied set of mathematical forms and ideas.*



Our written calculation policy is available on the school website under the policy section.

The following demonstration videos are available on YouTube and can be useful for showing examples of methods that may be new to you

YouTube links

Addition:

E. g of adding on an empty number line – Peters Hill 24/7

E.g of partition and recombine -Expanded column addition (by Peters Hill Primary)

E.g of the expanded column method - Addition5 Expanded column method, adding the least significant digit first (St Maries Academy)

E.g. of the compact column method with exchange - Column addition year 5 to 6 without column headings (Mills Hill Primary)

E. g. Of the compact column method adding decimals - Column Addition of Decimals Year 5 (Mills Hill Primary)

Multiplication

E.g of multiplication: – Peter’s Hill 24/7 numbers 15-22

Grouping – 15

Number line – 16-18

Grid method – 19-20

Expanded vertical method – 21

Compact vertical method – 22

In addition to this we use an online resource which can accessed via the school website:

www.mymaths.co.uk

Username: longs Password: euros

Each pupil will be given their own personal log in

Subtraction

E. g of subtracting units or jumps of 10 on an empty number line – Peters Hill 24/7

E. g of the expanded column method (no decomposition) – Expanded column subtraction (Peters Hill Primary)

E. g of the expanded column method (decomposition - Expanded column subtraction Tutorial – Key Stage 2 maths (Maple Primary School)

E. g of compact column subtraction – Column subtraction with / without exchange (Peters Hill Primary)

Division

E.g of grouping and sharing: – Peter’s Hill 24/7

Sharing – n.o 23

Grouping – n.o 24

E.g of chunking - long division using chunking – annakono