

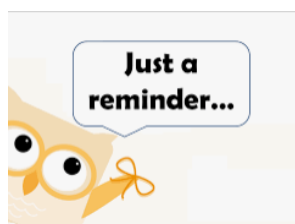
Welcome Back to School!



Happy New Year and a very warm welcome back to school from the St Gregory's maths team; we hope you and your families were able to enjoy a peaceful and healthy Christmas break and are braced for the term ahead.

The quote opposite is attributed to James Joseph Sylvester, an English mathematician who lived in the 1800s. I like this quote very much, linking as it does, music and maths. Both disciplines are full of patterns, rules, number, logic and sequences. The skills needed to master each subject beautifully complement one another! The greater the depth of knowledge in either, the greater the potential to perceive the beauty and magic they both contain!

What the children are learning



...so that you are better equipped to support and talk to your child about their school maths, you can find out what they are working on this term in their maths lessons (years 1-6). Simply follow the link to the brilliant [Knowledge Organisers](#) on our website. These are taken from our maths scheme of work and include great visual examples of the maths topics that will be taught in your children's classes. (Please note that some classes may be finishing off term 2 topics before moving onto term 3 content.) Year 2 Term 3 Shown below.

Factor, factor, product

There is a repeating pattern of 0, 2, 4, 6, 8

Even numbers are divisible by 2

2, 1, 2	2, 10, 20	2, 3, 6	2, 11, 22
2, 2, 4	2, 5, 10	2, 6, 12	2, 4, 18
2, 4, 8		2, 12, 24	2, 7, 14
2, 8, 16			

2 x 5 = 10
10 = 2 x 5
10 ÷ 2 = 5
5 = 10 ÷ 2

5 x 2 = 10
10 = 5 x 2
10 ÷ 5 = 2
2 = 10 ÷ 5

If I know... then I also know...

multiply, factor, product, divide, times

Multiples of 10 all have a zero in the ones column.

The products of 10 are even numbers.

10, 1, 10	10, 10, 100	10, 3, 30	10, 11, 110
10, 2, 20	10, 5, 50	10, 6, 60	10, 9, 90
10, 4, 40		10, 12, 120	10, 7, 70
10, 8, 80			

multiply, factor, product, divide, times

The product of an odd number and 5 is odd.

The product of an even number and 5 is even.

5, 1, 5	5, 10, 50	5, 8, 40	5, 11, 55
5, 2, 10	5, 6, 30	5, 9, 45	
5, 4, 20	5, 12, 60	5, 7, 35	
5, 8, 40			

Year 2 Term 3

Factor, factor, product

There is a repeating pattern of 0, 2, 4, 6, 8

Even numbers are divisible by 2

If there are 10 steps to increase by 10 then the scale is going up in 10.

If there are 5 steps to increase by 10 then the scale goes up in 2s.

If there are 2 steps to increase by 10 then the scale goes up in 5s.

Tree A is taller than tree B so tree B is shorter than tree A.

The yellow line is longer than the green line so the green line is shorter than the yellow line.

35kg is heavier than 70g so 70 grams is lighter than 35 kilograms.

If you have a child in EYFS, you can see which maths concepts will be covered and how you can support at home by clicking the following link to our leaflet on the school website - [Maths In Reception: A Guide For Parents](#) . (Also available in [Polish](#))

Times Tables and New Multiplication Masters

Fluency in times tables helps your child in many ways, e.g. it can:

- increase experience of success and therefore confidence, motivation and enjoyment of maths
- free up working memory to allow attention to focus on more complex, less routine problems
- improve engagement and assist understanding in many other areas of maths
- increase ability to spot patterns and relationships in both number and shape



You may already know about our 99 Club at school which supports times tables learning at St Gregory's, but in case you don't, there's a quick overview in the box opposite. We generally find that the children like the club, are keen to progress and are very excited when they move up!

However, there has been a recent (small and nice to have) **problem**, in that a number of our pupils are getting so good at their times tables that they become 99 champions, in some cases, as early as Year 2! This means that from then on, during the 99 tests, they are just repeating already well-secured facts for very little gain. It is boring and they are not learning anything new.

To address this problem, we have developed a new series of challenges called the **Multiplication Masters**. There are **Bronze**, **Silver** and **Gold** levels containing both multiplication and division questions of a much deeper nature. These questions are designed to reveal the patterns, relationships and engine of multiplication and division in a way that just learning the facts off by heart doesn't necessarily do. It is hoped that this will help the children develop greater flexibility and agility in their approach to multiplication and division problems. We have already trialled the new scheme with some of our 99 club champions and have had some great feedback!

99 Club in brief...

Pupils take fortnightly 10 minute tests (or quizzes if you prefer – a less scary term!), initially on addition, then repeated addition, leading to times tables questions, finally including both multiplication and division questions.

The children learn their times tables in a logical order and the tests assess that knowledge progressively, ultimately testing multiplication and division knowledge up to 12×12 (or $144 \div 12$) in a series of 99 questions.

Once children pass this final level, they are publically congratulated on becoming a 99 champion and receive a prestigious, shiny medal during celebration assembly!



Reminder for parents of children in Year 4 – All pupils in Year 4 have to take an online Multiplication Tables Check (MTC) in June. You can read the Government advice for parents [here](#).

Times Tables Practice:

[Links to websites for support via our school website](#)

[BBC Super movers times tables songs](#)

Resource of the term

Rekenrek



This term, we would like to introduce a resource new to the school, the rekenrek, which is used to help develop children's number sense.

It consists of two rows of 10 beads, 5 red and 5 white, which can be moved from side to side. Generally all the beads are moved to the right before building specific numbers.

As pupils make numbers with the rekenrek, they will begin to recognise the composition of numbers, or numbers within numbers, e.g. two sets of five is ten (five red and five white in one row, or five red on the top row and another five red on the bottom row); six is five and one (five red and 1 white) etc. The rekenrek is being used in KS1 classes as part of a new mastering number programme.

Click links [one](#) , [two](#) and [three](#) for explanations of how a rekenrek can be used.

Click this [link](#) to read a blog written by a parent about using a rekenrek with her children.

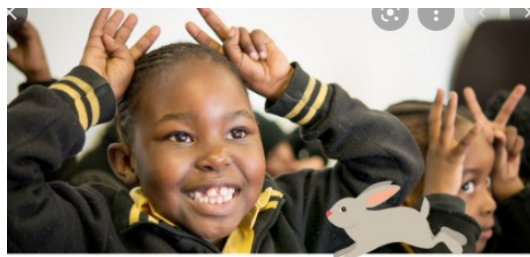
Click this [link](#) if you want to have a go at using an online rekenrek! Remember to start with all beads on the right and move beads to the left when building a new number.

Encourage your child to move beads in groups rather than counting in 1s if they can, and at each stage, ask them to explain what they are doing - how they know how many beads they are moving and how they can 'see' what number they have made.

This visualisation of numbers leads to internalising the composition of numbers and is number sense development in action!

Game of the term

Bunny Ears



The game this issue, complements our focus on number sense in the resource section opposite. A number (or tens frame containing a number) is shown to child (ren). They then have to make that number as fast as they can (could be a race with another child, or against a timer) with their fingers behind their ears (preferably without counting their fingers – although they may have to do this to begin with!). For example, a 7 is shown, so children could hold up 4 and 3 fingers, 5 and 2 fingers etc.

A variation is to use the game to practise number bonds to 10, where the number shown is a number bond, say 3, and the children have to make the corresponding number bond, in this case 7.

When keeping score, try using either a 5 frame or a 10 frame (doesn't have to be fancy— can just be hand drawn on a piece of scrap paper) to keep reinforcing that number sense and the structure of our decimal number system!

Don't forget—if you'd like to appear in the next edition of the newsletter, send in some photos of yourselves playing a maths game!

Maths in Real Life

It is not an uncommon mistake to think that once school is over, we can say goodbye to maths forever! However, there are very many areas in real life where good maths skills can really help out. Talking to your child about maths in real life helps them to realise that maths is everywhere, not just in maths lessons, and that working hard to gain maths skills is a really smart choice that will definitely help them throughout their lives. Here are a few areas where maths skills come in really handy:

Party Planning: e.g. calculating how much food you need, measuring ingredients and scaling up the recipes to ensure each guest gets fed, multiplying /dividing the number of items for goodie bags, picking the ideal venue depending on how many guests there are!

Travelling: e.g. adding up flight / hotel / meal costs and dividing them per person if in a group, estimating petrol costs, allocating time to activities.

Shopping: Keeping an estimated running total cost of items in your basket, calculating price per unit of an item, weighing produce, figuring out the final amount after discounts, judging if an offer really is good value or just a marketing ploy!

DIY: e.g. painting or retiling will require calculating wall / floor area to work out how much paint or how many tiles to buy.

Work: Nearly all jobs require some degree of maths skills – even something as simple as being asked to print a large number of copies of a report in time for a meeting may require you to work out how long each page takes to print and then scaling up to check you have enough time!

Money management: Strong maths skills will really help understand concepts like compound interest and budgeting and therefore contribute to smart and less stressful personal and family money management.

Sport: From helping you score in games, to working out averages, heart rates, calories burned, distances and average speeds!

Music: Anyone who has studied music will recognise the shared themes between music and maths and how strengths in one, complement the other!

Can Animals Count?

Amazingly enough, it's not just humans that use number to help solve real world problems! I used to think that only humans could understand the concept of number. Like language, I thought maths was something that set us apart from all other animals. But thanks to some fascinating podcasts and articles, I find that nothing could be further from the truth!

- Did you know for example that honeybees count landmarks when navigating towards nectar sources?
- Lionesses somehow tally the number of roars they hear from a nearby rival pride of lions before deciding whether to attack or retreat!
- Some ants keep track of their steps and some spiders keep track of how many prey are in their web.
- Some male frog rivals seem to count when trying to attract a female: *"If a male calls out – a whining pew followed by a brief pulsing note called a chuck – his rival responds by placing two chucks at the end of his own call. The first frog then responds with three, the other with four, and so on up to around six, when they run out of breath."* (Jordana Cepelewicz in quantamagazine.org 2021).



Maths *really is* all around us, even, it would seem, in the brains, behaviour and daily business of our fellow earthly creatures both large and small! Maths really **MUST** be very important!

Book Recommendations

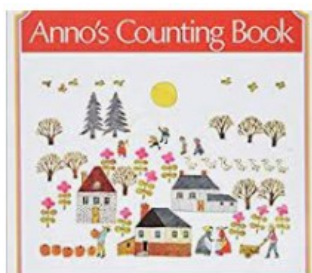
This is one of our favourite sections of the newsletter because story books provide a rich opportunity to build both **literacy skills** AND **mathematical thinking** all in one go!

So here are our recommendations for books this issue:

For young children:

[Anno's Counting Book by Mitsumasa Anno](#)

Recommended by our very own Mrs Jewer in Reception class.



From the Amazon blurb: *Every child is a natural mathematician, according to Mitsumasa Anno. Children are constantly comparing and classifying things and events they observe around them. As they try to bring sense and order into what they observe, they are actually performing basic mathematical feats. With Anno's Counting Book, the creator... invites young readers on another stimulating adventure of the imagination.. into the world of numbers and counting.*

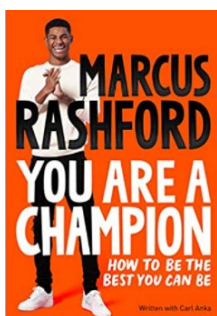
Gentle watercolour pictures show a landscape changing through the various times of day and the turning seasons, months and years, and the activities of the people and animals who come to live there. But the seemingly simple plan of the book is deceptive: look more carefully and you will see one-to-one correspondences; groups and sets; scales and tabulations; changes over time periods and many other mathematical relationships as they occur in natural, everyday living. The reader is subtly led to see and understand the real meaning of numbers.

For young and older children: [The Lion's Share by Matthew McElligott](#)

A Lion invites some animal friends to dinner. A cake is shared but each animal takes it in turns to take half of what is left until very soon, there is hardly anything left! A great story involving halving and doubling, showing how quickly things can become either very small or very big! Great for fractions too – you and your child could try and work out how much of the whole cake is left every time an animal takes half of what is left!



For absolutely everyone! [You Are A Champion - How To Be The Best You Can Be by Marcus Rashford](#)



Marcus Rashford, as well as being a brilliant footballer, became something of a national hero during the pandemic with his work alongside [FareShare](#) and [End Child Food Poverty](#) campaign, aiming to make sure that millions of children all over the UK had access to the food and support they needed during the pandemic and beyond. He has now written a book and although it isn't about maths, it is about being the very best you can be and is packed with lots of key messages that resonate with our positive mind-set approach, which originated for us as a school, in the maths mastery journey. Mrs Winter highly recommends!

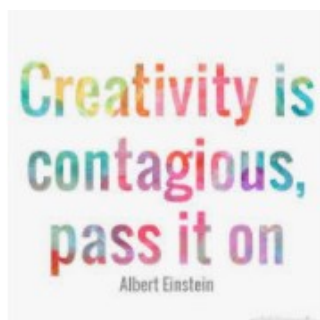
Copy available to borrow in the Maths Games Library!



This term, we are running a maths competition! But it's a maths competition with a difference - no tricky number puzzles to solve (much as we like them!). No, instead, we are asking children and families to spot really interesting examples of maths in nature, art or anywhere in the world around them (except perhaps the maths class!) and either draw it, take a photo or even write a poem about it, and crucially, explain how it relates to maths! Send entries into school with "Maths competition", your **name** and **class** written clearly on the back. **Prizes available** for great examples that impress Mrs Barnes and the Maths Team!

[\(here are some ideas to get you started!\)](#)

TIME TO GET CREATIVE...



With every good wish from the Maths Team.