



Big Maths is an approach to teaching number that aims to ensure that children are confident with number as they progress through school. It provides a rigorous and progressive structure and enables children to fully embed key skills and mathematical facts through engaging lesson.

We dedicate 20 minutes each day to basic skills and improving fluency.

Every child at Brynnau can secure their number facts through 'CLIC':

- **Counting** - exploring the number relationship of a fact, counting it out and deriving it for themselves
- **Learn Its** - simply practising and recalling number facts
- **It's Nothing New!** - applying new contexts to facts, such as units of measure
- **Calculation** - addition, subtraction, division and multiplication

CLIC is our pacy warm-up to maths lessons and builds on children's confidence!

Big Maths Characters

Many of the It's Nothing New concepts are introduced and taught using fun and interactive characters. This has proved to be a very powerful tool as the characters and the mathematical language that is associated with them is used consistently through the school and constantly referred to by both children and staff.

Each character helps children to learn and remember key principles that can be applied across a range of topics and difficulty.

E.g. Pim helps children make links between $3 + 4 = 7$, $30 + 40 = 70$, $£30 + £40 = £70$ and $0.03 + 0.04 = 0.07$.

Get to know the Characters...

Meet the Characters!

Pim



Pim is an alien from the planet CLIC

Pim has 3 arms on one side and 4 arms on the other side. He has 7 arms in total. Pim also has 3 legs and 4 legs, so he must have 7 legs.

He has 3 ears and 4 ears, 3 nostrils and 4 nostrils, and he has 3 eyes and 4 eyes. So, as soon as children know '3 add 4 equals 7', we can easily help them to realise that this applies to all 'things'. In other words 3 things and 4 things are 7 things.

Pim is always fun and friendly. So once children accept Pim's $3+4=7$ (arms, eyes etc), they easily accept that it must be true for other 'Learn Its' facts. If '2 add 3 equals 5' then we can use Pim to communicate that 2 add 3 will always be 5, no matter what 'the thing' is.

Squiggleworth



Squiggleworth is Pim's Pet!

Squiggleworth is Pim's pet and he can be used to help children have fun while they practice partitioning numbers.

Each of the 10 digits (0 - 9) and each of the 26 letters in our alphabet are just squiggles on a bit of paper. They are marks that don't have any value in themselves. We learn to attach meaning to these squiggles and not to others. We have to help children attach the same meaning to each squiggle so that when children see the squiggle '4', they think 'four' as a word and think of the amount that is 'four'! There are a number of steps that help children to learn the value of squiggles (place value) and Squiggleworth is there to make it friendly and fun. The 3 segments on Squiggleworth's body are for

the digits of numbers to be written in, using his feet to show the number of zeros after each.

Pom



Pom is an alien, he lives with Pim on the planet CLIC.

Pom helps children to learn 4 key mathematical words: multiple, factor, square and prime. With Pom's help, these words can be learnt easily.

Pom provides a fun framework for presentation. Put the product (answer) number in his tummy, then the factors can be recorded on the end of his body parts.

1 and the product itself (i.e. the number in question from his tummy) should be recorded in each eye. Always write these two factors first, always in their special place.

Then any pair of factors that are discovered are written as a pair at the end of each arm. Check that each pair multiplied together equal the number in Pom's tummy.

If the number has a Square Root, this goes in his tail!

Count Fourways



Count Fourways is an intergalactic traveller!

The 'four ways' are counting in 1s, 2s, 5s and 25s. Here we introduce the children to another Big Maths character, called Count Fourways. He is called Count Fourways since the children simply learn to count out loud in four crucial ways. Each of these four ways is built upon progressively and in alignment with the children's developing understanding of place value.

Mully Multiple



Meet 'Mully Multiple'! He is known as Mully for short. Mully likes to explore and to hide. He likes to hide behind the biggest multiple of a number he can find.

'Where's Mully?' is a Big Maths game, the objective is to find where Mully is hiding. It extends children's knowledge of multiples and how

known multiples can be added to other known multiples to find new multiples. Children playing 'Where's Mully?' are actually learning to become proficient at division!

Speedy Col



Speedy Col has a lot of energy! She likes to do everything quickly. It's not just about being fast though, she's careful too and is really good at Column Methods. Speedy Col likes everything done properly and is motivated to get the right result!

Daily Maths Lesson

Each daily maths lesson begins with a **CLIC** session:

Counting: Children learn to count forwards and backwards (progressing from whole numbers to ten through to counting in decimals and fractions) and to 'count on' from any number.

Learn Its: Recalling basic number facts including all four operations (addition, subtraction, multiplication and division)

It's Nothing New: Children apply what they have learned to acquire new skills in a simple manner.

E.g. if they know $4 + 3 = 7$, then 'its nothing new' to learn that $4p + 3p = 7p$.

Calculation: Children use and apply facts and knowledge from CLIC to all four operation calculation methods (addition, subtraction, multiplication and division).

Big Maths Assessment

As well as tracking children's knowledge and understanding using their position on the Progress Drives, once a week the children sit three quick and easy Big Maths tests. These are used as assessment tools that allow teachers to see exactly what the children know and what they don't know. They also provide children with a fun and motivational way to track their own progress and set their own targets for numeracy. These tests begin with fun, catchy jingles that enthuse and engage the children.



The CLIC test: The CLIC test is a set of 10 questions involving number.

The Big Maths Beat That! **CLIC** challenges focus on Basic Skills, building from single digit addition through to more complex calculations. **CLIC** includes:

- **C**ounting
- **L**earn Its
- **I**t's Nothing New!

- Calculation

Of course we also include Column Methods, but we prefer the simple acronym of **CLIC!**

E.g. The four operations, doubling/halving, multiplying by 10/100, using decimals. Each child works on a CLIC test of a level appropriate to them and when they have achieved full marks for three consecutive weeks will move on to a higher level test, regardless of age or year group.



The SAFE test: The SAFE test is a set of 10 questions involving outer numeracy.

SAFE challenges cover Wider Maths (the rest of the maths curriculum). **SAFE** includes:

- Shape
- Amounts
- Fractions
- Explaining Data

Of course there is much more, but the simple acronym of **SAFE** is a great name!



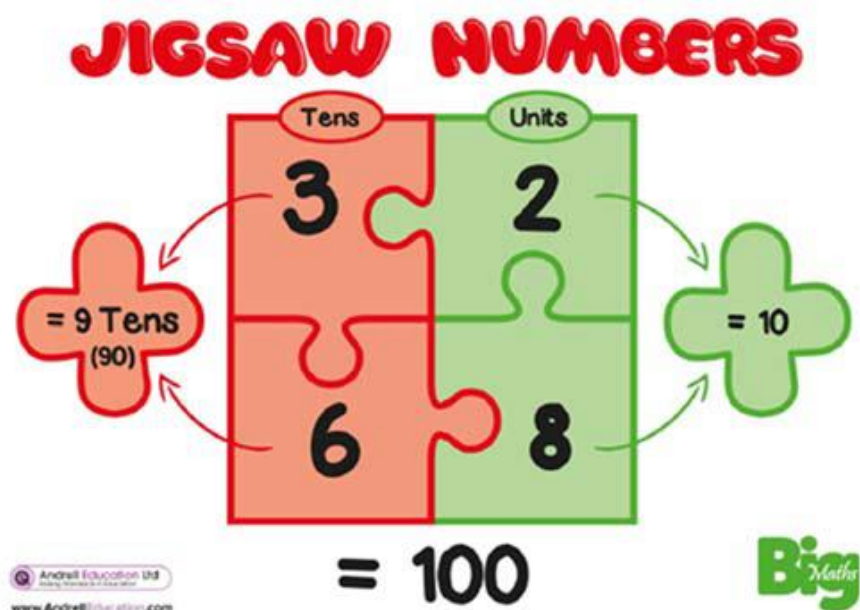
The Big Maths Beat That test (Learn Its): The Learn Its test is based on the children's weekly Learn Its. It is a timed test where the children are constantly challenged to increase their own score (literally..."Beat That!", where 'that' is their best ever score). The Learn Its section of **CLIC** focuses on learning and recalling number facts (multiplication tables and number bonds). The 'Learn Its' challenges include:

- Times tables
- Basic calculations
- Number bonds.

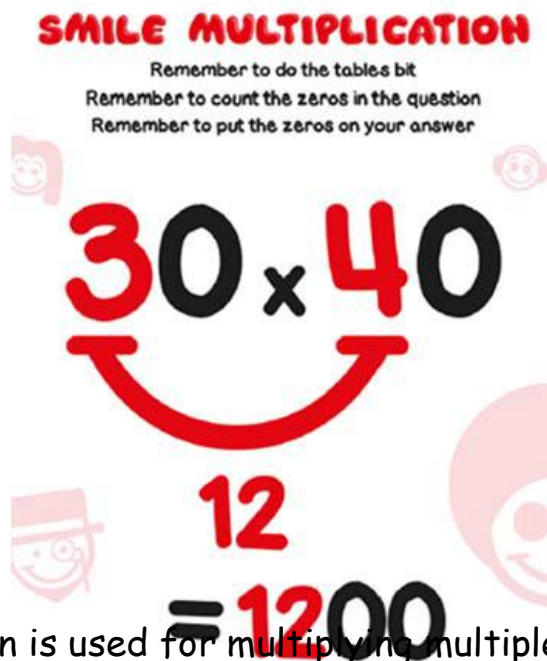
We call this section Learn Its because each one is a fact; **Just Learn It!**

Big Maths Strategies

Here are some examples of the strategies we use for calculation.



Jigsaw numbers are a way of adding pairs of numbers to equal 100 - what we have traditionally called 'place value', as in the diagram above.



Smile Multiplication is used for multiplying multiples of 10, linking numbers with a 'smile' as in the diagram above. The above illustration demonstrates that 30 x 40 can be calculated by knowing 3 x 4. As children begin to multiply multiples of 10, 100 etc. the zeros can look very complicated. Smile Multiplication simplifies this, reminding them to 'do the tables bit', count the zeros, then put the zeros on the answer. A lot easier!

COIN MULTIPLICATION

My full Coin Card

	x 32	
1	32	
2	64	
5	160	
10	320	
20	640	

The table is titled 'COIN MULTIPLICATION' and 'My full Coin Card'. It shows a multiplication table for the number 32. The first column lists the numbers 1, 2, 5, 10, and 20. The second column shows the results of multiplying these numbers by 32: 32, 64, 160, 320, and 640. The table is decorated with various UK coins (1p, 2p, 5p, 10p, 20p, 50p, 1p, 2p, 5p, 10p, 20p, 50p, 1p, 2p, 5p, 10p, 20p, 50p) scattered around the edges.

Children recognise the coins that we use every day. Coin Multiplication teaches them to take a number (usually a 2d number) and then find the 1st, 2nd, 5th, 10th, 20th, 50th and 100th multiples of that number. If we include the £2 coin on our coin card, that means they find the 200th multiple as well. Our job is to show children how all of these multiples can be found simply by:

- **multiplying by 10,**
- **halving and**
- **doubling.**



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Why use Big Maths?

Where schools use the CLIC folders to support Big Maths the following benefits will be felt:

- All children will receive a focussed and personalised daily up-levelling of their numeracy in a simple progressive structure that they can themselves understand.
This has the potential to transform levels of numeracy, and levels of numeracy confidence.
- All teachers will be providing common and consistent messages throughout the school. This provides children moving through the school with a smoother numeracy development journey and therefore more rapid progress.
- Children will be able to understand each new step on their journey because the Progress Drives and the teaching methods make the mathematical concepts easily accessible to all.
- Because curriculum links are made through CLIC on Your Planning it is easier for teachers to relate pupils' learning outcomes to assessment evidence.
- The Progress Drives provide all teachers with the subject knowledge needed for highly effective numeracy teaching. They also provide a common dialogue which enhances the quality of discussions and professional development activities in school.
- Sharing the Progress Drives with children enhances the 'assessment for learning' basis of Big Maths. Pupils can see their next steps and what they need to do next to make further progress. Children can also see the progress they are making and celebrate their achievements.

- Confidence levels for staff and children to understand numeracy development will be very high, and the strong belief that all children can become numerate will be passed on from staff to pupils.

How can you help?

- Help your child practice their Learn Its at home - a few minutes a day is all you need.
- Insist that numbers are written the correct way round.
- Come into school and volunteer to play some maths games with children or be a number ninja yourself.
- Encourage a positive attitude towards maths at home and in school.
- Ask your child's teacher for top tips and useful websites to use.