
	<h2>Why Maths?</h2>		<h2>Core Skills</h2>
<p>A message from Mrs Dunne, our Maths lead:</p> <p>We aim to make maths as interesting and as stimulating as possible, being creative and imaginative in our teaching choices and in constantly challenging children to explain their strategies using age appropriate mathematical vocabulary. We promote teaching maths in real life contexts so that the children understand the usefulness of the subject. We provide scaffolds for those children that need it and every lesson includes several layers of challenge. =</p>			
<h3>Design and Do</h3>			
<p>Maths is a core subject that links to subjects across the curriculum including Science, Design and Technology and History. At Darlinghurst, we want our children to think like mathematicians and develop a real love of maths and we believe that they can do this by applying their maths skills in all areas of the curriculum.</p> <p>Children start their journey in Maths in the Early Years, engaging in Maths through purposeful play and the exploration of numbers, shapes, measures and counting through a variety of contexts both inside and outside. From Key Stage 1, children develop their knowledge of Maths concepts through the progressive teaching of Mastery Maths. We have deliberately layered our lessons to consolidate core number skills at the beginning of each class. Mental strategies are consolidated through the use of a counting stick to secure times tables facts and games such as bingo, guess my number and whole class chanting.</p> <p>During lessons, children develop a deep conceptual understanding of mathematical concepts, to develop their mathematical thinking and to use the rich language and communication surrounding maths. We aim to give children the opportunity to master maths through problem solving and reasoning. Children have opportunities to represent their mathematical thinking in many different ways using concrete objects, models and images as well as using more traditional calculations and algorithms.</p> <p>The progression of Maths is mapped out across the following strands:</p> <ul style="list-style-type: none"> • Number: Place value • Number: Addition and Subtraction • Number: Multiplication and Division • Number: Fractions • Measurement • Shapes, Position and Direction • Statistics <p>Each Maths lesson starts with mental maths games and revision of times tables using a counting stick. This is followed by a 'number crunch' where arithmetic skills are practised. Children revise previously taught concepts in the 'show' before a new concept is introduced. Key vocabulary is shared and explained before the teacher explains a new concept 'learn'. Finally children are able to demonstrate the skill and apply their knowledge as part of the 'do' and are further challenged through a 'next step' at the end of the lesson.</p>			
<h3>Difference</h3>			
<p>Children gain a range of knowledge, skills and techniques in Maths that advance and deepen over time. Due to the connections made across the curriculum children are able to use and apply Maths to apply their skills in real-life concepts and enhance their understanding of other subjects such as Science and History.</p> <p>Our children learn to be successful learners through building on their number and arithmetic skills in order to be able to estimate calculations and to be more accurate in their work.</p>			

We have moved towards teaching more explicit mental strategies to strengthen the children's accuracy in answering calculations. We also adopt the CPA approach (concrete, pictorial, abstract) so that children fully comprehend the strategies being taught to them. We use the Education Endowment Fund research to decide how to best support and challenge children.

Over the course of the year, children will be given class and personalised targets, for example- add a two-digit number to a one-digit number. (see an example of a target card in images below). These are revisited each lesson so that every child knows what their next steps are.

We have generic maths working walls across Darlington academy which include the Maths concept of the week, Key vocabulary, Top tips and Times table champions for each year group. These are changed at least weekly or updated as each new mathematical concept is taught. There are weekly timetable rock star celebration assemblies in Years 3 and 4 to encourage learning the times tables.

The vast majority of our children enjoy maths lessons. All children believe they are taught maths well. They are all proud of the work they produce and are use mathematical resources to aid their learning. Children said that they particularly enjoy the mental maths games ie Fizz Buzz and Bingo. Reception classes also enjoy playing shops and building construction with 3D shapes.

'Achieving Excellence Together'

Reflections and Celebrations

Examples of Maths

In the Early Years, children have an understanding of numbers to 20 including recognising patterns when counting and recall number bonds up to 5 and some number bonds to 10, including double facts. Children can compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. They can explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

During Key Stage 1, children use concrete resources and pictures to deepen their understanding of addition, subtraction, multiplication and division before moving onto using partitioning and column methods to solve problems. They learn to count in 2s, 5s and 10s in order to support early recall of multiplication and division facts.

In Year 2 children produced a bar chart and table on whether party foods can be healthy.

By the end of this milestone children can read and write numbers to 100. They can add and subtract two digit numbers and use their knowledge of multiplication facts to solve multiplication and division problems. They can count in 2s, 5s and 10s and use this to read scales. They can identify halves, thirds and quarters and find these fractions of amounts. They know the value of different coins and can identify 2D and 3D shapes. They can read the time on a clock to the nearest 5 minutes.

As children advance across the school and particular in **Year 4**, they will be learning their times tables up to 12 x 12 (in preparation for the times table test and support learning new concepts in upper key stage 2). They will be applying their understanding of the four operations to more word problems and real-life contexts, drawing upon a range of strategies that have been taught.

In Year 3 the children had to calculate a cheap and healthy meal. In an art lesson they used a ruler and counted squares to produced illuminated letters.

By the second milestone, children can recall all times tables facts to 12 x 12. They can use the column method to add, subtract and multiply numbers. They can use different mental and written strategies to solve problems. They can count in multiples of 6, 7, 9, 25, 50, 100 and 1000. They can round numbers to the nearest 10, 100, 1000 and whole number. They can convert tenths and hundredths to decimals and

find the fractions of amounts. They can solve measure and money problems including time in the 12 and 24 hour clock.

During Upper Key Stage 2, we encourage to write in columns in their maths books in order to ensure work is well presented. We also offer more cross curricular maths opportunities during other lessons supporting their problem solving skills in real-life contexts such as cooking, shopping and data analysis.

Year 6 have reintroduced maths homework and children are returning their homework every Friday morning and marking it together with their maths teachers. Targeted children across several year groups have also been offered maths tutoring this term, the uptake is approximately 80%.
In Science, children recorded temperatures in the form of a table to work out the best insulator for a space suit. They also used rationing books to work out the food coupon needed for the typical food ration for a child during and after the World War 2. They also ordered events chronologically on a history timeline.

By the final milestone, children can read, write, order and compare numbers to 10,000,000. They can use long multiplication and division with numbers up to a four-digits with a two-digit number. They can perform mental calculations with mixed operations and solve multi-step word problems. They can add, subtract, multiply and divide fractions with different denominations. They can recall equivalents between fractions, decimals and percentages. Children can solve problems involving ratio and proportion. They can begin to use simple algebra to solve problems. They can calculate the perimeter and area of different shapes and of unknown angles. They can calculate and interpret the mean as an average.

Examples of parental and community engagement

Throughout the year, we hold Tea and Talks for parents offering guidance and support on different strategies we use to teach Maths including for EYFS, Key Stage 1 and Key Stage 2. Separate sessions run linked to TT Rockstars and the Multiplication Check for parents in year 4.

Useful websites

BBC Bitesize

BBC Bitesize has Maths lessons for every year group, including fun animated videos to explain concepts and quizzes. Choose your key stage, then year group.

[Maths - BBC Bitesize](#)

BBC Teach

BBC Teach, some great video stimulus on here for Maths. The maths songs are great ie Super movers for Key Stage 1. There are also counting activities and some great real life maths investigations.

[KS1 Maths - BBC Teach](#)

[KS2 Maths - BBC Teach](#)

Hit the Button

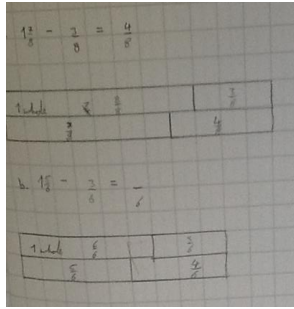
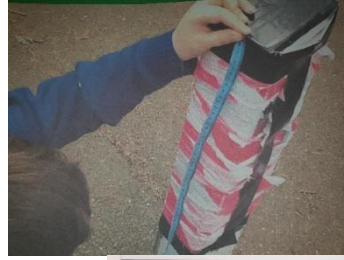
Times tables

[Hit the Button - Quick fire maths practise for 6-11 year olds \(topmarks.co.uk\)](#)

Times table Rock stars

[Times Tables Rock Stars \(trockstars.com\)](#) (your child will need their username and password)

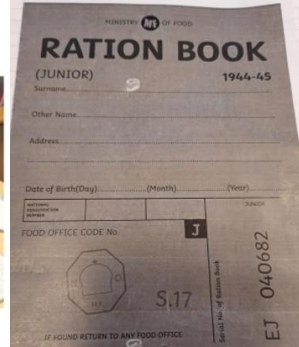
Maths Photo Gallery



Maths Oracy

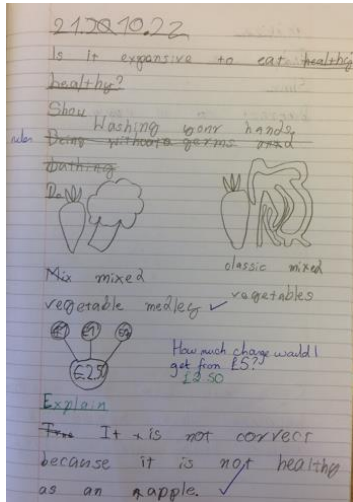


Encourage your children to speak in full sentences, using mathematical vocabulary



Time	Material	Material	Material	Material
	Bubble wrap	Kitchen foil	Cling foil	Cotton wool
Start	46°	52°	40°	46°
5 mins	44°	41°	37°	44°
10 mins	43°	39°	35°	43°
15 mins	41°	37°	33°	42°

Do	Start
DL Home timeline	Stone Age 7,000,000BC-2500BC Bronze Age 2500BC-43AD Iron Age 43AD-410AD Romans 410AD-410AD Anglo Saxons 410AD-1066AD Tudors and Stuarts 1555AD-1714AD Victorians 1837AD-1901AD WWI 1914AD-1918AD WWII 1939AD-1945AD Present day 2019



I can...	My Targets	Target	Date
Number			
Read numbers to 100.			
Write numbers to 100 in numerals.			
Partition two-digit numbers into tens/ones with or without resources.			
Add a two-digit number to a one-digit number e.g. 23+5.			
Subtract a one-digit number from a two-digit number e.g. 16-5.			
Add a two-digit number to tens e.g. 46+20.			
Subtract tens from a two-digit number e.g. 88-30.			
Explain my method for + and - using words, pictures or objects.			
Recall at least four of the number bonds for 10.			
Explain the related facts for the number bonds I know e.g. if 6+4=10 then 4+6=10 and 10-6=4.			
Count in twos, fives and tens from 0.			
Use my twos, fives and tens to solve problems.			
Read number lines and scales in divisions of ones, twos, fives and tens.			
Partition any two-digit number into different combinations of tens/ones and explain my thinking using words, pictures or objects.			
Add any 2 two-digit numbers using an efficient strategy, explaining my method using words, pictures or objects e.g. 46+35.			
Subtract any 2 two-digit numbers using an efficient strategy, explaining my method using words, pictures or objects e.g. 72-17.			
Recall all number bonds to and within 10.			
Use the number bonds I know to calculate bonds to and within 20 e.g. 16.			
7+3=10, then 17+3=20			
7-3=4, then 17-3=14			
14+3=17, then 3+14=17, 17-14=3 and 17-3=14			
Recall multiplication and division facts for 2, 5 and 10.			
Use the multiplication and division facts for 2, 5 and 10 to solve simple problems.			
Understand the relationship between multiplication and division facts.			
Identify $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ of a number or shape.			
Understand that all parts of a fraction must be equal parts of whole.			

