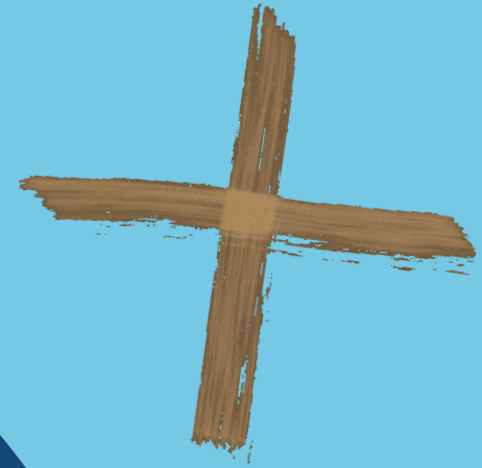




MATHS WORKSHOP



Orchard Academy

AGENDA

- Calculation Policy Overview
- How to help your child at home

WE ♥
MATHS



Year 3 Key Objectives

Key Curriculum Objectives and Assessment Criteria

Number and Place Value

I can recognise the place value of each digit in a 3-digit number

I can compare and order numbers from 0 to 1000; using $<$ $>$ $=$ signs

I can find 10 or 100 more or less than a given number

I can count from 0 in multiples of 4, 8, 50 and 100

I can read and write numbers to at least 1000 in numerals and in words

Calculations

I can add a 3-digit number and ones, tens, or hundreds

I can subtract 1's/10's/100's from a 3-digit number

I can add numbers with up to three digits (selecting the most efficient method)

I can subtract numbers with up to three digits (selecting the most efficient method)

I know and use facts from the 3, 4 and 8 multiplication tables

I can multiply numbers, including 2-digit numbers (selecting the most efficient method)

I can divide numbers, including 2-digit numbers (selecting the most efficient methods)

Fractions

I can count up and down in tenths

I can recognise, find and write fractions of a set of objects

I can compare and order unit fractions and fractions with the same denominator

I can add and subtract fractions with the same denominator within one whole

Geometry

I can identify horizontal, vertical lines and pairs of perpendicular and parallel lines

I can draw 2D shapes given their properties and make 3D models

I recognise that two right angles make a half-turn and three make a three quarter turn

Time

I can tell and write the time (12 and 24 hour) from an analogue clock

I know the number of seconds in a minute, days in a month/year/leap year

Measures

I can measure, compare, add and subtract mass in g and kg using scales

I can measure, compare, add and subtract lengths in mm, cm and m

I can measure, compare, add and subtract capacity in l and ml

I can measure the perimeter of simple 2D shapes

I can add and subtract amounts of money to give change, using both £ and p

Statistics

I can interpret and present data using bar charts, pictograms and tables

I can solve one and two step questions using information presented in scaled bar charts, pictograms and tables



Year 4 Key Objectives



Number and Place Value

I can recognise the place value of each digit in a 4-digit number

I can compare and order numbers beyond 1000; using $<$ $>$ $=$ signs

I can count in multiples of 6, 7, 9, 25 and 1000

I can round to the nearest 10, 100 or 1000 and decimals with 1 decimal place to the nearest integer

I can count backwards through zero to include negative numbers

Calculations

I can add numbers up to 4-digits (selecting the most efficient method)

I can subtract numbers up to 4-digits (selecting the most efficient method)

I can solve addition and subtractions 2-step problems

I can recall multiplication and division facts up to 12×12

I can use place value, known and derived facts to multiply and divide mentally

I can multiply 2 and 3-digit numbers by a 1-digit number using a range of methods

Fractions and Decimals

I can count up and down in hundredths

I can recognise and show using diagrams, families of common equivalent fractions

I can add and subtract fractions with the same denominator

I can recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{10}$, $\frac{1}{100}$'s

I can compare numbers and order numbers up to two decimal places

I can find the effect of dividing a 1-digit or 2-digit number by 10 and 100

I can solve measure and money problems involving fractions and decimals to 2 decimal places

Time

I can read, write and convert time between analogue and digital 12-hour and 24-hour clocks

I can solve problems and convert between hours to minutes; minutes to seconds; years to months and weeks to days

Statistics

I can solve comparison, sum and difference problems using information presented in bar charts, pictograms etc.

Position

I can plot specified points and draw sides to complete a given polygon

Measures

I can convert between different units of measurement

I can measure and calculate the perimeter of a rectilinear figure in cm and m

I can find the area of rectilinear shapes by counting squares

I can compare different measures, including money in £ and p

Geometry

I can compare and classify shapes, including quadrilaterals and triangles based on their properties

I can identify lines of symmetry in 2D shapes presented in different orientations

I can identify acute and obtuse angles, compare and order angles up to two right angles by size

Year 5 Key Objectives

Number and Place Value

I can read, write, order and compare numbers to at least 1,000,000

I can round any number up to 1,000,000 to the nearest 10, 100, 100, 1000, 10000 and 100000

I can interpret negative numbers in context, count forwards and backwards with $+ve$ and $-ve$ integers

I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

Statistics

I can solve comparison, sum and difference problems using information presented in a line graph

Position

I can identify, describe and represent the position of a shape following a reflection or translation

Geometry

I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles

I can estimate and compare acute, obtuse and reflex angles

I can identify angles at a point, a whole turn, a straight line and a half turn

I can draw given angles and measure them in degrees

Calculations

I can add and subtract mentally with increasingly large numbers

I can add and subtract whole numbers with more than 4 digits (selecting the most efficient method)

I can identify multiples find all factor pairs of a number and common factor pairs of two numbers

I can establish whether a number up to 100 is prime and recall prime numbers up to 19

I recognise and use square numbers and cube numbers, and the notation for squared and cubed

I can multiply numbers up to 4-digits by a 1-digit or 2-digit number

I can divide numbers up to 4-digits by a 1-digit number and interpret remainders appropriately

I can solve problems involving multiplication and division including scaling by simple fractions

Measures

I can convert between different units of metric measurement

I can measure and calculate the perimeter of composite rectilinear shapes in cm and m

I can calculate and compare the area of rectangles using standard units (cm^2 and cm^3)

Fractions, Decimals and

I can recognise mixed numbers and improper fractions and convert from one form to the other

I can compare and order fractions whose denominators are multiples of the same number

I can read and write decimal numbers as fractions

I can read, write, order and compare numbers with up to three decimal places

I can round decimals with two decimal places to the nearest whole number and one decimal place

I know percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$, $\frac{4}{5}$ and those fractions with a denominator a multiple of 10 or 25

Fraction Calculations

I can add and subtract fractions with denominators that are multiples of the same number

I can multiply proper fractions and mixed numbers by whole numbers

Time

I can complete, read and interpret information in timetables



Year 6 Key Objectives

Number and Place Value

I can read, write, order and compare numbers to at least 10,000,000

I can round any whole number to a required degree of accuracy

I can use interpret negative numbers in context and calculate intervals across zero

I can identify common factors, common multiples and prime numbers

I can multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places

Calculations

I can solve addition and subtraction multi-step problems in contexts

I can multiply multi-digit numbers up to 4-digits by a 2-digit whole number

I can divide numbers up to 4-digits by a 2-digit whole number and interpret remainders

I can use my knowledge of the order of operations to carry out calculations involving the four operations

I can use estimation to check answers to calculation and determine an appropriate degree of accuracy

I can multiply 1-digit numbers with up to 2 decimal places by whole numbers

Fractions, Decimals and Percentages

I can compare and order fractions, including fractions >1

I can recall and use equivalences between simple fractions, decimals and percentages

I can recall and use equivalences between simple fractions, decimals and percentages

I can solve problems involving the calculation of percentage and use of percentage comparisons

I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Geometry

I can compare and classify geometric shapes based on their properties and sizes

I can recognise and build simple 3D shapes, including making nets

I can find unknown angles in any triangles, quadrilaterals and regular polygons

I recognise angles where they meet at a point, are on a straight line, are vertically opposite and find missing angles

Measures

I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time

I can calculate the area of parallelograms and triangles

I can calculate, estimate and compare volume of cubes and cuboids

Fraction Calculations

I can add and subtract fractions with different denominators and mixed numbers using equivalent fractions

I can multiply simple pairs of proper fractions, writing the answer in the simplest form

I can divide proper fractions by whole numbers

Position

I can draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes

Algebra

I can use simple formulae

I can generate and describe linear number sequences

Statistics

I can interpret and construct pie charts and line graphs and use these to solve problems

I can calculation and interpret the mean as an average



CALCULATION METHODS

ADDITION

Example: $463 + 278$

You try: $263 + 698$

+ 200



YEAR 4 ADDITION

$$\begin{array}{r} 3467 \\ + 2278 \\ \hline \end{array}$$

You try: $4567 + 3802$

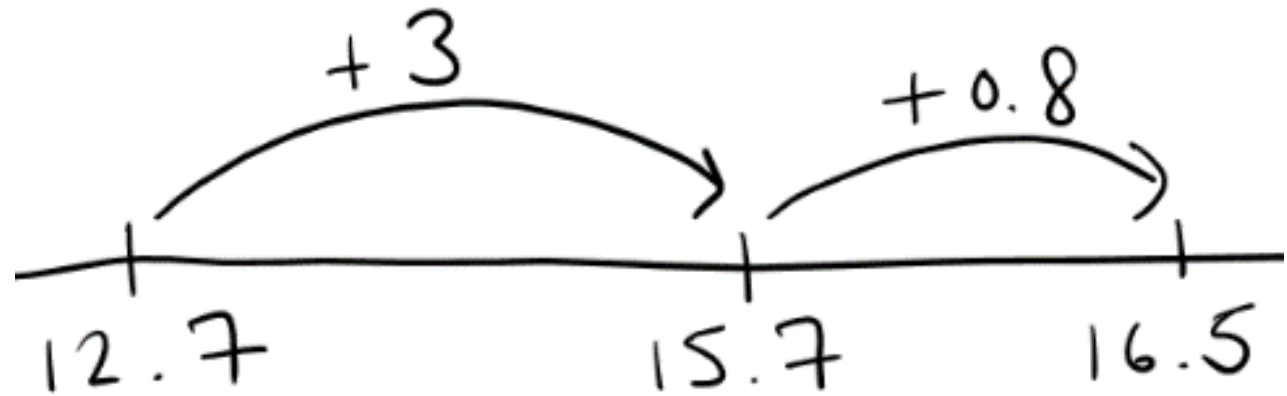


YEAR 5 ADDITION

Example: $365,406 + 72,845$

$$\begin{array}{r} 365,406 \\ + 72,845 \\ \hline 438,051 \end{array}$$

Example: $12.7 + 3.8$



YEAR 6 ADDITION

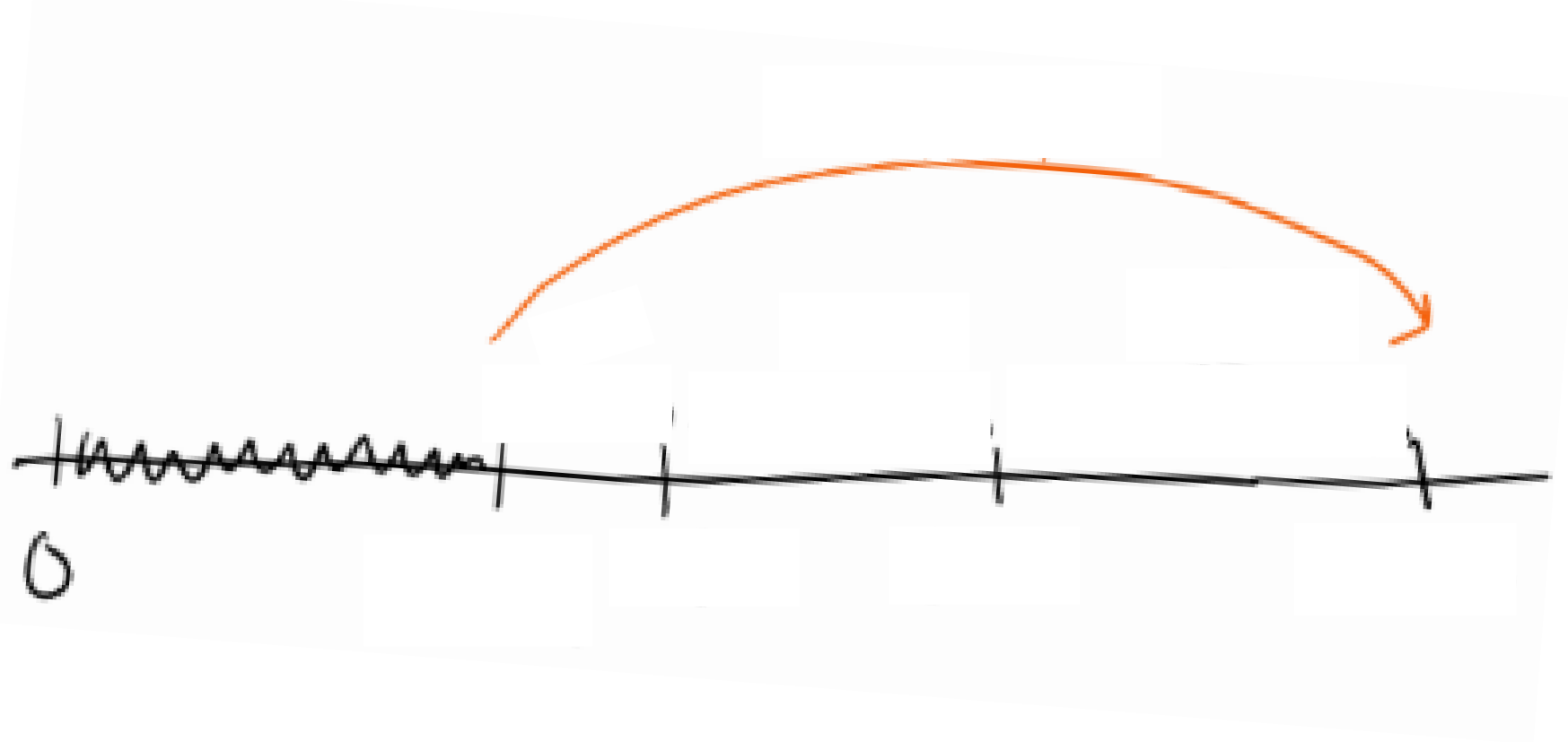
$$\begin{array}{r} 2.476 \\ + 0.715 \\ \hline 3.191 \\ \hline \end{array}$$

1 1



YEAR 3 SUBTRACTION

Example: 463 - 279



YEAR 4 SUBTRACTION

Example: $3467 - 2675$

You try: $5672 - 4821$

$$\begin{array}{r} 2000 \quad 1300 \\ \cancel{3000} \quad \cancel{300} \quad 160 \\ - 2000 \quad 600 \quad 70 \quad 5 \\ \hline 0 \quad 700 \quad 90 \quad 2 \end{array}$$



YEAR 5 SUBTRACTION

Example: 305,426 – 8,245

$$\begin{array}{r} \overset{2}{3} \overset{9}{0} \overset{3}{5} \overset{1}{4} \overset{1}{2} \overset{1}{6} \\ - 8 2 4 5 \\ \hline 2 9 7 1 8 1 \end{array}$$

You try: 543,972 – 6,389



YEAR 6 SUBTRACTION

Example: $2.415 - 0.737$

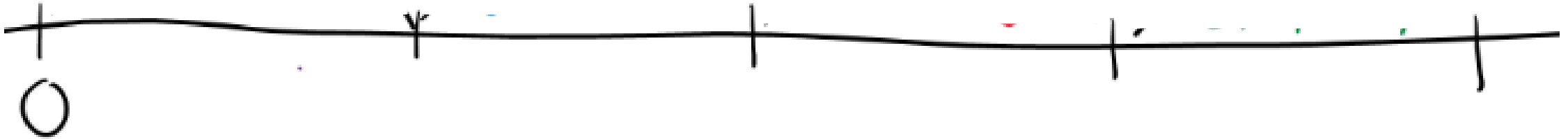
$$\begin{array}{r} \\ \\ - \\ \hline \\ \hline \end{array}$$

Handwritten calculation showing the subtraction of 0.737 from 2.415. The result is 1.678. The digits are color-coded: 1 (blue), 6 (green), 7 (purple), 8 (pink). Borrowing is indicated by a blue '1' above the 2, a purple '13' above the 4, and a pink '10' above the 1. The 4 is crossed out with a purple slash, and the 1 is crossed out with a pink slash.



YEAR 3 MULTIPLICATION

Example: 6×34



YEAR 4 MULTIPLICATION

Example: 4×324

\times	300	20	4
4			

=



YEAR 5 MULTIPLICATION

You try: 423×23

$$326 \times 53$$

X	300	20	6	
50	15000 + 1000 + 300 = 16300			
3	900 + 60 + 18 = 978			
				<u>17278</u>



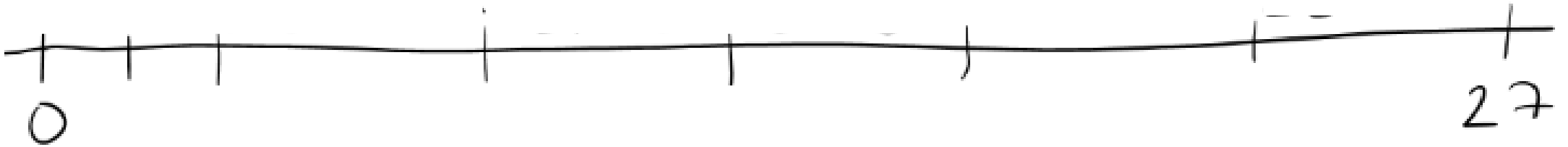
YEAR 6 MULTIPLICATION

$$\begin{array}{r} 4267 \\ \times \quad 34 \\ \hline 17068 \quad (4 \times 4267) \\ 28010 \quad (30 \times 4267) \\ \hline 145078 \end{array}$$



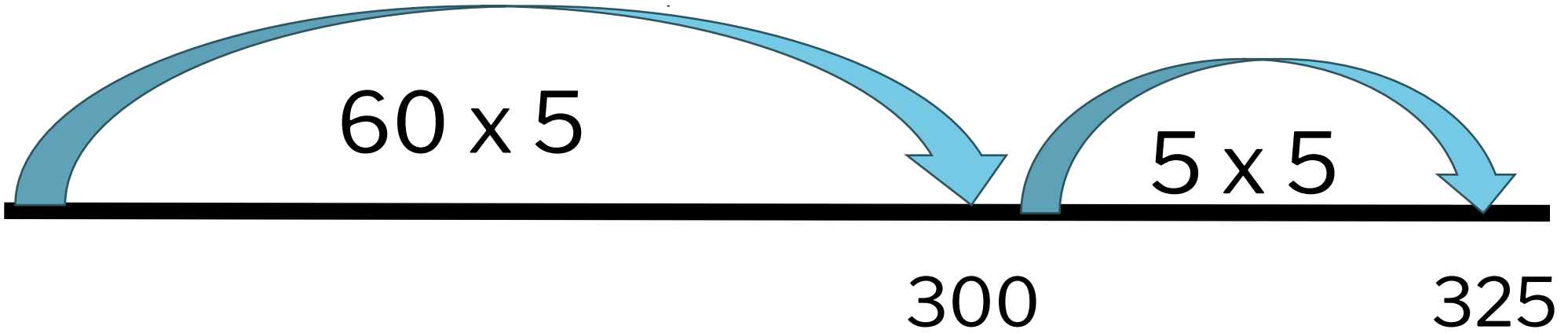
YEAR 3 DIVISION

$$27 \div 5 =$$



YEAR 4 DIVISION

$$325 \div 5 = 65$$



YEAR 5 DIVISION

$$3276 \div 4 =$$

$$4 \overline{) 3276}$$



YEAR 6 DIVISION

22

$$672 \div 21 =$$

$$21 \overline{) 672}$$

You try: $824 \div 16$



HOW TO HELP AT HOME

1. Ask your child to teach you maths

If a teacher encourages your child to use one approach to doing a maths calculation, and a parent encourages the child to use a different approach at home, the child may get confused between both approaches.



HOW TO HELP AT HOME

2. Encourage your child to be independent in maths

Very often, children wait for an adult such as a parent or teacher to tell them that a solution to a problem is correct or incorrect.

It's better for the child if they can be confident in their own solution. Therefore, if your child asks if a question is right or wrong, a response might be, "Give me a reason why you think it's right" or "How can you be sure that it's right?"





HOW TO HELP AT HOME

3. Play games that encourage mathematical thinking
For younger children, Jenga is good, 'shut the box' and dominoes are good games to play.

Sumdog is a great app to use with your children!

Times Tables Rock Stars is also fun and will help your children with times tables.



HOW TO HELP AT HOME

4. Promote a positive attitude to maths!

Often you hear people say “Oh, I was never any good at maths myself in school.”

Such comments give pupils the idea that maths is difficult or that it is acceptable to be a low achiever in maths.

The comments also give the false impression that maths is something you’re either good at or you’re not.

Parents are in a good position to let their children know that anyone can be good at maths, and that knowledge of maths is helpful in life generally, because it opens up doors to some exciting career options.

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