

# Helping your child with Maths at home YEAR 2



#### <u>Addition</u>

# Recording Maths in Year 2

Year 2	Counting on in multiples of 10 from any 2-digit number, eg. What is 20 more than 34?	Use bead strings, numicon and base 10 frames to model number	See above plus number lines counting in 10's
	Quick recall of number bonds within 20 e.g.	bonds to 10 and within	0 10 20 30 40
	Adding a number in different ways up to 10	20, e.g.	
		16+7 (add 4 to next 10),	Cuisenaire
	How many different ways can you make a total of 13?	etc.	
	3+10=13 11+2=13 6+7=13 8+5=13	Use 100 squares and bead strings to model	Number lines
	Derive and use related facts up to 100 e.g.	counting in multiples of	Beadstrings
	4+6=10, so 40+60=100 (developing fluency)	10.	0000000-00000-
	Children know and recognise doubles, and can	Relate subtraction as the	Multi-link
	use doubles and near doubles	inverse of addition, using	
	e.g. start to think about 12 + 13 as double 12 +	number trios / triangles	
	1	to model related facts.	
	Adding purphers: A two digit purpher and a	Use the inverse to check	
	cingle digit numbers. A two-digit number and a	calculations.	Pasa 10 hundles, e.g. satten huds er
	number and tens e.g. 23+20 Adding 3 one-		straw
	digit numbers e.g. $6+7+4=17$ (done in any	Drawing an empty	50.000
	order e.g. 6+4+7=17)	number line helps	Tens frames
		children to record the	
		steps they have taken in	
		their calculation (start at	
	Adding 2 two-digit numbers e.a. 47 + 25 =	47, add 20 and then add	
	My sunflower is 47cm tall. It grows another 25	5). This is more efficient	
	cm. How tall is it now?	that counting on in ones.	
		Allow children to choose	
		the most appropriate	
		jumps along the number	
		line.	

Year 2 Counting and mental skills	<ul> <li>Counting back in multiples of 10 from any 2-digit number e.g. What is 20 less than 34?</li> <li>Quick recall of subtraction facts within 20 <ul> <li>e.g. 17-3, 9-2, 18-9</li> </ul> </li> <li>Derive and use related facts up to 100 <ul> <li>e.g. 9-2=7, so 90-20=70</li> </ul> </li> <li>Subtracting numbers: □ <ul> <li>A two-digit number and a single digit number, e.g. 37-5 □</li> </ul> </li> <li>A two-digit number and tens, e.g. 43-20</li> </ul>	Children need to be able to take away and find the difference – later on they should learn which strategies are most efficient for the numbers given.	See Above

#### **Subtraction**

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E	N	Counting back in multiples of 10 from any 2- digit number e.g. What is 20 less than 34?	Children need to be able	ITP 'difference'	
	Year 2 Counting	algit hamber e.g. what is 20 less than 54:	the difference – later on		
	and mental	Quick recall of subtraction facts within 20 e.g. 17-3, 9-2, 18-9	they should learn which strategies are most	Bead string and bar (inc double bars)	
	skills		efficient for the numbers		
		Derive and use related facts up to 100 e.g. 9-2=7, so 90-20=70	given.	Numicon	
		Subtracting numbers: D		Counters, comparing objects	
		A two-digit number and a single digit		ITP 'Number Facts'	
		number, e.g. 37-5 🛛			
		<ul> <li>A two-digit number and tens,</li> </ul>		Number lines intervals in ones	
		e.g. 43-20		Number lines intervals of 10	
				Blank number lines (starting at numbers	
				other than 0)	

#### **Multiplication**

Year 2 Developing Written	Solve problems involving division, using materials, arrays, repeated addition, mental methods and multiplication and division	Drawing an array (3 rows of 4 or 3 columns of 4) gives	ITP Number dial
Methods	facts, including problems in contexts.	children an image of the answer. It	ITP Multiplication Facts
	3 x 5= Read as 'three multiplied by five,' or 'three times five', or 'three five times' A	also helps develop the understanding	Arrays
	chew costs 5X3 55 chews cost? 5X3	that 4x3 is the same as 3x4 (it's	Bar modelling, e.g. 4X5=20
		commutative).	
		Use a number line	
	4 x 5: Shown as repeated steps on a number line	to make the link between repeated addition and multiplication.	Excel array creator (spreadsheet)
	$\begin{array}{c} \hline 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1$	firstly on a marked number line with	Bead strings
		steps of equal size, then leading to use	Cuisenaire
		of a blank number	Number trios
	How many fingers are there altogether on six hands?	line.	Number lines (marked intervals)
	5 x 6 = 30	At this stage, children develop	
		memory of	

How many fingers are there altogether on	of a blank number	
six hands?	line.	Number lines (marked intervals)
5 x 6 = 30	At this stage, children develop memory of multiplication facts to help with mental	Blank number lines Counting sticks
	calculations. Children are encouraged to use mental recall, and consider the most	
	efficient strategy (eg it wouldn't be appropriate to draw a number line	
	if I know that 4 x 5 is 20) The relationship between	
	multiplication and division is reiterated using	
	arrays and number trios.	

#### **Division**

Solve problems involving division, using	Pupils work with a	Number trios
materials, arrays, repeated addition, mental	range of materials	10
methods and multiplication and division	and contexts in	2 5
facts, including problems in contexts, e.g.	which	
	multiplication and	
12÷3 Read as '12 divided into 3 groups'	division relate to	Number lines (intervals of one )
and '12 divided into groups of 3'	grouping and	
	sharing discrete	Arrays
There are 12 apples and you can fill each	and continuous	
basket with 3 of them. How many baskets	quantities, to	ITP ' <u>Multiarray</u> '
will you need?	arrays and	ITP 'Grouping'
	repeated addition.	
0125456784161112	Children will use	TTP 'Remainders'
	practical and	
The based has will have shildeen with	Informal written	Array creator spreadsneet
inte bead bar will help children with	methods including	Read strings and bars
interpreting division calculations such as 12	calculations with	Bead strings and bars
÷ 5 as now many 5s make 12?	Children use the	•••• •••• ••••
Can you give two multiplication and two	children use the	
division sentences to describe this array?	division in number	
$8 \div 2 = 4$	sentences and	
8 ÷ 4 - 2	understand it as	
$2 \times 4 = 8$		
	Solve problems involving division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts, e.g. $12 \div 3$ Read as '12 divided into 3 groups' and '12 divided into groups of 3' There are 12 apples and you can fill each basket with 3 of them. How many baskets will you need? The bead bar will help children with interpreting division calculations such as 12 $\div 3$ as 'how many 3s make 12?' Can you give two multiplication and two division sentences to describe this array? $8 \div 2 = 4$ $8 \div 4 = 2$ $2 \times 4 = 8$	Solve problems involving division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts, e.g. $12 \div 3$ Read as '12 divided into 3 groups' and '12 divided into groups of 3' There are 12 apples and you can fill each basket with 3 of them. How many baskets will you need? The bead bar will help children with interpreting division calculations such as 12 $\div 3$ as 'how many 3s make 12?' Can you give two multiplication and two division sentences to describe this array? $8 \div 2 = 4$ $8 \div 4 = 2$ $2 \times 4 = 8$

4 x 2 = 0	both sharing and	
4 X Z = 0		
	grouping.	
Use number trios to help to calculate the		
value of an unknown in a num	Children will begin	
(e.g+2 =5)	to apply their	
	knowledge of	
	multiplication facts	
	to work out	
	answers mentally	
	e.g. 'I know that	
	2x3 = 6. So to	
	share 6 into 2	
	groups, there will	
	be three in each	
	group'.	
	The relationship	
	between	
	multiplication and	
	division is re-	
	enforced using	
	arrays, and	
	number trios.	

#### Practising Number Facts

Its important children learn number bonds to 10 e.g. 4 + 6 = 10; 3 + 7 = 10 and number bonds to 20 e.g. 14+6 = 20; 12 + 8 = 20 by heart.

- Play 'ping pong' to practice components with your child. You say a number and they reply with how much more is needed to make 10, 20, 100 or 1000.
- Encourage your child to answer quickly without counting or using fingers. E.g. make 100 you shout 40 they shout 60.
- Throw two dice. Ask your child to find the total of the numbers (+), the difference between them (-) or the product (x).





#### Counting and Place Value

Counting forms an important part of the calculation children have to do every day. With good counting skills, children can add, subtract, multiply and divide.

- Going Up and Down Your Stairs Pick a number for the bottom step. Then count in tens or hundreds going up. Counting in hundreds can be done in grams and millimetres as well. Pick a bigger number for the top step and count backwards as you go down the stairs. (For some, this can be done using decimals or even move into negative numbers).
- Counting in regular steps going up or down stairs can help with times tables. What number will we be on when we reach the 6th step? What number is at the top/bottom step? How many steps to reach 28 if we count in 4s? If we count in 200g steps, when will we reach 1kg?
- Car journeys Choose the colour of a car. Each time you see a car of your colour, look at the number plate. The person who has seen the largest/smallest number on a number plate is the winner. What is the number on the plate? What is this to the nearest 10 or 100 or 1000? How many more would you need to reach the next multiple of 10, 100 or 1000?





#### <u>Play number games</u>

Play games like snakes and ladders, bingo, top trumps, snap, jigsaw puzzles, anything that might involve logic and counting. Sneak some counting games into their Christmas stocking!

Other Good Games to Play

- Uno good game for recognising and matching numbers
- Dominoes supports counting and associating patterns with numbers
- Snakes and Ladders counting numbers up to 100
- Scrabble adding, multiplying (doubling, trebling) and good for vocabulary development and spelling.
- Monopoly good for handling money, paying using notes, giving change.
- Yahtzee a good game for adding, multiplying and probability.





#### <u>Multiplication tables</u>

Helping your child to learn multiplication facts and regularly going over them will benefit them enormously. They should learn to recite them in order as well as give 'quickfire' answers when they are jumbled up (e.g. "What are eight two's?", "How many two's make 12?"). This can be done on car journeys or whenever there is a spare 5 minutes.



By the end of Year 2, it is hoped that your child will know their 2, 5 and 10 times tables.



<u>2 times</u> table	<u>5 times</u> table	<u>10 times</u> table
1 × 0 = 0	1 × 0 = 0	1 × 0 = 0
1 x 2 = 2	1 × 5 = 5	1 × 10 = 10
2 × 2 = 4	2 × 5 = 10	2 × 10 = 20
		3 × 10 = 30
		4 × 10 = 40
		5 × 10 = 50
		6 × 10 = 60
		7 × 10 = 70
		8 × 10 = 80
		9 × 10 = 90
		10 × 10 = 10

<u>Time</u>

Practise telling the time with your child. Use both digital and analogue clocks. Ask your child to be a 'timekeeper' - e.g. tell me when it is half past four because we are going swimming.

- Use a stop clock to time how long it takes to do everyday tasks -e.g. how long does it take to get dressed. Encourage your child to estimate first.
- Use a TV guide. Ask your child to work out the length of their favourite programmes. Can they calculate how long they spend watching TV each day/week?
- Use a bus or train timetable. Ask your child to work out how long a journey between two places should take. Go on the journey. Do you arrive earlier/later than expected? By how much?





#### Measures

- Practise measuring the lengths and heights of objects in metric measurements.
- Help your child use different rulers or tape measures correctly. Encourage them to estimate before measuring. Compare measurements in metric and imperial.
- Let your child help with the cooking. Help them to measure ingredients accurately. Talk about what each division on a scale represents.
- Choose some food items out of the cupboard. Try to put the objects in order of weight by feel alone. Then check by looking at the weights on the packets

Using Recipes - Recipes often suggest how many people you can feed or how many items you can make. If the recipe is for 8 people, can you make it for 4? If the recipe is for 8 biscuits, have we got enough ingredients to make 16? Will there be any biscuits/cakes left for you to give to your teacher?



#### <u>Shape</u>

- You could take your child on a 'shape walk' around the supermarket to see what shapes they can spot. The shapes they may recognise in Year 2 as well as the old familiar ones are:
- 2D: pentagon (5 sides) hexagon (6 sides) octagon (8 sides)
- 3D: sphere, cube, cuboid, pyramid, cylinder, cone
- Shopping gives children the opportunity to spot and name shapes, especially 3-D shapes (e.g. cubes, cylinders, cuboids, spheres, prisms, cones, pyramids etc.).
- Choose a shape of the week e.g. a square. Look for this shape in the environment. How
  many of these shapes can your child spot during the week, at home and when you are
  out? Ask your child to describe the shape to you.
- At home, or when you are out, look at the surface of shapes. Ask your child what shape is this plate, this mirror, the bath mat, the tea towel, the window, the door, the red traffic light, and so on.
- Play 'guess my shape'. You think of shape. Your child asks questions to try to identify it but you can only answer 'yes' or 'no'.
- Hunt for right angles around your home. Can your child spot angles that are bigger or smaller than a right angle? 
   Look for symmetrical objects. Help your child to paint or draw symmetrical pictures/patterns.





#### Money

Receiving (and spending!) pocket money can make children very keen learners in this area! Use any shopping trips to encourage your child to be able to:

- Recognise all the coins
- Total and write amounts that are over £1
- Work out change that should be given.

#### Shopping maths

After you have been shopping, choose 6 different items each costing less than £1. Make a price label for each one, e.g. 39p, 78p. Shuffle the labels. Then ask your child to do one or more of these.

- Place the labels in order, starting with the lowest.
- Say which price is an odd number and which is an even number.
- Add 9p to each price in their head.
- Take 20p from each price in their head.
- Say which coins to use to pay exactly for each item.
- Choose any two of the items, and find their total cost.
- Work out the change from £1 for each item.





# Ideas to help your child with Maths at home







# Props around the house

Ideas taken from Maths for Mums and Dads Eastaway, R. and Askew, M. (2010)

- A prominent clock- digital and analogue is even better. Place it somewhere where you can talk about the time each day.
- A traditional wall calendar-Calendars help with counting days, spotting number patterns and
- Board games that involve dice or spinners-helps with counting and the idea of chance
- A pack of playing cards- Card games can be adapted in many ways to learn about number bonds, chance, adding and subtracting
- A calculator- A basic calculator will help with maths homework when required, there are also many calculator games you can play, too.
- **Measuring Jug**-Your child will use them in school, but seeing them used in real life is invaluable. Also useful for discussing converting from metric to imperial
- Dried beans, Macaroni or Smarties- for counting and estimating
- A tape measure and a ruler- Let your child help when measuring up for furniture, curtains etc
- A large bar of chocolate (one divided into chunks)- a great motivator for fractions work
- Fridge magnets with numbers on- can be used for a little practice of written methods
- Indoor/outdoor Thermometer- especially useful in winter for teaching negative numbers when the temperature drops below freezing
- **Unusual dice** not all dice have faces 1-6, hexagonal dice, coloured dice, dice from board games all make talking about chance a little more interesting
- A dartboard with velcro darts- Helps with doubling, trebling, adding and subtracting.

# How can I help at home?

- Play games using two dice and encourage child to say how many spots without counting. Talk to children about spotting patterns in the dice numbers eg a 5 is made up of 4 and 1 or a 6 is two threes.
- When children give an answer, ask "How did you know?". "How did you work that out?" or "Can you explain what you did?"
- Deliberately make mistakes. Children need to understand mistakes are normal and everyone makes them eg saying 3 multiplied by 5 equals 20. Ask children to explain what you did wrong.
- Hide numbers around the house or garden for children to find. Give children a total number they have to make and ask them to find two numbers to go together to make it eg 50 and 5.
- Encourage children make up their own games and decide how to score points.
- Count in steps of 2, 5 and 10 eg using coins.
- Play 'shops' and ask children to add totals and give change.
- Point out money symbols in shops pounds (£) and pence (p).

- Play 'shops' and ask children to add totals and give change.
- Point out money symbols in shops pounds (£) and pence (p).
- Ask children to divide things into halves and quarters fractions of a whole such as pizza, fractions of amounts, such as sweets etc. Encourage mathematical thinking by deliberately making the fraction unequal and asking if it shows halves or quarters.
- Talk about time. Talk about what time they go to bed, go to school etc. Ask time questions about how long until it's time for bed etc.
- Allow children to measure ingredients for baking using scales or measuring jugs.
- Sing number songs; there are lots of songs for times tables, counting in steps and doubles on YouTube.
- Practise times tables in fun ways such as online games or by joining in with BBC Supermovers https://www.bbc.co.uk/sport/supermovers/42612496
- Talk about shapes on the faces of 3D objects, eg circles on cylinders. Point out 3D shapes in real life, eg spheres (balls), cylinders (tin cans, vases, Amazon Echo), triangular prism (Toblerone box), cubes and cuboids (dice, boxes).