 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 ? <br> Quick recall of number bonds within 20 e.g. Adding a number in different ways up to 10 <br> How many different ways can you make a total of 13 ? $3+10=13 \quad 11+2=13 \quad 6+7=13 \quad 8+5=13$ <br> Derive and use related facts up to 100 e.g. $4+6=10$, so $40+60=100$ (developing fluency) <br> Children know and recognise doubles, and can use doubles and near doubles <br> e.g. start to think about $12+13$ as double $12+$ 1 <br> Adding numbers: A two-digit number and a single digit number, e.g. $37+8 \mathrm{~A}$ two-digit number and tens, e.g. $23+20$ Adding 3 onedigit numbers, e.g. $6+7+4=17$ (done in any order, e.g. $6+4+7=17$ ) | Use bead strings, numison and base 10 frames to model number bonds to 10 and within 20 e.g. <br> $16+7$ (add 4 to next 10 ), etc. <br> Use 100 squares and bead strings to model counting in multiples of 10. <br> Relate subtraction as the inverse of addition, using number trios / triangles to model related facts. Use the inverse to check calculations. <br> Drawing an empty number line helps children to record the steps they have taken in their calculation (start at | See above plus number lines counting in 10's <br> $\begin{array}{lllll}0 & 10 & 20 & 30 & 40\end{array}$ <br> Cuisenaire <br> Number lines <br> Beadstrings <br> $000000-0000-$ <br> Multi-link <br> Base 10 bundles, e.g. cotton buds or straw <br> Tens frames |
| :---: | :---: | :---: | :---: |
|  | Adding 2 two-digit numbers e.g. $47+25=$ My sunflower is 47 cm tall. It grows another 25 cm . How tall is it now? | 47, add 20 and then add <br> 5). This is more efficient that counting on in ones. Allow children to choose the most appropriate jumps along the number line. |  |



| Year 2 Counting and mental skills | Counting back in multiples of 10 from any 2-digit number e.g. What is 20 less than 34 ? <br> Quick recall of subtraction facts within 20 e.g. 17-3, 9-2, 18-9 <br> Derive and use related facts up to 100 e.g. $9-2=7$, so $90-20=70$ <br> Subtracting numbers: <br> - A two-digit number and a single digit number, e.g. 37-5 <br> - A two-digit number and tens, e.g. 43-20 | 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



## Multiplication



| $5 \times 6=30$ |
| :--- | :--- | :--- |
| six hands? many fingers are there altogether on | | of a blank number |
| :--- |
| line. |
| At this stage, |
| children develop |
| memory of |
| multiplication facts |
| to help with mental |
| 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 $4 \times 5$ |
| is 20) |
| The relationship |
| between |
| multiplication and |
| division is |
| reiterated using |
| arrays and number |
| trios. |

## Division

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| Year 2 Developin g Written Methods | Solve problems involving division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts, e.g. <br> $12 \div 3$ Read as ' 12 divided into 3 groups' and '12 divided into groups of 3 ' <br> There are 12 apples and you can fill each basket with 3 of them. How many baskets will you need? <br> The bead bar will help children with interpreting division calculations such as 12 $\div 3$ as 'how many 3 s make 12 ?' <br> Can you give two multiplication and two division sentences to describe this array? $\begin{gathered} 8 \div 2=4 \\ 8 \div 4=2 \\ 2 \times 4=8 \end{gathered}$ | Pupils work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and repeated addition. <br> Children will use practical and informal written methods including calculations with remainders. Children use the symbol for division in number sentences, and understand it as | Number trios <br> Number lines (intervals of one ) <br> Arrays <br> ITP 'Multiarray' <br> ITP 'Grouping' <br> ITP 'Remainders' <br> Array creator spreadsheet <br> Bead strings and bars |


| $4 \times 2=8$ |  |
| :--- | :--- | :--- | :--- |
| Use number trios to help to calculate the <br> value of an unknown in a num <br> (e.g. $\quad \div 2=5$ ) | both sharing and <br> grouping. <br> Children will begin |
| 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. |  |$\quad$.

## 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 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 $4 s$ ? If we count in 200 g steps, when will we reach 1 kg ?
- 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 ?


## Play number games

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.

YAHTEE LABGE PBINT SCORE SHEETS


## Multiplication tables

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.


| $\frac{2 \text { times }}{\text { table }}$ |
| :---: |
| $1 \times 0=0$ |
| $1 \times 2=2$ |
| $2 \times 2=4$ |


| $\frac{5 \text { times }}{\text { table }}$ |
| :--- |
| $1 \times 0=0$ |
| $1 \times 5=5$ |
| $2 \times 5=10$ |


| $\frac{10 \text { times }}{\underline{\text { table }}}$ |
| :--- |
| $1 \times 0=0$ |
| $1 \times 10=10$ |
| $2 \times 10=20$ |
| $3 \times 10=30$ |
| $4 \times 10=40$ |
| $5 \times 10=50$ |
| $6 \times 10=60$ |
| $7 \times 10=70$ |
| $8 \times 10=80$ |
| $9 \times 10=90$ |
| $10 \times 10=100$ |

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



## Shape

- 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? L 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 $9 p$ 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



## Measuring

- Cooking- weighing and following instructions
- Measure yourself! - make a height strip. Keep a graph to show your growthl How much have you grown?
- Measure stuff! - use a tape measure
- Telling the time-how long until...? Analogue /digital time, Days of the week, dates, keep a calendar/



## Picnic or Party maths:

- Preparing food for a group of people is a real problem solving opportunity; how many cups can we fill with one jug, how many pieces of pizza can we cut from each one? A great opportunity to use terms like 'half' 'quarter' 'double' and put those tables into practice.



## Shopping games:

- Set up a mini supermarket in the kitchen and give the children some real money to go shopping with.
- Change can be the trickiest concept and needs to be taught in 'real' shopping activities which can be done really well at home.


## hapes everywhere

- Shopping Shape Sort; let your child loose on the packages and sort them into cuboids, cylinders, cubes
- 2-D shape pictures and patterns
- Which shapes can you draw? you will need a ruler for some of them!


## 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).

