



A guide to helping your child with mental maths skills

The information in this booklet will guide you in how best to help your child with their mental mathematical calculations. The booklet outlines essential number knowledge and provides a wide variety of ways of helping your child at home. It also includes a selection of websites, which your child may enjoy and benefit from.

The National Curriculum outlines a clear strategy where much learning time is spent on mental calculation strategies based on mental recall of mathematical facts. Children are encouraged to consider, 'Can I do this in my head with just a few jottings?', and are taught mental strategies to help them achieve this. A secure and flexible mental mathematical knowledge is essential for success in formal written methods and complex problem solving.

Essential mental number knowledge

- Number bonds for all numbers to 10 and 20.

All the number pairs to make all the numbers to 20.

For example all the pairs of numbers to make 8 are:

$$7 + 1 \qquad 1 + 7$$

$$6 + 2 \qquad 2 + 6$$

$$5 + 3 \qquad 3 + 5$$

$$4 + 4$$

- Times Tables.

These are normally learnt in the following order:

2 X, 5 X and 10 X

3 X, 4 X

6 X, 8 X

7 X, 9 X

11X,12X

Children need to be able to recall their times tables out of order and be able to use them to find division facts.

For example:

$$4 \times 3 = 12$$

Therefore...

$$12 \div 3 = 4$$

Little and often is the best strategy for learning these number facts. A daily quiz before or after school or in the car on the way to an activity is ideal. Once learnt they will not be forgotten and will be forever useful!

Calculating Mentally

Children will use different strategies for calculating including:

- Partitioning (breaking up the numbers into their parts, e.g. tens and ones)
- Counting-up
- Counting-back
- Using multiples of ten and hundred
- Use what they know

Key Mental Maths Learning Opportunities



Time

It is essential that children know how to tell the time but this is a skill which takes time! Lots of practise at home really helps. Start with O'clock and half-past, then quarter past and quarter to, followed by 5 minute intervals until finally minute intervals.

- Encouraging children to tell the time themselves from their own watch or clocks at home.
- Using both analogue and digital clocks.
- Calculating how long a journey will take looking at train/bus/airline timetables.
- Estimating the length of time for a car journey, then timing it to see whose estimate was closest.
- Using TV guide to calculate the length of programmes.
- Programming the video or the microwave.
- Looking at the posting times on the post box.
- Discussing events in the day e.g. teatime, bed time, bath time.
- Setting an alarm clock.
- Asking which is the next, or previous, day or month.
- Discussing how many months until Christmas or a birthday and how many days that will be.



Money

Not only is the accurate use of money an essential life skill it also mirrors our numerical system so is essential to the understanding of number.

Children need to know:

£1 = 100p



- Looking and reading prices
- Calculating change – which coins, finding different combinations.
- Counting pocket money.
- Estimating the final bill at the end of shopping while waiting at the check-out.
- Looking at supermarket deals, ‘buy one get one free’ and working out how much is saved.
- Calculating the cost of the family going to the cinema, swimming baths, etc.
- Calculate how much the cost would be if it were half price or 10% off.
- How much more is one footballer paid than another?



Measures

Children need to know:

$$1\text{kg} = 1000\text{g}$$

$$1\text{km} = 1000\text{m}$$

$$1\text{metre} = 100\text{cm}$$

$$1\text{cm} = 10\text{mm}$$

$$1\text{ litre} = 1000\text{ml}$$

- Cooking – measuring ingredients using different scales
- Measuring ingredients using different types of spoons
- Reading labels on bottles, packets, in order to discuss capacity and weight.
- Calculating distances in a journey e.g. how much further? Can they describe the distance in different units of measurement
- Spotting distances to travel on road signs. Calculate how much longer it will take to reach the destination.
- Calculating heights of family members – who is the tallest?
- Helping with the measuring in DIY jobs.
- Wrapping parcels – what amount of paper, string do we need?
- Weigh your child on the bathroom scales. Weigh them again while they are holding the family pet. Can they work out how much heavier they are
- Can you find two things heavier than your child and two things lighter than your child around the house?
- Estimating the capacity cups, glasses, spoons or bowls and then checking using a measuring jug.

ACTIVITIES USING NUMBERS AROUND US



- ✚ Using car number plates – add the digits to find biggest, smallest and total.
- ✚ Sharing out sweets, toys etc in groups of 2, 3, 4, 5, 6 etc to help with times tables.
- ✚ Using telephone numbers – value of each digit.
- ✚ Using sandwiches to show fractions $\frac{1}{2}$, $\frac{1}{4}$.
- ✚ Using a round sandwich cake to show fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{6}$, $\frac{1}{8}$ etc.

Pizza please!



Your pizza costs £3.60. Cut it into six equal slices. How much does each slice cost?

The answer is that each slice costs 60p.

- How much is half a slice?
- How much do two slices cost?
- How much does half ($\frac{1}{2}$) of the whole pizza cost? What if you cut your pizza into four equal slices (quarters)?
- How much does one slice ($\frac{1}{4}$) cost now?
- How much does half cost now?
- Is it the same, more or less than above?

COUNTING

Counting is central to a child's understanding of our number system. Children need to be able to count forwards and backwards in different 'jumps' from 1's to multiples of 10 and 100 to fractions and decimals.

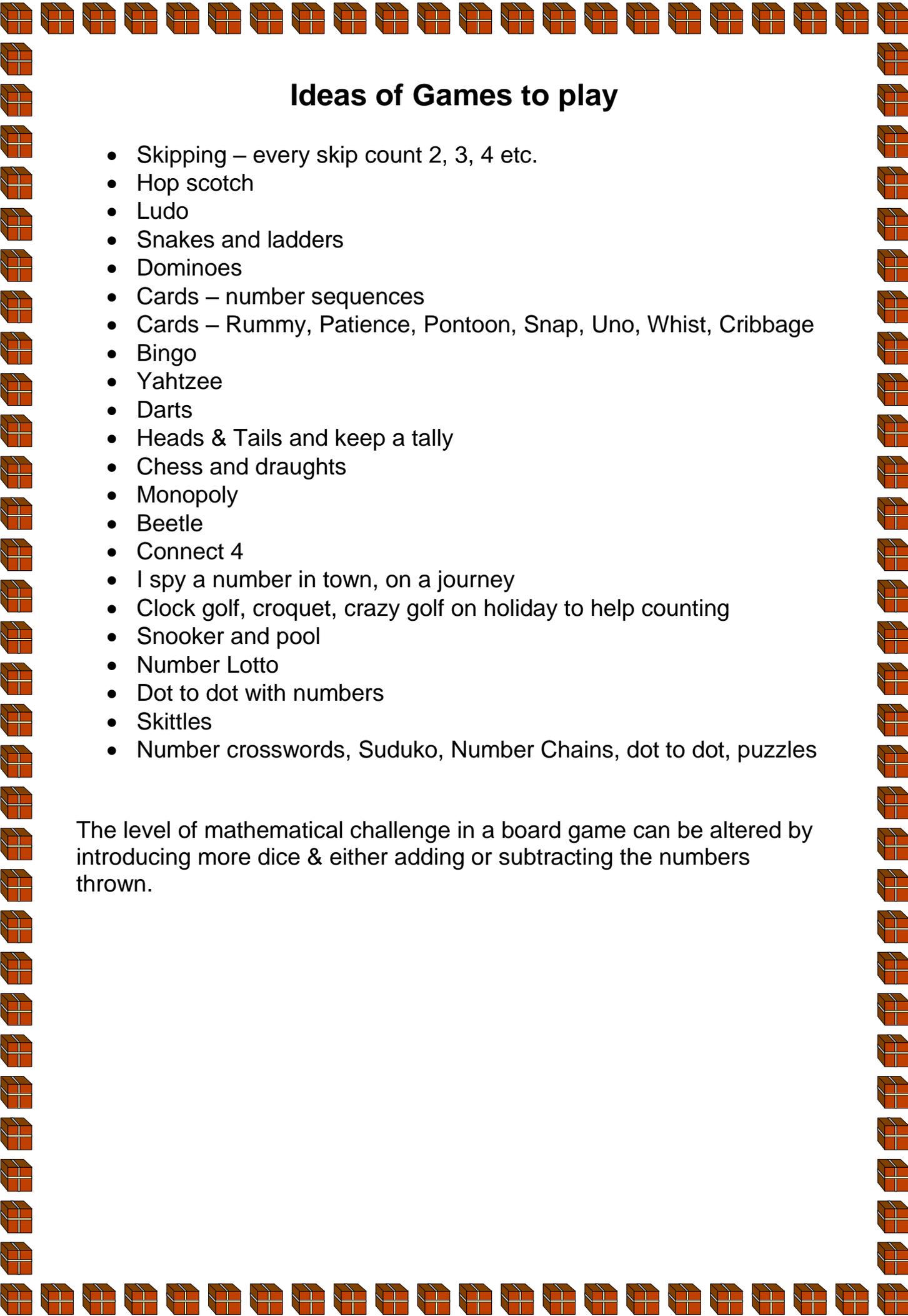
- ◆ Collections of objects – shells, buttons, pretty stones.
- ◆ Cars on a journey e.g. how many red cars?
- ◆ Animals in a field e.g. sheep, cows.
- ◆ Stairs up to bed, steps etc.
- ◆ Sports scores – cricket averages, goal averages.
- ◆ Pages in a storybook.
- ◆ Counting up to 10, 20, and 100 – backwards and forwards.
- ◆ Counting buttons, shoes, socks as a child gets dressed.
- ◆ Tidy a cupboard or shelf and count the contents e.g. tins, shoes, etc.
- ◆ Counting particular vehicles on a journey e.g. Eddie Stobart lorries, motorbikes, etc.
- ◆ Count in fractions, halves, quarters, thirds.
- ◆ Count in decimals. Start at £1.20 and add 0.40 (40p) each time.



Beat the clock

Time your child as they do one of the following:

- Count back from 100 in tens.
- Count back from 75 in fives.
- Starting at six, count up in tens to 206.
- Starting at 39, count up in twenties to 239.
- Starting at 67, count up in thirties to 367. Can they beat their record?

A decorative border of dice surrounds the page. The top and bottom edges are solid lines of dice. The left and right edges are vertical lines of dice, with the corners being 2x2 grids of dice.

Ideas of Games to play

- Skipping – every skip count 2, 3, 4 etc.
- Hop scotch
- Ludo
- Snakes and ladders
- Dominoes
- Cards – number sequences
- Cards – Rummy, Patience, Pontoon, Snap, Uno, Whist, Cribbage
- Bingo
- Yahtzee
- Darts
- Heads & Tails and keep a tally
- Chess and draughts
- Monopoly
- Beetle
- Connect 4
- I spy a number in town, on a journey
- Clock golf, croquet, crazy golf on holiday to help counting
- Snooker and pool
- Number Lotto
- Dot to dot with numbers
- Skittles
- Number crosswords, Suduko, Number Chains, dot to dot, puzzles

The level of mathematical challenge in a board game can be altered by introducing more dice & either adding or subtracting the numbers thrown.

Useful Websites and Publications

<http://www.interactive-resources.co.uk/> (the children have a logon and password for this site)

http://www.bbc.co.uk/schools/ks2bitesize/maths/number/mental_maths/ply.shtml

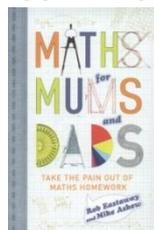
<http://www.woodlands-junior.kent.sch.uk/maths/>

<http://www.topmarks.co.uk/EducationalGames.aspx?cat=16>

<http://www.mathszone.co.uk/>

<http://www.coolmath4kids.com/>

The book below is a recommended buy if you are interested in brushing-up on your mathematical skills and learning more about how children learn maths today.



Maths for Mums and Dads by Rob Eastaway and Mike Askew

The 'Do's' of helping with your child's mental maths

- Be positive about maths, even if you don't feel confident about it yourself
- Highlight the importance of maths in everyday life.
- Talk & listen to your child about their work in maths. It will help your child if they have to explain to you.
- Give the learning time, it will take much practice for your child to learn and become confident in mental maths.
- Seek advice from your child's teacher if you, or they, are unsure.
- Play games and **have fun** with maths!