Mathematical Books—Great Stories Linked with Mathematical Ideas

Title	Author	Mathematical Links
A remainder of one	Elinor Pinczes &	Division with remainders – arrays, factors
One hundred hungry	Elinor Pinczes &	Factors, arrays, division
Anno's mysterious multiplying jar	Masaichiro & Mitsumasa Anno	Multiplication – factorials – Could be used in different ways with pupils across the age range
The Real Princess	Brenda Williams	A rewrite of the princess and the pea with humour and lots of mathematics interwoven
The Rabbit Problem	Emily Gravett	Based on Fibonacci but there are lots of ideas that can be explored
365 Penguins	Jean-Luc Fromental & Joelle Jolivet	Counting to 365 and all sorts of other aspects such as calculation, properties of numbers, pattern and shape
Very hungry caterpillar	Eric Carle	Good for YR/1 counting odd, even numbers, more/less - days of the week. Can be used with KS2 or KS3 children for work on area and perimeter,
Egg Drop	Mini Grey	A great story with lots of mathematics and other curriculum arears woven in
Maths for Mums & Dads	Rob Easterway & Mike Askew	A very useful book for parents who want to understand the mathematics their children are doing. Includes ideas for sharing mathematics together
Maths Curse	Jon Scieszka &	Covering most aspects of mathematics in a humourous way that encourages problem solving
The Man who Counted	Malba Tahan	An exotic journey in which time and again, the main character uses his extraordinary mathematical powers to settle disputes
Actual size	Steve Jenkins	Measures – length - mass
Prehistoric Actual Size	Steve Jenkins	Measures – length - mass
The man who walked between the towers	Maud Gerstein	Y6/7 metric/imperial measures
Ten Black Dots	Donald Crews	Counting to 10 and total number of dots
Counting Birds	Alice Melvin	Count the birds from 1 - 20 and see the passage of time across a day
One Is a Snail Ten Is a	April Pulley	Counting by feet to 100
One Dragon's Dream	Peter Pavey	Counting from 1 to 10 with a difference … How many things can you find seven of on the '7' page?
Growing Patterns: Fibonacci Numbers in Nature	Sarah Campbell and Richard Campbell	A photographic journey through the world of Fibonacci Numbers, firstly in flowers then in fir cones, pineapples and other natural contexts. A great starting point for discussion.
Spaghetti and Meatballs for All!	Marilyn Burns & Debbie Tilley	A humourous story that will get children thinking about area and perimeter (and other areas of mathematics too)

Hassocks Infant School
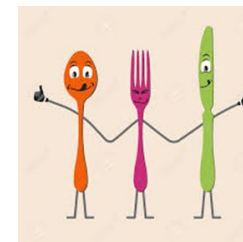
Supporting your child with Maths at KS1

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

What is Maths All About?

At all levels learning maths is about solving problems using key processes such as:

- looking for patterns and relationships between numbers
- making sense of and checking information
- communicating and presenting maths using words and diagrams, for example, graphs and symbols
- reasoning and developing mathematical arguments.

Progression in maths involves using and applying these processes and skills in mathematics lessons across the whole school curriculum and in everyday life. To do this children need to understand key elements such as number, geometry, measures and statistics.

As a mathematical problem-solver, your child should learn and use skills such as:

- sorting
- ordering
- grouping
- measuring
- calculating
- comparing
- manipulating, organising and interpreting information.

Maths is an imaginative, creative way of thinking, which is part of everyday living. Learning maths is also about knowing where it has come from, why it is necessary and how different cultures have contributed to the way it has developed over time.

Children learn maths best through tasks where they have to make choices in order to solve a problem or a puzzle. It helps them to practise skills, ideally in an enjoyable and engaging way, supporting the development of understanding as well as their confidence and their competence.

Activities To Support Mathematical Development in Year 2

* make a calculation:

– from a pack of cards (without the tens, the Jacks, the Queens and the Kings) play a game where each player is dealt four cards and everyone has 1 minute to make up a calculation using cards they have in their hand so the answer is the value of the next card turned over

– a scoring system can be used such as 1 point for using two cards, 2 points for using three cards and 3 points for using all four cards

* dice bingo:

– throw 2 dice and multiply the numbers together

– cross off the numbers on a 'Bingo' card

* talk about numbers that you see on packets or tins of food. This could include talking about how healthy different foods are

* identify symmetrical objects, for example, look for symmetrical wheel trims on cars

* find out how many millilitres different containers hold, such as a cup, perhaps estimating answers first then using a measuring jug to check the estimates

* use a real clock to talk about the times certain events happen at home, for example, getting up in the morning, meal times, when the post arrives. Also, you could talk about times when certain television or radio programmes begin and end, and how long they last for

* help when cooking by measuring ingredients and using the timer.

End of Year 2 Expectations

Most children will be able to:

- Use < and > signs

- Count forward or backward (in steps of 2, 3, 5, 10)

- Use number facts (to 20) to derive and use facts up to 100

- Recognise place value of a two-digit number (tens and ones)

- Use multiplication/division facts (x2/x3/x5/x10), including recognising odd/even numbers

- Compare and sequence intervals of time

- Understand the commutative rule – addition can be done in any order but subtraction can not.

- Use inverse operations used to check calculations

- Greater range of fractions (halves, quarters, and thirds)

- Use standard measures and read a thermometer

- Recognise and describe the properties of 2D and 3D shapes
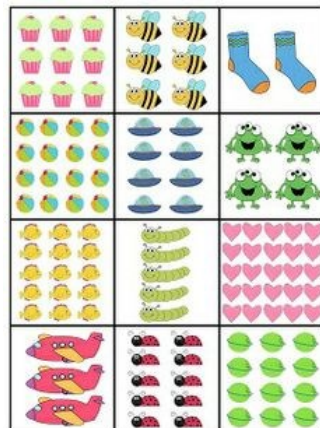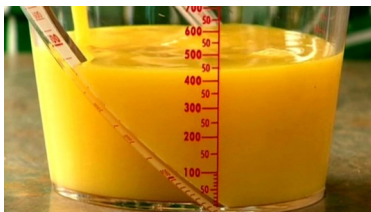
How can I Help My Child's Mathematical Development?

For younger children playing and talking about games together will really encourage their mathematical development and support their learning in school. All activities you do which are seen as a puzzle, a game or as a 'finding out' process will enhance your child's confidence to play with numbers and help them be more competent puzzlers and problem-solvers. Encouraging them to play with numbers and develop a range of mental calculation strategies will also help build their confidence and competence.

As well as playing and discussing games, older children need to practise and consolidate skills such as mental arithmetic, solving equations, working out angles and calculating an average. These skills are necessary for solving the 'bigger' problems they will encounter as their mathematics develops. You can also encourage your child to engage with maths in the media, looking at how numbers and graphs are used to support arguments and encouraging them to question the reasonableness of what they are presented with. They may want to investigate further by searching on the internet, for example.

Many parents will find that the way maths is taught is different from their own experience. If there are aspects of maths you would like to know more about, talk to your child's teacher.

Useful Websites

www.gridclub.com
www.nrich.maths.org
www.bbc.co.uk/bitesize/ks1/maths/
www.topmarks.co.uk
www.ictgames.com
www.sumdog.co.uk
www.coolmath-games.com
www.theimaginationtree.com/category/learn/mathlearn

End of Year 1 Expectations

Most children will be able to:

- Count to 100 from any given number.

- Count forward in multiples of 2,5 and 10 to 100.

- Know 1 less/more of a given number within 100.

- Read and write numbers in words and numerals to 20.

- Add/Subtract 2 one digit numbers within 20

- Recall addition and subtraction number fact within 20.

- Read +, - and = signs

- Group and share numbers

- Doubles to the total of 20.

- Recognise halves and quarters of shapes and amounts.

- Recognise the value of coins.

- Draw hands on a clock face (to show time to the hour/half past)

- Recognise common 2D and 3D shapes.

Activities To Support Mathematical Development in Year 1

* play with wooden blocks building towers and other structures. Is it possible to build two towers of the same height, whatever number of blocks you start with?

* from a pack of cards (without the tens, the Jacks, the Queens and the Kings) play a game of pairs where you try to turn over two cards that add up to 10

* with a pack of dominoes play the game of 'pairs' where you turn over two dominoes so the total number of spots is 12

* talk about shapes that can be found in the house

* play a game of estimating then measuring the lengths of objects in the house

* play a game of ordering everyday objects according to their weight, and then weigh them

* when someone opens a door, talk about the angle the door has turned through

* draw your child's attention to the clock so they learn to match times with events

* talk about what whole numbers mean when they appear in everyday situations such as car number plates, road signs, on a clock face, a flat or a house number. For example, counting out odd and even house numbers on a street

* play a game of 'find the number' somewhere in the house or on the way to school.