

St Killian's College, Garron Tower



Numeracy: A Guide for Parents



What is Numeracy?

- An 'at homeness' with numbers.
 - Ability to make use of Mathematical skills to cope with the practical Mathematical demands of everyday life.
 - Ability to estimate and approximate number in a range of situations.
 - Appreciation and understanding of information presented in Mathematical terms, (in graphs, charts or tables).
- (Cockcroft Report 1982)

The aim of the Mathematics department in St Killian's College is to ensure that all pupils irrespective of perceived ability will experience a rich Numeracy learning environment. We believe that being competent in Mathematics/Numeracy is essential for success in other areas of study.

You as a parent can make a big difference by supporting and encouraging your child at home. Practical number activities, games and support with homework can help to promote confidence, improve everyday problem solving skills and make number work fun. The purpose of this booklet is to explain how you can help your child develop their Numeracy skills at home.

Guidance on helping your child with Maths homework

Don't

- Put your child under too much pressure.
- Pass on negative feelings you may have about Maths.
- Rush your child's learning.
- Work with your child when you're tired or stressed, otherwise you may do more harm than good.
- Worry about mistakes.
- Jump in too quickly with the answer. Encourage your child to solve problems for themselves.
- Compare your children.

Do

- Talk & listen to your child about their work in Maths. Remember, you are not expected to teach your child Maths.
- Encourage your child to talk about how they work things out, it will help if they have to explain to you and most importantly encourage them to use their Maths notebook for assistance.
- Be positive about Maths, even if you don't feel confident about it yourself. As a parent you can play a major part in developing a 'can do' attitude to Maths.
- Work together for short sessions – little and often will be of much more benefit to your child than a lengthy session.
- Stop as soon as either of you has had enough.
- Let the teacher know by writing a note in the homework diary if your child is having difficulties with homework.

Most importantly - make Maths fun and give lots of praise and encouragement!



How you can help your child at home

There are many ways in which you can help your child to develop their Numeracy skills at home and when out and about. Here are some examples:

At home

- Using the clock – identify the numbers telling the time using both analogue and digital clocks.
- Discussing time in 12 and 24 hour clock.
- Using a TV guide to calculate the length of programmes. How many hours of soaps do you watch in a week?
- Calculating time differences in foreign countries. What time is it in Sydney?
- What age am I? I was born in 1967.
- Looking at a calendar – days, weeks, months. How many months is it to Christmas? How many days is it?
- Using telephone numbers – what is the sum of all the digits in your phone/mobile number, check the phone book. Can you find 5 other phone numbers that have the same sum as yours?
- Help your child to scale a recipe up or down to feed the right amount of people – you have a recipe for 4 people, get them to adapt it for 2/8 people etc
- Measure out ingredients for baking.
- Using sandwiches to show fractions: $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}$
- Using a pizza to show fractions: $\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \frac{3}{4}$ etc
- Calculate the heights of each family member in Inches and feet & inches. Who is the tallest? What is the difference in height between the tallest and smallest in the family? (1 foot = 12 inches)
- Weigh your child using the bathroom scales. What is your weight in pounds and stones/ pounds? Now hold an object/pet. Can they work out the weight of the object/pet? (1 Stone = 14lb)
- Is your child interested in sport? Look at GAA results in the local paper.
Glenariffe 7-3, Cushendall 3-15 Glenravel 2-18, Ballymena 3-9
Cushendun 2-4, Glenarm 4-2 Larne 3-10, Cloughmills 4-13
Who wins and by how much? Or was it a draw?
- Display times tables on the bathroom door.

Extension

- How many days to Christmas, now can you work out how many hours?
- Can you find a number in your phone book all made up of square numbers?
- Discuss cutting a pizza into equal sized slices to cater for 4, 6 or 8 people. Ask if you divide a pizza into 8 slices and only 6 people share it, what fraction of the pizza will be left over if everyone eats a single piece?
- Using a recipe for 4 people, adapt it for 6/10 people etc.
- Make a scale drawing of your bedroom using 2m = 1cm.

Using games:

- Guess the number – my number is a 2 digit number. Can you guess my number? (You must ask questions like: Is it odd or even? a prime number? a multiply of 5?)

Beat the clock:

- Count up to 100 in even/odd numbers starting from 2/1.
- Counting up to 10, 20, and 100 – backwards and forwards.
- Count back from 105 in fives.
- Starting at four, count up in tens to 204.
- Starting at 29, counting up in twenties to 229.



Extension

- Count up in higher numbers – start at 16, count up in sixteens.
- Learn square and cube numbers beyond 12^2 and 5^3 .
- Using game 24. Can you make 24 by using the following numbers:

8 2 7 6

2 5 5 8

3 3 3 5

(If you require more examples, your child's class teacher can send extra examples home)

Out and about

- Convert miles to kilometres on a car journey. (5 miles = 8 kilometres)
- Count particular vehicles on a journey. E.g. how many blue cars can you spot?
- Use a bus or train timetable. Ask your child to work out what service to take and how long the journey should take.
- Using car number plates – add the digits, what is the biggest/smallest number you can make?
- Estimate the distance to/between the various places along the route.
- Calculate the cost of the family going to the cinema, swimming pool etc



Extension

- Using 5 miles = 8 Kilometres, convert 44Km into miles.
- If you were travelling at about 30 miles an hour (that's one mile every two minutes), roughly. How far would you travel in $1\frac{1}{2}$ hours?
- Using car number plates, find the sum of the squares of all the numbers.



While shopping there are many learning opportunities:

- Look at prices.
- Talk about the best way to buy a number of similar items, e.g. crisps, yoghurts. Is it better to buy a pack of 6 or 6 individual items?
- Discuss special offers re: price and weight, e.g. 3 for the price of 2, 10% extra, $\frac{1}{2}$ price, $\frac{1}{3}$ off.
Which is better value: a 6 pack of cola costing £2.79 or 6 individual cans at 55p each?
- Calculating discounts e.g. 20% reduction, 50% sale.

- Weighing fruit and vegetables in the supermarket – estimating the weight of items.
- Estimating the final bill at the end of shopping while waiting at the cash out.
- Encourage your child to work out the change in his/her head if paying by cash. Check the change.

Extension

- Look at special offer packages– 25% extra free. What was in it originally?
- You bought a coat in the sale at £50, you receive 10% discount, what price was it before the sale?

Ordering food:

- Cut your pizza into 6 equal slices. What fraction does each slice represent?
- The pizza cost £4.80. How much does each slice cost? What about 2 slices?
½ the pizza?
- What if the pizza was cut into 4 equal slices?



These are just a few ideas. Try to involve your child in as many problem-solving activities as possible. The more relevant or real a problem is, the more they will understand it and the more motivated they will be when trying to solve the problem.

Times tables

As part of our Numeracy policy in the college, year 8 pupils are not permitted to use a calculator; this is to encourage them to use their mental skills. The learning of times tables are essential in year 8. Pupils are tested on a regular basis in class and we would highly recommend that parents ensure times tables are practised regularly at home. Below are some ideas on how you can assist your child in doing so:

- Pick a number e.g. 14. Get your child to tell you what 2 numbers multiplied gives 14. (2x7, 7x2, etc)
- Randomly ask 10 mixed tables per night – record your score.
- Using a grid similar to below – how long does it take to complete?

x	3	6	4	5	2
2					
5					
3					
6					
4					

Try to beat your personal best or compete against an older sibling or parent!

Extension

- Extend the table to a 12 x 12 table and include tables up to the 12 times tables.
- Practise harder multiplications. E.g. 24 x 19 (24 x 20 = 480 – 24 = 456) etc
16 x 25 (4 x 25 x 4 = 400) etc. All done mentally

The following websites are extremely useful to practise times tables:

www.mathsisfun.com/timestable

www.woodlands-junior.kent.sch.uk/maths/timestable/

www.teachingtables.co.uk/timetable/tgame1.html

Other useful websites

- www.counton.org has lots of ideas and games to play.
- www.learn.co.uk help for all children with reading, Maths and revision.
- www.bbc.co.uk/schools games to play and links to many subjects.
- www.AAAMath.com AAA Math features explanations of various Mathematical topics, practice problems and fun, challenging games.
- www.coolmath.com This fully interactive site allows the user to sharpen basic math skills, play games and explore new math concepts.
- www.funbrain.com/numbers.html This site includes 17 original games based on soccer, car racing and much more. Other games include Math Baseball, where a child can score runs with correct answers and Operation Order, where students can build pyramids with their knowledge of algebra.
- www.maths24.com your child will be familiar with this game from primary school. In St Killian's we have a game 24 tournament in March and the winners will represent the college at a tournament held at Antrim Board Centre in May.
- www.primarygames.co.uk This site features learning games, action games, puzzles, card games, virtual worlds, colouring pages, and more!
- www.mathsforschools.co.uk Alta Maths



Each pupil in year 8 is registered for Alta Maths. Alta Maths is a complete, web-based, formative assessment system. It is designed for primary and post-primary schools, with content specifically designed for the Northern Ireland curriculum. It supports students in KS3. It offers increased motivation and enjoyment and the opportunity for them to develop their ICT skills.

It allows students to:

- practise questions on selected topics.
- work at levels suited to their ability.
- confirm their level on certain topics.
- work at advanced mode.
- obtain feedback on assessments with model answers.

Alta Maths is suitable for all students but especially for high and low achievers. All sections are adaptive with the difficulty of the next question depending on the previous answer.

My Maths Mat

My 100 Square

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

My Times Tables Square

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100



1p



2p



5p



10p



20p



50p



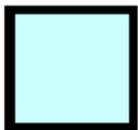
£1



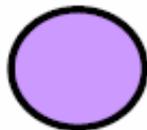
£2

My Maths Mat

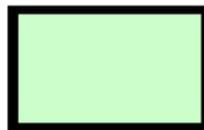
My 2D Shapes



square



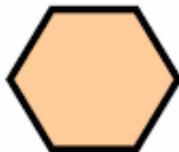
circle



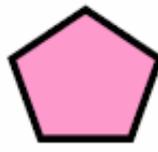
rectangle



triangle



hexagon



pentagon

My 3D Shapes



cylinder



cube



cuboid



sphere



pyramid



prism

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Maths Symbols

- take away
minus
subtract

÷ divide
share
equal groups

+ add
plus
addition

x multiply
times
lots of

= equals
makes
is the same as

Basic Fractions

$$1 = \frac{1}{2} + \frac{1}{2} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

1 whole

2 halves

4 quarters



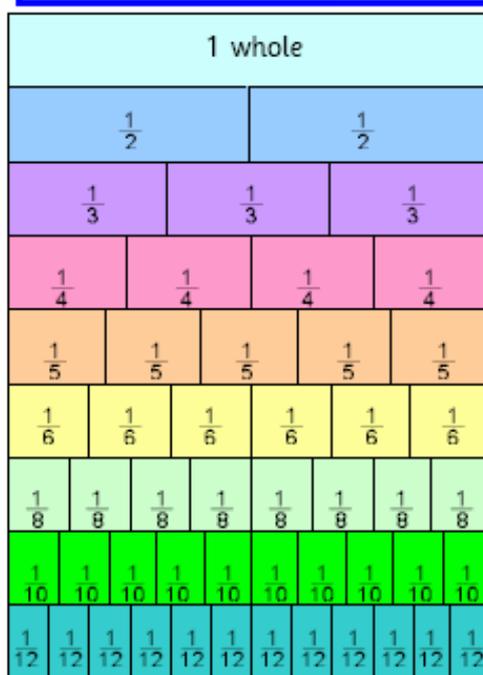
My 100 Square

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

My Multiplication Square

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

My Maths Mat



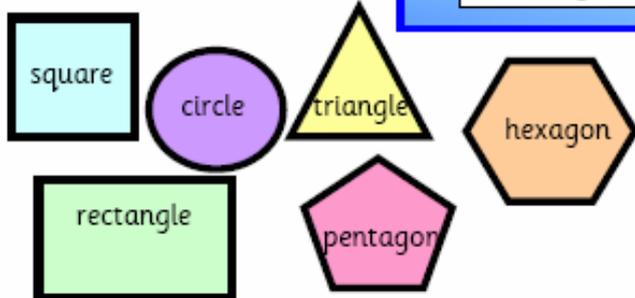
Fraction table

Fractions	Decimal	Percentage
1	1	100%
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%
$\frac{1}{10}$	0.1	10%
$\frac{1}{5}$	0.2	20%
$\frac{1}{3}$	0.3	33%
$\frac{1}{6}$	0.16	16%

Equivalences

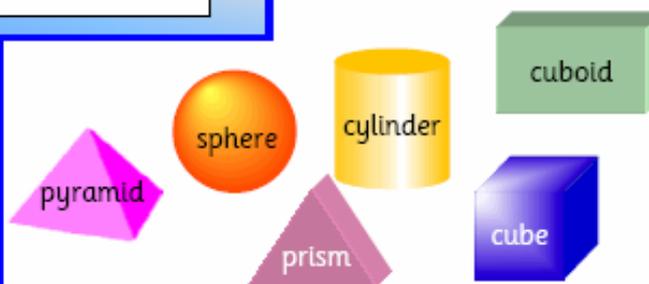
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2D Shapes

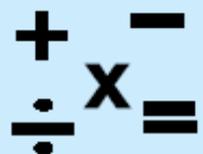


My Maths Mat

3D Shapes



Maths Symbols



add, plus, total, sum, addition, more, altogether, increase



take away, minus, subtract, fewer, difference between, decrease



multiply, times, lots of, groups of, product, array, repeated addition



divide, divided by, share, divided into equal groups, share equally



equals, makes, total is the same as

Metric Measurements

1 centimetre (cm)=10 millimetres (mm)
 1 metre (m)=100 centimetres
 1 kilometre (km)=1000 metres
 1 kilogram (kg)=1000 grams (g)
 1 tonne (t)=1000 kilograms
 1 litre (l)=1000 millilitres (ml)
 1 litre=1000 cm³
 1 cm³=1 millilitre