

## Grow plants and measure how they grow.

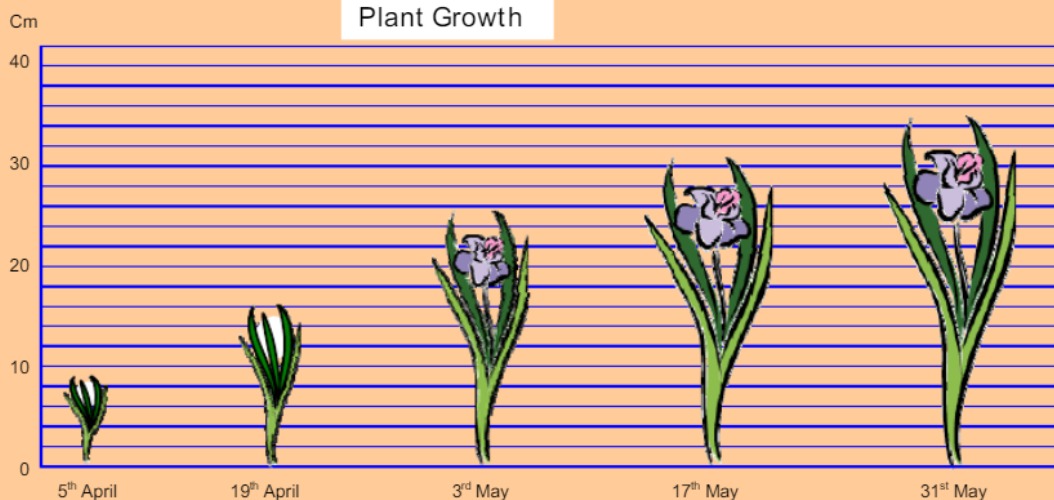
Simple level for younger and/or less able children: record one variable.

Grow a plant such as a tomato plant or runner bean either from seed or from a 'starter' bought in a garden centre. If a faster growing plant is required, mustard seed is very good.

Keep a record of how the plant grows. The easiest measurement of all to take is the height from the soil surface to the top of the plant. This can be recorded every few days and the data put into a table or graphical form.

Some ways in which this can be done are illustrated below:

Date	Height (cm)
5 <sup>th</sup> April	9
19 <sup>th</sup> April	16
3 <sup>rd</sup> May	25
17 <sup>th</sup> May	31
31 <sup>st</sup> May	35



## Working in the kitchen

**Sorting:** Many things come into a kitchen in the course of a week and these are a great source of mathematical activity. Younger children love sorting. You could, for instance, pretend to accidentally tip all the fruit into your main bag and then you can ask your children to sort them for you. You can then ask, 'How many pears are there?', 'Are there more apples than oranges?', 'How many more apples than oranges are there?' You can, of course, do this with other things around the house – cutlery, socks, shirts etc.

**Laying the table** is a great activity because it teaches what we call 'one-to-one correspondence', i.e. the idea that each person needs one plate, one knife, one fork etc. You can also discuss this when getting dressed – each foot needs one sock and one shoe.

Older children can **sort foods** into fruit, vegetable, pasta and meat categories or the containers into cubes, cuboids, cylinders etc. (If you are not familiar with all the names of shapes, please download the mathematical dictionary from the [www.mathsgogogo.co.uk](http://www.mathsgogogo.co.uk) site.) When you are trying to get a meal prepared in a hurry the children can be kept occupied by giving them some cans and packets from the cupboard to play with. They love to discover how to make towers and trains and cars. Okay, so the can may fall on the floor now and again – don't get angry, it's not the end of the world. When you can't bear it any more, give them some paper and ask them to draw the packets or draw what they have been making. Don't let them watch the television until you really, definitely and absolutely can't think of anything else for them to do and they can't either! Keep them away from that brain stifling box as long as possible. When you have a spare moment, have a look at this:

<http://www.poemhunter.com/poem/television/>.

Still older children can look at the labels and **put foods in order** of 'weight', 'price per Kg', 'amount of protein/sugar/fat etc per 100g' etc. Total calorie intake for a day's food can be calculated.

**Weighing:** Get your child to hold two carrier bags and shut their eyes. In one put something quite heavy such as a pack of pasta. In the other put something light such as a tomato. Ask the child to estimate which is heavier and which is lighter. Do this with things that are closer together in mass. If the masses are very similar, you can check on the scales. Reverse the process so that the children put objects in your carrier bags and you have to guess which is heavier. They love to reverse roles to try to catch you out, but you can always word your questions so that they do most of the work: 'Was I right – is the cabbage really heavier than the lettuce?'

So many opportunities here. Weigh a potato. Weigh two potatoes and see which is the heavier (and by how much). Cut the larger potato so it weighs the same as the lighter one (just before cooking them for dinner, of course). Weigh some potatoes and then use your experience to judge the weight of other potatoes. Weigh these and see how accurate you were. Keep a table of your results. Does your accuracy improve with experience?

Does weighing potatoes help you judge the mass of tomatoes, packets of frozen peas etc?

**Time:** You can teach your little darling to tell the time in the kitchen. All you need is a clock on the wall. If they are still at the stage of learning the hours, keep your eye on the clock and as it approaches 4 o'clock or 5 o'clock etc, you can quite spontaneously ask them the time. Once they have mastered this, you can do the same with the half hours and then the quarter hours and so on.

You can also have a kitchen timer and teach them how to use it. Let them set it to boil an egg or time the pasta. If the pasta is too soft or the egg too hard make them eat it, they will soon learn! I am a great believer in learning from experience.

Don't forget that time also includes things such as dates, years, diaries and calendars which all represent sequences of events and children can fill in these events on calendars and write a diary.

**Bubbles.** Who can produce the largest bubble in a sink full of water and washing up liquid? How are you going to measure the bubbles to see who has the largest?

If you have a bubble blowing device, can you blow the largest bubble? How will you measure it?

What happens to the shape of bubbles when you put several together? Can you think of an animal that uses this effect? (Answer: bees when making their honeycomb.)

## Number Activities

### Give Me Five

I am sure you are familiar with the game in which one person says to another, "Give me five!" and they slap the palms of their hands together. It is very easy to adapt this to "Give me four!" or "Give me two and a half!" I have two nephews, one four years old and the other six. They have great fun with this one. You can, of course, extend this to two hands: "Give me eight ... six and a half ... five and a quarter!" or if you are playing by the paddling pool, "Give me twelve ... fifteen and a half ... twenty!" If you incorporate this sort of nonsense into your everyday routine, children see it as a game and like to rise to the challenge just as they like to score a goal in a game of football.

### Car number plate games

My children used to love these games and now they are all geniuses like their dad, so there must be something in them!

You are driving around in your car. There are hundreds of other cars on the road and every one has a number plate. Unfortunately, the newer registrations do not have three digits, but there are still plenty of older cars around that do.

**Variation 1.** Add the digits as quickly as possible.

R378 FRE



$$3 + 7 + 8 = \underline{18}$$

**Variation 2.** Spot a three digit number plate. Read the first two digits as a number and add the third digit.

R378 FRE



$$37 + 8 = \underline{45}$$



**Variation 3.** Spot a three digit number plate. Read the first two digits as a number and subtract the third digit.

R378 FRE



$$37 - 8 = \underline{29}$$

**Variation 4.** Add a fixed number to a number plate number. Use ones appropriate to the children's age and ability such as "add 1/2/3" and then progress to "add 10/20/30" or "add 100/200/300" and then to "add 25/35/105" etc as appropriate.

R378 FRE



$$378 + 30 = \underline{408}$$

**Variation 5.** Double a number plate.

T175 DDS



$$175 \times 2 = \underline{350}$$

**Variation 6.** Halve a number plate.

V455 UHT



$$455 \div 2 = 227.5$$

or  $\underline{227\frac{1}{2}}$

**Variation 7.** Add two number plates together.

R378 FRE

M277 MAS



$$378 + 277 = \underline{655}$$

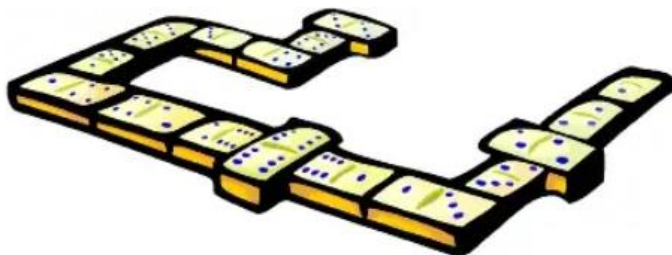
Play similar games with any source such as **house numbers**. Young children can learn much about numbers by simply walking down the street – odd numbers are usually on the left of a road and even numbers on the right, but there are exceptions as I discovered to my cost some time ago when I walked a very long way down a road before I realised that the numbers went from 1 to about 500 down one side and 501 to about 1000 back down the other!

I once lived on a large estate where there are no houses numbered 13 (this is quite common and the reason can be discussed) and the road I now live in starts at number 3, has no number 13 or 15 on one side and nothing between 14 and 24 on the other. The reason for this is a mystery I have yet to solve.

Once the correct pattern has been spotted, young children may be asked to predict the number of the next house in the road. Once they can do this for small numbers, take them to a much longer road where the numbers go way past 100.



When children today talk of playing games, they normally mean playing games on a computer, but the old fashioned games such as snakes and ladders, cards, games of dice, dominoes and so on provide much practice in mathematics and all children should be playing them often. They also provide opportunities to socialise within the family and friendship group and teach children to be a good loser as well as a good winner.



## Shape Activities

Find shapes at the breakfast table. What shape is your toast? Look at the cereal box. Do you see any shapes on it? What about your table □ what shape is it?

Take several pieces of spaghetti, break them into different lengths. Put the “sides” together to make different “polygons.” Regular polygons have the same length sides and angles. You can make irregular polygons by making shapes with shorter and longer sides and different angles.

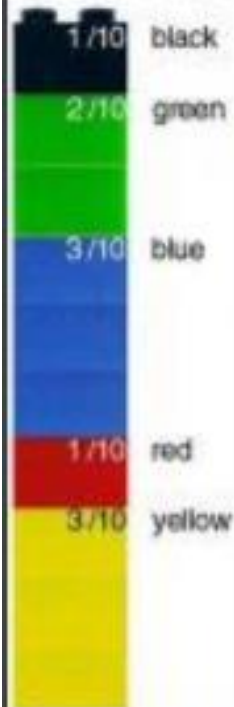
Talk about the features of your shapes by pointing out the sides and angles.

Look for small, medium and large shapes.

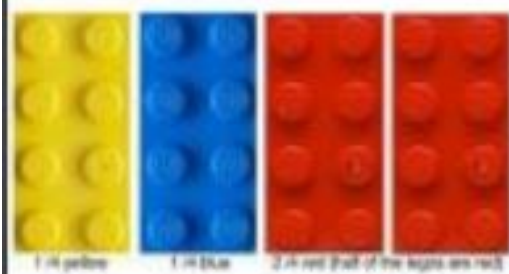
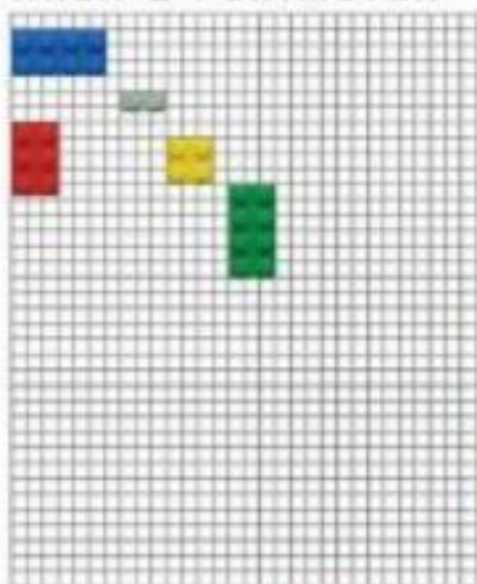




# FRACTIONS

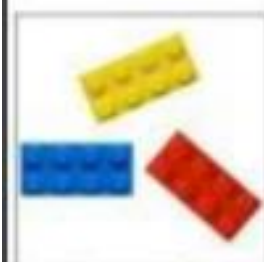


# AREA & PERIMETER



# TECHNOLOGY

# MULTIPLICATION



# ARRAY 2 rows of 4 = 2 x 4



# MEAN MEDIAN MODE & RANGE



3 6 12 16 24

Mean =  $(3 + 6 + 12 + 16 + 24) / 5 = 12.2$

Median = 12

Mode = none

Range =  $24 - 3 = 21$



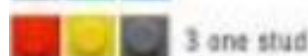
2 3 3 3 4

Mean = 3






















Median = 3

Mode = 3

Range = 2



# Lego Addition.

	+		=			
	+		=			
	+		=			
	+		=			
	+		=			
	+		=			
	+		+		=	