

## Maths activities to do at home

### Mrs Marsh

To help your child develop their maths skills, I have come up with a selection of activities for **adults** and **children** to do together at home. They will help develop an understanding of maths and enable you to have **fun** with maths **together**.

These activities are intended to promote investigative and enquiry skills, and the discussions you have will be **invaluable** to your child.



You do not need to record anything in your homework books. However, if your child struggled with or excelled in anything, please feel free to comment.

The activities are grouped in different themes, but they *do not* have to be done in order, simply choose one that you and your child find interesting.

I hope that you enjoy these activities and find them useful and **fun**! If you have any maths activities that you think that others might like, please let me know.





## Time

### Diary

Keep a diary of the times you do different things this week. E.g. when you get up, visit a friend, eat breakfast, play, go to school, read, go to bed etc.

### Convert Clocks

If you have a digital clock, try to write the time in an analogue way, if you have an analogue clock, write the time digitally or on the 24 hour clock.

Check the time together at regular intervals.

### TV Times

If you watch TV, when are your favourite programmes on? What time do they finish? How long are they on for? Who spends the most time watching TV in your house? On which day do you watch tv the most/least?

### Time Yourself

How long does it take you to do different things? Brush your teeth/eat breakfast/get to school/have a shower/clean your room/do 10 star jumps/ hop around the garden etc. What can you do in two minutes?

Try lots of different things!

### Birthdays

Look at a calendar. Find out how many days there are in a week, in each month, in a year. How many weeks are in a year? How many months are there in a year? Name them. Which is the sixth/last/third month etc?

When are the birthdays or important dates in your family's year? Put them in order. Make your own calendar showing these special dates. What are the different seasons and when do they start?

*Mrs Marsh says "Telling the time on both analogue and digital clocks accurately is a vital life skill."*



## Mass

### Kitchen

Record the weight of different foods you have in your kitchen. Which are in kilograms (kg) and which are in grams (g)? Choose 5 packs and order them from lightest to heaviest. Are the big packs always heaviest? Are the small packs always lightest? Are there any units that you are not familiar with?

### Recipe

Look at a recipe for something you like. In what units are the ingredients measured? Follow the recipe reading the scales accurately, then enjoy sharing what you have made together!

### Scales

Weigh different items around your home using any scales you have (kitchen, bathroom etc). Focus on accuracy. What items added together make 2Kg, 100g, etc.

### Fruit and Veg

Find a variety of fruit and vegetables. Estimate how much they weigh then weigh them accurately. Put the items in order of mass. Can you add any together to make 300g, 50g, 2Kg etc. Perhaps make a fruit salad or vegetable stir fry. How much did the peelings weigh?

*Mrs Marsh says "Accurate measuring is essential when making yummy chocolate cakes! Remember that 1 kg = 1000g."*



## Capacity

### Water

In the bath/kitchen sink/ paddling pool/bucket etc, pour water from different sized containers. How many little ones does it take to fill the largest one? Put the containers in order of capacity. Does the tallest/shortest container have the biggest/smallest capacity? (Use familiar objects like yoghurt pots, bowls, plastic bottles etc).

### Coloured Water

(A few drops of food colouring in the water makes reading scales much easier). Use a measuring jug of coloured water to measure the capacity (in litres and/or millilitres) of known items. Order them from smallest to greatest capacity.

Can you read scales that don't display the numbers?

### Units

In shops, look at and discuss any products that are sold by capacity, eg. Paint, lemonade, soup, squash, milk. Estimate then calculate, how much liquid you drink each day.



## Length

### Kilometres (km)

In a car/bus/atlas, discuss the distance between places. Walk a kilometre from your home. Where does it take you? Record the distance (in Km) of any journeys taken. (We work in kilometres (km) but do discuss miles.

### Metres (m)

At home find items shorter/longer than a metre. Order objects according to length. (I have paper metre tapes that you are welcome to have).

### Centimetres and m

Who has the longest jump/shortest hair/shortest leg/longest throw etc. Estimate first then measure accurately. Record as 142cm, 1.42m or 1m 42cm.

### Millimetres and cm

Measure plants and monitor their growth, perhaps recording weekly. Snail race - measure how far a snail travels in 10 minutes (wash your hands!). Find a leaf that is 10cm, 43mm, etc. Record as 43mm or 4.3cm or 4cm 3mm.

*Remember 1l = 1000ml. Remember 1km = 1000metres, 1 metre = 100 centimetres, 1cm = 10 millimetres.*



## Money

### Receipts

When shopping, find things more expensive/cheaper than 50p, £1.00 etc. Which two items can be bought for £3.00. Find the cheapest bag of flour, rice etc.

Look at the receipt together and order some items from least to most expensive. How much change would you have from £20.00?

### Shops

Use real money to play shops. Label toys/food etc with prices (up to 50p) and role play paying and giving change accurately. Work on doubling digit figure numbers, mentally.

### Banks

Give piles of 2, 5 and 10ps to count. If I give you 6, 2ps how much is that? 5 5ps, 8 10ps + 3 2ps etc. How many 2ps can you give me for 16p? I've got 10 5ps, how many 10ps will you swap me for them? Which is best to have, 3 5ps, or 8 2ps. etc. Initially work with just one value of coin, then add more, depending on your child's confidence. Then work with piles of 6p/7p and 8p. Focus on learning 6/7/8 times tables

### Piggy bank

Give a selection of coins to count i.e. 1p, 2p, 5p, 10p, 20p, 50p, £1 and £2. (perhaps empty a piggy bank). What is the best way to count all the money? Big coins first? Make 10s? Put all the same values together? Randomly? Start with a few coins then add more, depending on your child's confidence. Add a selection of coins mentally.

### Decimals

#### Loads of Money

Have piles of £1, 10p and 1p coins. Put into piles to show £4.32, £5.07. £5.70 etc. Make sure that your child knows that £5.70 is more than £5.07. Transfer values onto cards and put into order. Use a calculator to input values of money.

#### Prices

Using receipts, order the prices, focusing on their decimal values. Use written methods of addition and subtraction to add up two and three amounts.

#### Coin Swap

With piles of £1, 10p and 1p coins, convert pounds to pence and vice versa. E.g. £1.62 = 162p, then swap roles. Write the values on cards and use to play snap to match equivalences. Then do the same with a variety of pound amounts.



## Shape

### 2D and 3D ID

On walks, drives or at home, spot and name any 2D or 3D shapes that you see (e.g. road signs = triangle, window = square). Draw or photograph them, then label them with any properties that you know. Can you find the names of shapes with up to ten sides? Discuss symmetry and types of triangles. Can you identify any angles in them?

### 2D/3D Cutting

From newspapers/magazines, cut out pictures of 2D shapes and 3D shapes (e.g. a circular clock etc) to make colourful pictures. Do any of the 2D shapes fit together to tessellate?

### Shape Make

Use an old food box or greetings card to make a range of 2D shapes. Quadrilaterals and triangles should be easy, as should irregular pentagons, hexagons, heptagons and octagons. You can draw around cans, coins, etc for different circles. Cut out the shapes and use them as templates to create interesting pictures. Can you use them to draw a robot? What mathematical vocab can you use to describe them?

### 2D Drawing

Use accurate ruler skills (or shapes made above) to make a picture using 2D shapes. E.g. a house with square windows, rectangular door, circular door handle etc). Try to make a scale drawing e.g 1cm = 2m

### Right Angle Hunt

Look around you to find lots of right angles (90 degrees). You could play an eye-spy type game ("I spy with my little eye a right angle on something blue/metal/over there etc." Use a known right angle (like the corner of a ruler or book or set square) to find other angles that are smaller, same as, greater than a right angle.

### 3D Model

Make a model with 'junk' using mathematical names for the shapes. Discuss their properties e.g. vertices (corners), edges, faces etc.

### Nets

Carefully unfold a small box (cereal box etc) and discuss its net. Use as a template to make nets for your own boxes. Discuss the purpose of the tabs. You could use your boxes for presents or for storage.

### Symmetry 1

Adults draw half a shape/picture/pattern, then your child can draw the other so that it is symmetrical (the same on both sides). Swap roles.

### Symmetry 2

Fold paper in half and cut out shapes across the fold so that they are symmetrical shapes. Children decorate them so that they are still symmetrical. (Butterflies and faces are always good).

### Symmetry 3

Children write words upside-down under the normal writing. (This can make good greetings cards). Children could draw or write when looking in a mirror too.

### Battleships

Play battleships on paper using coordinates e.g. (7,3). We remember this by going along the corridor and up the stairs.

### Maps

Use the grid references on maps to find different locations. You could then use points on the compass (year 3 N, S, E, W and year 4 NE, SE, NW, SW too) to move around the map. More confident mathematicians may be interested in the scale of different maps.

*Mrs Marsh says "There are many shapes around us everywhere. Remember that 2D shapes have height and width (like a square) and 3D shapes have height, width and depth (like a cube). Remember that right angles have 90degrees, just like the internal corner of a square. Remember regular polygons have all sides and angles equal and that irregular ones don't. Remember that you cannot draw an accurate circle freehand."*



## Multiplication Tables

Most children join in when we chant tables and can probably recite the multiples of tables, but the skill is in picking facts from the tables. I like to use certain objects to represent each multiplication table. These visual prompts are really effective and help children to 'see' the numbers and any patterns. They can be displayed and recited as children walk up and down the stairs, displayed in the bathroom, bedroom or kitchen. Also use them to write the matching number sentences from  $1 \times$  to  $10 \times$ . (e.g.  $1 \times 3 = 3$ ,  $2 \times 3 = 6$  etc.)

**Please do the same activities for each multiplication table, using the relevant objects.**

For the:

2 times table - use ten 2p coins

3 times table - cut out 10 triangles and count the sides

4 times table - cut out 10 squares and count the sides

5 times table - use ten 5p coins

6 times table - cut out hexagons and count the sides

*7 times table - draw around a 20p to give ten heptagons and count the sides*

*8 times table - draw or make ten octopi and count the tentacles*

*9 times table - draw or make ten 9 spotted ladybirds and count the spots*

10 times table - use the 10p coins

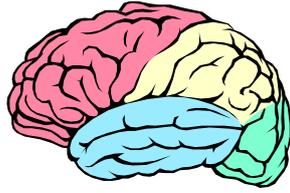
### Tables activities/questions (using example of 2 times table).

Count each coin up and down " $1 \times 2 = 2$ ,  $2 \times 2 = 4$  etc then  $10 \times 2 = 20$ ,  $9 \times 2 = 18$  etc". If I have seven 2ps, how much have I got? Nine 2ps. etc. I have 16 p, how many 2ps is that? I have 20p, how many 2ps is that? What is  $3 \times 2$ ,  $7 \times 2$ , 14 divided by 2, 20 divided by 2 etc. Please see the vocabulary link.

*(Tables in italics are for confident mathematicians).*

**Focus on one multiplication table each week until your child is confident. By the end of year 4 children are expected to know the 2, 3, 4, 5, 6, and 10 times tables. By the end of year 5 children are expected to know all tables to  $10 \times 10$ .**

*Mrs Marsh says "When you know your tables inside out and back to front, other bits of maths will be so much easier for you (like fractions, percentages etc). You are the only one that can learn them for you!"*



### General Skills Games

These activities help your child in all areas of development and are separate to the weekly maths home activities.

#### Car plates

Using number plates, children can create and order numbers, add and multiply, identify odd and even numbers and patterns.

#### Card Games

- playing pontoon, rummy and whist are good card games to promote addition.

#### Dice

- great to generate numbers for addition and multiplication.

#### Jigsaw Puzzles

- are good for developing spatial awareness.

#### Board Games

- like connect4, snakes and ladders, mastermind, ludo, chess, darts etc are good for thinking skills.

#### Bingo and Guess my Number

promote awareness of numbers.

***Mrs Marsh says*** "Most children in year 3 will use number lines to help with calculations. By the end of year 4 and 5, most children will have a more formal method to use with calculations. Although you will probably know of different methods that you may have used at secondary school, please avoid sharing them as this can confuse and upset some children. I have put calculation booklets on our website, in the information section. These display how each calculation is taught in school.

#### Conclusion

*Most children love maths but as with everything, there are those that don't. Helping your child to have **fun** with maths will help them to become more confident and willing to have a go at maths. I hope you enjoy working though these activities with your child. "*

