

Dear Parents, Carers,

Please have a look through some of these short, simple maths games and activities that can be played anytime, anywhere.

If you could play an activity a day with your son/daughter, it would greatly improve their mathematical abilities. The year group is merely a guide – if you need to dip into a higher/lower year group's activities, then please do. Find games that are challenging enough for your own child.

Have fun!

# Fun activities to do at home:

## Year 1.

### Secret numbers

Write the numbers 0 to 20 on a sheet of paper. Ask your child secretly to choose a number on the paper. Then ask him / her some questions to find out what the secret number is, e.g.

Is it less than 10?

Is it between 10 and 20?

Does it have a 5 in it?

He/she may answer only yes or no. Once you have guessed the number, it is your turn to choose a number. Your child asks the questions. For an easier game, use numbers up to 10. For a harder game, use only 5 questions, or use bigger numbers.

### Shape activity

At home, or when you are out, look at the surface of shapes. Ask your child – what shape is this plate, this mirror, the bath mat, the tea towel, the window, the door, the red traffic light, and so on. Choose a shape for the week, e.g. a square. How many of these shapes can your child spot during the week, at home and when you are out?

### Dice game

You need a 1–6 dice, paper and pencil. Take turns. Choose a number between 1 and 10 and write it down. Throw the dice and say the dice number. Work out the difference between the chosen number and the dice number, e.g. if you wrote down a 2 and the dice shows 5, the difference is 3. You could also draw a number line to help your child to see the difference between the two numbers.

### How old?

Start with your child's age. Ask your child:

How old will you be when you are 1 year older?

How old were you last year?

How old will you be 10 years from now? ...and so on.

### Track games

Make a number track to 20, or longer. Make it relevant to your child's interests – sea world, space, monsters... Then play games on it. Throw a dice. Move along that number of spaces. BUT before you move, you must work out what number you will land on. If you are wrong, you don't move! The winner is the first to land exactly on 20. Now play going backwards to 1. Throw a dice. Find a number on the track that goes with the number thrown to make either 10 or 20. Put a counter on it, e.g. you throw a '4' and put a counter on either 6 or 16. If someone else's counter is there already, you may replace it with yours! The winner is the first person to have a counter on 8 different numbers.

### **Cupboard maths**

Choose two tins or packets from your food cupboard. Ask your child to hold one in each hand and tell you which is heavier, and which is lighter. (Check by reading the weight on each tin or packet.) If he/she is right, they keep the lighter one. Then choose another item from the cupboard, trying to find one that is lighter still. Carry on until your child has found the lightest item in the cupboard. It might be suitable to eat as a prize!

### **Takings**

For this game you will need a dice and a collection of small things such as Lego bricks, sticky shapes or dried beans. You will also need pencil and paper. Take turns. Roll a dice. Take that number of beans. Write down the number. Keep rolling the dice and taking that number of beans. BUT, before you take them, you must write down your new total. For example, Sally has 7. She throws 4. She has to work out how many she will have now. She starts counting from seven: eight, nine, ten, eleven. She writes 11. You can only take your beans if you are right. The first person to collect 20 beans wins!

### **Adding circles**

For this game, you need a dice and pencil and paper. Each of you should draw four circles on your piece of paper. Write a different number between 2 and 12 in each circle. Roll the dice twice. Add the two numbers. If the total is one of the numbers in your circles then you may cross it out. The first person to cross out all four circles wins.

### **Dicey coins**

For this game you need a dice and about twenty 10p coins. Take turns to roll the dice and take that number of 10p coins. Guess how much money this is. Then count aloud in tens to check, e.g. saying ten, twenty, thirty, forty... If you do this correctly you keep one of the 10p pieces. First person to collect £1 wins. Don't forget to give the coins back!

### **Out and about**

On the way to school, see how many cuboids, spheres and cylinders you can spot. Which did you see most of?

### **Car number bingo**

Each person chooses a target number, e.g. 10. Think about which pairs of numbers add to make your target. You have to see a car that has two numbers that add up to your target number. Say:  $4 + 6 = 10$ , bingo! Change the target number each week. You can extend this activity by looking for three numbers which add up to your target number.

## **Year 2.**

### **How heavy?**

You will need some kitchen scales that can weigh things in kilograms. Ask your child to find something that weighs close to 1 kilogram. Can he/she find something that weighs exactly 1 kilogram? Find some things that weigh about half a kilogram.

### **Out and about**

During a week, look outside for 'thirties' numbers, such as 34 or 38, on house doors, number plates, bus stops, etc. How many can you spot? What is the biggest one you can find? Next week, look for 'fifties' numbers, or 'sixties'...

### **How much?**

Once a week, tip out the small change from a purse. Count it up with your child.

### **Number facts**

You need a 1–6 dice. Take turns. Roll the dice. See how quickly you can say the number to add to the number on the dice to make 10, e.g. If you are right, you score a point. The first to get 10 points wins. You can extend this activity by making the two numbers add up to 20, or 50.

### **Speedy pairs to 10**

Make a set of 12 cards showing the numbers 0 to 10, but with two 5s. If you wish, you could use playing cards. Shuffle the cards and give them to your child. Time how long it takes to find all the pairs to 10. Repeat later in the week. See if your child can beat his / her time.

### **Guess my shape**

Think of a 2-D shape (triangle, circle, rectangle, square, pentagon or hexagon). Ask your child to ask questions to try and guess what it is. You can only answer Yes or No. For example, your child could ask: Does it have 3 sides? or: Are its sides straight? See if he/she can guess your shape using fewer than five questions. Now ask them to choose a shape so you can ask questions.

### **Car numbers**

Each person chooses a target number, e.g. 15. How many car numbers can you spot with 3 digits adding up to your target number, e.g. K456 XWL. So  $4 + 5 + 6 = 15$ , bingo!

### **Board games**

Make a board like this:

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

The numbers are arranged differently from usual, but the games will still work if you use a normal snakes and ladders board. Roll a dice twice. Add the two numbers. Move along that number of spaces. Before you move, you must work out what number you will land on. If you are wrong, you don't move! The first to the end of the board wins. For a change, you could roll the dice and move backwards. Or you could roll the dice once, then move the number that goes with your dice number to make 10, e.g. throw a 3, move 7.

### Bean subtraction

For this game you need a dice and some dried beans or buttons. Start with a pile of beans in the middle. Count them. Throw a dice. Say how many beans will be left if you subtract that number. Then take the beans away and check if you were right! Keep playing. The person to take the last bean wins!

### Circle trios

Draw four circles each on your piece of paper. Write four numbers between 3 and 18, one in each circle. Take turns to roll a dice three times and add the three numbers. If the total is one of the numbers in your circles then you may cross it out. The first to cross out all four circles wins.

### Shopping maths

After you have been shopping, choose 6 different items each costing less than £1. Make a price label for each one, e.g. 39p, 78p. Shuffle the labels. Then ask your child to do one or more of these. Place the labels in order, starting with the lowest. Say which price is an odd number and which is an even number. Add 9p to each price in their head. Take 20p from each price in their head. Say which coins to use to pay exactly for each item. Choose any two of the items, and find their total cost. Work out the change from £1 for each item.

### Straight lines

Choose 4 different lengths between 5 and 20 centimetres. Use a ruler marked in centimetres.

Draw lines of each length.

## Year 3.

### Can you tell the time?

Whenever possible, ask your child to tell you the time to the nearest 5 minutes. Use a clock with hands as well as a digital watch or clock. Also ask:

What time was it one hour ago?

What time will it be one hour from now?

Time your child doing various tasks, e.g.

getting ready for school;

tidying a bedroom;

saying the 5 times, 10 times or 2 times table...

Ask your child to guess in advance how long they think an activity will take. Can they beat their time when they repeat it?

### Fractions

Use 12 buttons, or paper clips or dried beans. Ask your child to find half of the 12 things. Now find one quarter of the same group. Find one third of the whole group. Repeat with other numbers.

### Order, order!

Each of you should draw 6 circles in a row. Take turns. Roll two dice and make a two-digit number. Write the number in one of your circles. Once the number is written in a circle you cannot change it or move it! The first to get all six of their circle numbers in order wins.

### Board games

1. For these games you need to sketch a board like this. Notice how the numbers are arranged. Start on 1. Toss a coin. If it lands heads, move 1 place along. If it lands tails, add 10, saying the total correctly before moving. First person to reach the bottom row wins.
2. Start anywhere on the board. Roll a dice. Even numbers move you forwards and odd numbers move you backwards. If you land on a multiple of five, you can move either 10 forwards or 10 backwards. The first person to reach either the top or bottom of the board wins.

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

### **Number games**

Roll two dice. Make two-digit numbers, e.g. if you roll a 6 and 4, this could be 64 or 46. If you haven't got two dice, roll one dice twice. Ask your child to do one or more of the activities below. Count on or back from each number in tens. Add 19 to each number in their head. (A quick way is to add 20 then take away 1.) Subtract 9 from each number. (A quick way is to take away 10 then add back one.) Double each number.

### **Up and down the scales**

Guess with your child the weights of people in your home. Then weigh them (if they agree!). Help your child to read the scales. Record each weight, then write all the weights in order. Repeat after two weeks. What, if any, is the difference in the weights?

### **Bean race**

You need two dice and a pile of dried beans. Take turns to roll the two dice. Multiply the two numbers and call out the answer. If you are right, you win a bean. The first to get 10 beans wins.

### **Make 20**

For this game you need to write out numbers 0 to 20 on a piece of paper. Make them big enough to put counters or coins on. Take turns. Roll a dice. Put a coin on the number that goes with the dice number to make 20, e.g. throw a '4' and put a coin on 16. If someone else's counter is there already, replace it with yours! The first person to have counters on 6 different numbers wins. Now roll two dice, add the numbers together and look for a number to make 20. The first with coins on 10 different numbers wins.

### **Guess my number**

Choose a car number you can see, e.g. 592. Add 10 to the number in your head. Say the answer aloud. Can your child guess which car you were looking at? If so she or he can have a turn next.

### **Secret sums**

Ask your child to say a number, e.g. 43. Secretly do something to it (e.g. add 30). Say the answer, e.g. 73. The child then says another number to you, e.g. 61. Do the same to that number and say the answer. The child has to guess what you are doing to the number each time! Then they can have a turn at secretly adding or subtracting something to each number that you say to them.

### **Cupboard maths**

Ask your child to look at the weights printed on jars, tins and packets in the food cupboard, e.g. tinned tuna 185g; tinned tomatoes 400g; jam 454g. Choose six items. Ask your child to put them in order. Is the largest item the heaviest?

### **Bingo!**

One person has the 2x table and the other has the 5x table. Write six numbers in that table on your piece of paper, e.g.

4 8 15 16 23 42

Roll one or two dice. If you choose to roll two dice, add the numbers, e.g. roll two dice, get 3 and 4, add these to make 7. Multiply that number by 2 or by 5 (that is, by your table number, e.g.  $7 \times 2$  or  $7 \times 5$ ). If the answer is on your paper, cross it out. The first to cross out all six of their numbers wins.

## **Year 4.**

### **Number game 1**

You need about 20 counters or coins. Take turns. Roll two dice to make a two-digit number, e.g. if you roll a 4 and 1, this could be 41 or 14. Add these two numbers in your head. If you are right, you win a counter. Tell your partner how you worked out the sum. The first to get 10 counters wins. Now try subtracting the smaller number from the larger one.

### **Number game 2**

Put some dominoes face down. Shuffle them. Each choose a domino. Multiply the two numbers on your domino. Whoever has the biggest answer keeps the two dominoes. The winner is the person with the most dominoes when they have all been used.

### **Number game 3**

Use three dice. If you have only one dice, roll it 3 times. Make three-digit numbers, e.g. if you roll 2, 4 and 6, you could make 246, 264, 426, 462, 624 and 642. Ask your child to round the three-digit number to the nearest multiple of 10. Check whether it is correct, e.g. 76 to the nearest multiple of 10 is 80. 134 to the nearest multiple of 10 is 130. (A number ending in a 5 always rounds up.) Roll again. This time round three-digit numbers to the nearest 100.

### **Tables**

Practise the 3x, 4x and 5x tables. Say them forwards and backwards. Ask your child questions like: What are five threes? What is 15 divided by 5? Seven times three? How many threes in 21?

### **Measuring**

Use a tape measure that shows centimetres. Take turns measuring lengths of different objects, e.g. the length of a sofa, the width of a table, the length of the bath, the height of a door. Record the measurement in centimetres, or metres and centimetres if it is more than a metre, e.g. if the bath is 165 cm long, you could say it is 1m 65cm (or 1.65m). Write all the measurements in order.

### **Looking around**

Choose a room at home. Challenge your child to spot 20 right angles in it.

### **Dicey division**

You each need a piece of paper. Each of you should choose five numbers from the list below and write them on your paper.

5 6 8 9 12 15 20 30 40 50

Take turns to roll a dice. If the number you roll divides exactly into one of your numbers, then cross it out, e.g. you roll a 4, it goes into 8, cross out 8. If you roll a 1, miss that go. If you roll a 6 have an extra go. The first to cross out all five of their numbers wins.

### **Sum it up**

Each player needs a dice. Say: Go! Then each rolls a dice at the same time. Add up all the numbers showing on your own dice, at the sides as well as at the top. Whoever has the highest total scores 1 point. The first to get 10 points wins.

### **Out and about**

Choose a three-digit car number, e.g. 569. Make a subtraction from this, e.g.  $56 - 9$ . Work it out in your head. Say the answer. If you are right, score a point. The first to get 10 points wins.

### **Dicey tens**

For this game you need a 1–100 square (a snakes and ladders board will do), 20 counters or coins, and a dice. Take turns. Choose a two-digit number on the board e.g. 24. Roll the dice. Multiply the dice number by 10, e.g. if you roll a 4, it becomes 40. Either add or subtract this number to or from your two-digit number on the board, e.g.  $24 + 40 = 64$ . If you are right, put a coin on the answer. The first to get 10 coins on the board wins.

### **Pairs to 100**

This is a game for two players. Each draws 10 circles. Write a different two-digit number in each circle – but not a 'tens' number (10, 20, 30, 40...). In turn, choose one of the other player's numbers. The other player must then say what to add to that number to make 100, e.g. choose 64, add 36. If the other player is right, she crosses out the chosen number. The first to cross out 6 numbers wins.

### **Mugs**

You need a 1 litre measuring jug and a selection of different mugs, cups or beakers. Ask your child to fill a mug with water. Pour the water carefully into the jug. Read the measurement to the nearest 10 millilitres. Write the measurement on a piece of paper. Do this for each mug or cup. Now ask your child to write all the measurements in order.

### **All the sixes**

Time your child while he/she does one or more of these.

Count in sixes to 60.

Count back in sixes from 60 to zero.

Start with 4. Count on in sixes to 70.

Start with 69. Count back in sixes to 3.

Next week, try to beat the record.

### **Leftovers**

Take turns to choose a two-digit number less than 50. Write it down. Now count up to it in fours. What number is left over? The number left is the number of points you score, e.g. Choose 27. Count: 4, 8, 12, 16, 20, 24. 3 left over to get to 27. So you score 3 points. The first person to get 12 or more points wins. Now try the same game counting in threes, or in fives. Can you spot which numbers will score you points?

## **Year 5.**

## Decimal number plates

Each choose a car number plate with three digits.

## P645 CJD

Choose two of the digits, e.g. 4 and 6. Make the smallest and largest numbers you can, each with 1 decimal places, e.g. 4.6 and 6.4. Now find the difference between the two decimal numbers, e.g.  $6.4 - 4.6 = 1.8$ . Whoever makes the biggest difference scores 10 points. The person with the most points wins. Play the game again, but this time score 10 points for the smallest difference, or 10 points for the biggest total.

## Finding areas and perimeters

*Perimeter = distance around the edge of a shape*

*Area of a rectangle = length  $\times$  breadth (width)*

Collect 5 or 6 used envelopes of different sizes. Ask your child to estimate the perimeter of each one to the nearest centimetre. Write the estimate on the back. Now measure. Write the estimate next to the measurement. How close did your child get? Now estimate then work out the area of each envelope. Were perimeters or areas easier to estimate? Why? You could do something similar using an old newspaper, e.g. Work out which page has the biggest area used for photographs. Choose a page and work out the total area of news stories or adverts on that page.

## How much?

While shopping, point out an item costing less than £1. Ask your child to work out in their head the cost of 3 items. Ask them to guess first. See how close they come. If you see any items labelled, for example, '2 for £3.50', ask them to work out the cost of 1 item for you, and to explain how they got the answer.

## Times tables

Say together the six times table forwards, then backwards. Ask your child questions, such as:

Nine sixes?

How many sixes in 42?

Six times four?

Forty-eight divided by six?

Three multiplied by six?

Six times what equals sixty?

Repeat with the seven, eight and nine times tables.

## Tables

Make a times-table grid like this.

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

Shade in all the tables facts that your child knows, probably the 1s, 2s, 3s, 4s, 5s and 10s. Some facts appear twice, e.g.  $7 \times 3$  and  $3 \times 7$ , so cross out one of each. Are you surprised how few facts are left? There might only be 10 facts to learn. So take one fact a day and make up a silly rhyme together to help your child to learn it, e.g. nine sevens are sixty-three, let's have lots of chips for tea!

### **Telephone challenges**

Challenge your child to find numbers in the telephone directory where the digits add up to 42. Find as many as possible in 10 minutes. On another day, see if they can beat their previous total.

Telephone: 01264 738 281

## Year 6.

### TV addicts

Ask your child to keep a record of how long he/she watches TV each day for a week. Then ask him/her to do this. Work out the total watching time for the week. Work out the average watching time for a day (that is, the total time divided by 7). Instead of watching TV, you could ask them to keep a record of time spent eating meals, or playing outdoors, or anything else they do each day. Then work out the daily average.

### Four in a line

Draw a 6 x 7 grid. Fill it with numbers under 100. Take turns. Roll three dice, or roll one dice three times. Use all three numbers to make a number on the grid. You can add, subtract, multiply or divide the numbers, e.g. if you roll 3, 4 and 5, you could make  $3 \times 4 - 5 = 7$ ,  $54 \div 3 = 18$ ,  $(4 + 5) \times 3 = 27$ , and so on. Cover the number you make with a coin or counter. The first to get four of their counters in a straight line wins.

### Rhymes

Make up rhymes together to help your child to remember the harder times-tables facts, e.g.  $6 \times 7 = 42$  phew!  $7 \times 7 = 49$  fine!  $6 \times 8 = 48$  great!

### Favourite food

Ask your child the cost of a favourite item of food. Ask them to work out what 7 of them would cost, or 8, or 9. How much change would there be from £50? Repeat with his/her least favourite food. What is the difference in cost between the two?

### Sale of the century

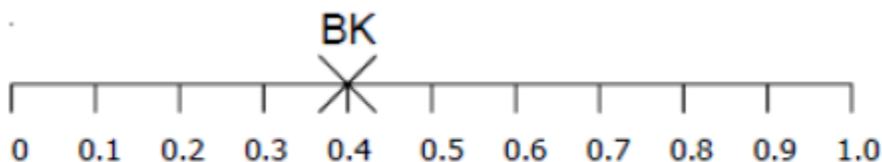
When you go shopping, or see a shop with a sale on, ask your child to work out what some items would cost with:

- 50% off
- 25% off
- 10% off
- 5% off

Ask your child to explain how she worked it out.

### Three in a row

For this game you need a calculator. Draw a line like this:



Take it in turns to choose a fraction, say  $2/5$ . Use the calculator to convert it to a decimal (i.e.  $2 \div 5 = 0.4$ ) and mark your initials at this point on the line. The aim of the game is to get 3 crosses

in a row without any of the other player's marks in between. Some fractions are harder to place than others, e.g. ninths.

### **Flowers**

Take turns to think of a flower. Use an alphabet code, A = 1, B = 2, C = 3... up to Z = 26. Find the numbers for the first and last letters of your flower, e.g. for a ROSE, R = 18, and E = 5. Multiply the two numbers together, e.g.  $18 \times 5 = 90$ . The person with the biggest answer scores a point. The winner is the first to get 5 points. When you play again you could think of animals, or countries

### **Recipes**

Find a recipe for 4 people and rewrite it for 8 people, e.g. 4 people 8 people 125g flour 250g flour 50g butter 100g butter 75g sugar 150g sugar 30ml treacle 60ml treacle 1 teaspoon ginger 2 teaspoons ginger Can you rewrite it for 3 people? Or 5 people?

### **Fours**

Use exactly four 4s each time. You can add, subtract, multiply or divide them. Can you make each number from 1 to 100? Here are some ways of making the first two numbers.

$$1 = (4 + 4) \div (4 + 4)$$

$$2 = (4 \div 4) + (4 \div 4)$$

### **Card game**

Use a pack of playing cards. Take out the jacks, queens and kings. Take turns. Take a card and roll a dice. Multiply the two numbers. Write down the answer. Keep a running total. The first to go over 301 wins!

### **Remainders**

Draw a 6 x 6 grid like this. Choose the 7, 8 or 9 times table. Take turns. Roll a dice. Choose a number on the board, e.g. 59. Divide it by the tables number, e.g. 7. If the remainder for  $59 \div 7$  is the same as the dice number, you can cover the board number with a counter or coin. The first to get four of their counters in a straight line wins!

### **Doubles and trebles**

Roll two dice. Multiply the two numbers to get your score. Roll one of the dice again. If it is an even number, double your score. If it is an odd number, treble your score. Keep a running total of your score. The first to get over 301 wins.

### **Journeys**

Use the chart in the front of a road atlas that tells you the distance between places. Find the nearest place to you. Ask your child to work out how long it would take to travel to some places in England if you travelled at an average of 60 miles per hour, i.e. 1 mile per minute, e.g. York to Preston: 90 miles 1 hour 30 minutes York to Dover: 280 miles 4 hours 40 minutes Encourage your child to count in 60s to work out the answers mentally

### **One million pounds**

Assume you have £1 000 000 to spend or give away. Plan with your child what to do with it,

down to the last penny.