Using & Applying Mathematics Skills
A Parent's Guide
(Reception)

Recognising numbers

Choose a number for the week, e.g. 2.

Encourage your child to look out for this number all the time.

- Can your child see the number 2 anywhere?

at home	- in the kitchen
	- on pages in a book
in the street	- on doors
	- on car number plates
	- on buses
while out shopping	- on the shop till
	- on shelves
	- in shop windows

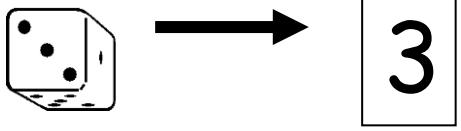
- Find two apples, toys, spoons, straws, sweets, etc.
- Make patterns, such as two knives, two forks, two spoons, two knives, two forks, two spoons…
- Practise writing the number 2.

Choose a different number each week

Dice game

Use a 'dotted' dice and write the numbers 1 to 6 on a sheet of paper (or use the numbered animals).

- Throw the dice. Can your child guess how many dots there are? Check by counting.
- Ask your child which number on the paper matches the dots on the dice.



Build a tower

For this game you need a dice and some building blocks or Lego bricks.

- Take turns.
- Roll the dice.
- Collect the number of bricks to build your own tower.
- The first to 10 wins!

For a change, start with 10 blocks or bricks each. Take away the number on the dice. First to exactly zero wins.

Roll a shape

Cut out 12 shapes.

Make 3 triangles, 3 squares, 3 rectangles and 3 circles.

- Take turns to roll a dice and collect a shape that has that number of sides, e.g. roll a 4, collect a square.
- The first to have four different shapes wins.
- If you can name each shape you go first next time!

Counting and putting numbers in order

Use old magazines, comics or greetings cards.
Cut out pictures of animals, or anything else your child is interested in. Label the animals 1 to 5.

- Shuffle the animals. Put them in order from 1 to 5.
- Remove one animal. Ask your child which number is missing. Repeat with other numbers and more than one missing number.
- Ask your child to say what number comes before or after a number you choose.

When your child can do this, repeat with numbers 1 to 10.

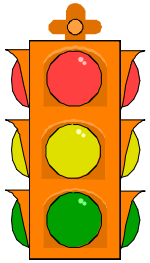
Older children: Extend to 7 times table or decimals.

Using & Applying Mathematics Skills (Year 1)

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?

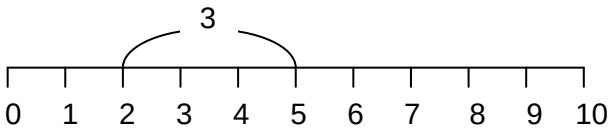


Dice game

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.

The winner is the person with the biggest difference.
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.....

Secret numbers

0123456789

- 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.

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?

Cupboard Maths

Ask your child to help you sort the food cupboard out – putting heavier items on the lower shelf and lighter items on the upper shelf.

Using & Applying Mathematics Skills (Year 2)

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.

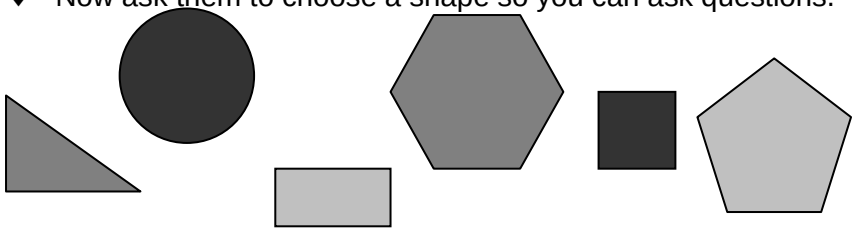
- Place the labels in order, starting with the lowest.
- Say which price is an odd number and which is an even number.
- Add 9p to each price in their head.
- Take 20p from each price in their head.
- Say which coins to use to pay exactly for each item.
- Choose any two of the items, and find their total 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.

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!

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!

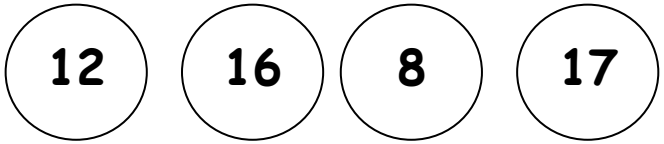
How heavy?

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.

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.

Using & Applying Mathematics Skills (Year3)

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 will it be one hour from now?
- What time was it one hour ago?

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…

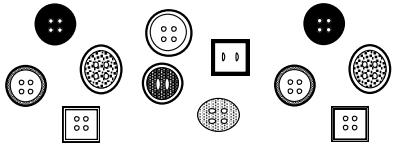
Ask your child to guess in advance how long they think an activity will take. Can they beat their time when they repeat it?

Fractions

Use 12 buttons, or paper clips or dried beans or…

- 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.



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?

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, and then write all the weights in order.

Repeat after two weeks. What, if any, is the difference in the weights?

Number game

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.

Guess my number

Choose a car number you can see, e.g. 592.

P592 CTM

- 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.

Using & Applying Mathematics Skills (Year 4)

Tables
Practise the 3x, 4x, 6x & 8x tables. Say them forwards and backwards.
Ask your child questions like:

What are five threes?	What is 24 divided by 8?
Seven times three?	How many eights in 56?

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.

Mugs
You need a 1 litre measuring jug and a selection of different mugs, cups or beakers.

♦ Choose 2 mugs or any containers.
♦ Estimate which holds the most water.
♦ Use the measuring jug to measure the capacity of each mug or container.
♦ Were you correct?
♦ Calculate the difference between the capacity of the containers.

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.

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

Left overs
♦ 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?

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.

Using & Applying Mathematics Skills (Year 5)

Line it up
You need a ruler marked in centimetres and millimetres.
♦ Use the ruler to draw 10 different straight lines on a piece of paper.
♦ Ask your child to estimate the length of each line and write the estimate on the line.
♦ Now give them the ruler and ask them to measure each line to the nearest millimetre.
♦ Ask them to write the measurement next to the estimate, and work out the difference.
♦ A difference of 5 millimetres or less scores 10 points. A difference of 1 centimetre or less scores 5 points.
♦ How close to 100 points can he / she get?

Guess my number
♦ Choose a number between 0 and 1 with one decimal place, e.g. 0.6.
♦ Challenge your child to ask you questions to guess your number. You may only answer 'Yes' or 'No'. For example, they could ask questions like 'Is it less than a half?'
♦ See if they can guess your number in fewer than 5 questions.
♦ Now let your child choose a mystery number for you to guess. Extend the game by choosing a number with one decimal place between 1 and 10, e.g. 3.6. You may need more questions!

Times tables
Ask your child a different times-table fact every day,
e.g. *What is 6 times 8? Can you use this to work out 12 x 8?*

Target 1000
♦ Roll a dice 6 times.
♦ Use the six digits to make two three-digit numbers.
♦ Add the two numbers together.
♦ How close to 1000 can you get?

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

Finding areas and perimeters

Perimeter = distance around the edge of a shape
Area of a rectangle = length x 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.

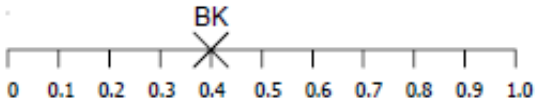
Dicey subtractions
♦ Take turns to roll a dice twice.
♦ Fill in the missing boxes.

400□ - 399□
4002 – 3994

♦ Count on from the smaller to the larger number, e.g *3995, 3996, 3997, 3998, 3999, 4000, 4001, 4002.*
♦ You counted on 8, so you score 8 points.
♦ Keep a running total of your score.
♦ The first to get 50 or more points wins.

Using & Applying Mathematics Skills (Year 6)

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 ÷ 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 x 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.

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 they worked it out.

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?

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

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.

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.