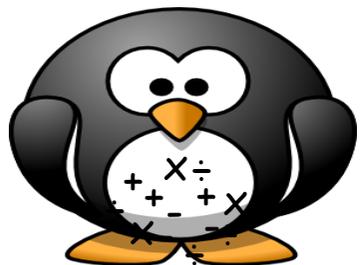


Moulton CEVC Primary School

Helping your child  
at home with maths

(Year 6)





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**Sharpen your mental skills.** Your child's class teacher has a copy of these on a handy little key ring. They are designed to be used informally at the end of the day, whilst the children are lining up, in a spare minute etc and we suggest that you use them in the same way. Each box contains a mental strategy that has been taught and rehearsed regularly with your child. The cards with the green text are particularly tricky, and may contain strategies from the next year group's teaching. They are there as a guide so feel free to take a step back or to extend them as necessary. Your child might excel with some but find others hard—that's perfectly normal!

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**At home and out and about.** Mathematics is everywhere! Have a go at these activities to encourage your child to talk about their mathematics and their methods of calculation.

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**Online...** Some suggestions of websites that contain maths games for your budding mathematicians to have a go at. There are also some explanations to activities that appear on the school website.

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**September...** An overview of the maths that your child will be learning in their new class at the start of September. This is unique to each year group.



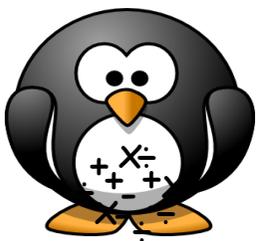
Hello!

Allow me to introduce myself...

I'm Pascal the Penguin! I love mathematics and it would be great if you do too.

Welcome to your mathematical home help ideas! If you find yourself with a few spare minutes at home, have a go at some of these activities. As always, I have placed a strong emphasis on mental strategies and mathematical talk because confident and able mathematicians need to have these in abundance!

Don't forget, your class teacher and Mrs Shipp would love to hear about the things that you do at home so don't forget to go and tell them or better still, write it in your reading record too.



## Sharpen Your Mental Skills

Give your child a table multiplication fact (up to  $10 \times 10$ ) and ask them to derive a related division fact.

E. G

$$"8 \times 4 = 32"$$

$$"32 \div 4 = 8 \text{ or } 32 \div 8 = 4"$$

Ask your child to square (multiply by itself) any number less than and including 12.

E. G

$$3 \text{ squared} = 3 \times 3 = 9$$

Ask your child to count in various step sizes. Bridge through 100s and 1000s

E. G

$$999, 1002, 1005 \dots$$
$$9996, 10,000, 10,004 \dots$$

Ask your child to add together a 3 or 4 digit number by partitioning in TH H T U first.

E. G

$$4321 + 3493 =$$
$$4000 + 3000, 300 + 400, 20 + 90, 1 + 3$$

Ask your child to add numbers close to a multiple of 100 by adjusting.

E. G

$$456 + 98$$

(Add 100 first and then subtract 2)

Ask your child to add numbers close to a multiple of 10 by adjusting.

E. G

$$426 + 49$$

(Add 50 first and then subtract 1)

Ask your child to use their near double knowledge to double two numbers.

E. G

$$70 + 71$$

(Double 70 first and then add 1)

Ask your child to quickly add together numbers by looking for doubles, near doubles and pairs that total 10 or 20 etc..

E. G

$$18 + 7 + 2 + 7 =$$
$$(18 + 2) + (7 + 7)$$

Say a 2 or 3 digit number to your child and ask them to say all of its factors.

E. G

12—Factors are 1, 12, 2, 6, 3, 4

Give your child a 3-digit number and ask them how many you need to add to make

1000.

E. G

$$376 + 624 = 1000$$

Give your child a 4-digit number and ask them how many you need to add to make

10,000

E. G

$$1376 + 8624 = 10,000$$

Ask your child to multiply find the product of three numbers less than 10.

E. G

$$3 \times 4 \times 6 = 72$$

Ask your child to find the difference between two numbers with one decimal place.

E.G  
 $8.7 - 4.3 = 3.5$

Ask your child to find the difference between two 3-digit numbers.

E.G  
 $760 - 580 =$

Ask your child to halve a 2, 3 or 4 digit even number.

E.G  
Half of 36 is 18  
Half of 146 = 73  
Half of 1286 = 643

Ask your child to multiply a number by 10 by moving the digits.

E.G  
 $34 \times 10 = 340$   
 $5.6 \times 10 = 56$

Ask your child to multiply a number by 100 by moving the digits.

E.G  
 $34 \times 100 = 3400$   
 $5.6 \times 100 = 560$

Ask your child to divide a number by 10 by moving the digits.

E.G  
 $34 \div 10 = 3.4$   
 $5.6 \div 10 = 0.56$

Ask your child to divide a number by 100 by moving the digits.

E.G  
 $34 \div 100 = 0.34$   
 $5.6 \div 100 = 0.056$

Ask your child to divide a number by 1000 by moving the digits.

E.G  
 $134 \div 1000 = 0.134$   
 $9756 \div 1000 = 9.756$

Ask your child to multiply a number by 1000 by moving the digits.

E.G  
 $34 \times 1000 = 34000$   
 $5.6 \times 1000 = 5600$

Give your child three numbers and ask them to find four + or - calculations using those numbers.

E.G  
17 18 35  
 $17 + 18 = 35$ ,  $18 + 17 = 35$   
 $35 - 18 = 17$ ,  $35 - 17 = 18$

Ask your child to add together a pair of 3-digit multiples of 10

10  
E.G  
 $370 + 210 =$

Ask your child to subtract a pair of 3-digit multiples of 10

E.G  
 $370 - 280 =$

Give your child a number with one or two decimal places and ask them how many you need to add to get to the next whole number.

E.G

$$3.4 + ? = 4$$

$$2.71 + ? = 3$$

Ask your child to add or subtract a pair of decimal fractions.

E. G

$$2.34 + 6.12 =$$

$$5.3 - 2.1 =$$

Ask your child to find the difference between two numbers that are close to multiples of 1000

E.G

$$5001 - 1997$$

$$6003 - 2998$$

Ask your child to multiply a 2 digit number by 25. (multiply by 100, halve the answer then halve it again)

E.G

$$15 \times 25 =$$

$$\text{First, do: } 15 \times 100 = 1500$$

$$\text{Half of } 1500 \text{ is } 750$$

$$\text{Half of } 750 \text{ is } 375$$

Ask your child to multiply a 2-digit multiple of 10 by a single digit by partitioning

E.G

$$40 \times 6 =$$

$$30 \times 7 =$$

Ask your child to double any number between 1 and 100

E. G

$$\text{Double } 87 = 174$$

Ask your child to double any multiple of 10 between 0 and 1000

E.G

Double 90 is 180

$$\text{Double } 360 = 720$$

Ask your child to find 50% (one half) of a Quantity

E.G

$$50\% \text{ of } 250 \text{ is } 125$$

Ask your child to find a fraction of a quantity by using division.

E. G

$$1/5 \text{ of } 30 = 30 \div 5$$

$$1/3 \text{ of } 66 = 66 \div 3$$

Ask your child to count forwards or backwards in various decimal step sizes.

E. G

$$0.2, 0.4, 0.6, 0.8, 1, 1.2, 1.4...$$

Give your child a time and ask them how many minutes it is until the next O'clock time.

E. G

9:37pm

It is 23 minutes until 10:00pm

Give your child a positive and a negative number and ask them, to find the difference. Add to zero first.

E. G

What's the difference between -5 and 7. Add 5 to get to zero and then add 7 to get to 7.

The difference is 12.

Ask your child to divide a 2 digit number by a decimal fraction.

E. G

$$40 \div 0.1 = 400$$

$$20 \div 0.4 = 50$$

Ask your child to multiply a 2 digit number by a decimal fraction.

E. G

$$40 \times 0.1 = 4$$

$$20 \times 0.4 = 8$$

Ask your child to find a fraction of a 2 or 3 digit number.

E.G

$$3/5 \text{ of } 200 =$$

$$1/5 \text{ of } 200 \text{ is } 40$$

$$3/5 \text{ of } 200 \text{ is } 120$$

Ask your child to find 10% of a number and then use this knowledge to find other percentages.

E. G

$$10\% \text{ of } 250 \text{ is } 25.$$

$$20\% \text{ would be } 50$$

$$40\% \text{ would be } 100 \text{ etc...}$$

Ask your child to find 10% (one tenth) of a Quantity

E.G

$$10\% \text{ of } 250 \text{ is } 25$$

Ask your child to find 25% (one quarter) of a Quantity

E.G

$$25\% \text{ of } 200 \text{ is } 50$$

Ask your child to square (multiply by itself) a multiple of 10.

E.G

$$30 \text{ squared}$$

$$30 \times 30 = 900$$

Ask questions such as *If 4 ice creams cost £2.00, how much would 5 cost? How much would 6 cost?*



# At home and out and about.

Look at numbers on car number plates. Add or multiply them together. Older children could try multiplying or dividing them by 10 and add together to make it tricky.

Ask your child to lay the table. They could count out the cutlery as they go. Older children could answer questions. *"How many knives, forks and spoons would I need in total if I had 24 dinner guests?"*

At the shops, ask your child to find the cheapest/most expensive item.

*Is it in pounds or pence?*

Ask your child what time they think their TV programme is due to finish. Older children could see how long that program is on during 1 week.

Allow your child to cook and bake!

Let them look at the cost of the ingredients and then weight them out.

Give your child some store cupboard items and ask them to put them into weight/capacity order. Ask them to look carefully at the units that are used. *Are they grams or Kgs? L or MI?*

When you're out and about, see if you can find all digits 0-9.

Find two places on a road sign. *Which is the closest? By how many miles is it closer?*

Ask your child to sort items, such as food, into any criteria. Ask them to explain their reasons. Then you do the same!

When you take your child to the shop, ask them to calculate how much change you are due. Your child could help you to find the notes or coins needed to pay.

Choose some family members and friends. Find the sum of their ages. (Or multiply them together if you're an older child!)

Grow a plant and measure how much it grows and how long it takes to grow. You could record the measurements using a table or a graph. Younger children could draw a picture of the plant at different stages and sizes. Also, measure out the water needed to water the plant.

Use an egg timer when cooking. Ask your child to estimate when they think it will ring.



# At home and out and about.

Snakes and ladders, card games, dominoes and other such traditional games are great for maths and reasoning skills.

There are lots of card games in toy shops. (The Early Learning Centre have some lovely games). Your child could earn some money and then buy a treat to play with the family.

Mark the birthdays of friends and family on a calendar. *What day is your birthday on? What day will it be in two days' time?*

Older children could calculate the percentage or fractions of ingredients in a recipe.

Ask your child to imagine/draw a mobile phone key pad.  
*What do the corner digits add up to?*

*What do the numbers on the middle line add up to?*  
Younger children could practise typing in imaginary phone numbers.

How many 2D shapes can you see whilst on your travels? *Can you describe their properties?*

How many 3D shapes can you see whilst on your travels? *Can you describe their properties?*

Ask your child to cut things (such as cake) into equal sections and use the correct terms. *Cut it in half. Cut it into quarters.*

Look together at a phone number. *What's the largest digit? Smallest? What's the total of the digits? Can you write the digits in order?*

Older children, can you spot any percentage signs when out and about? *Why are they used?*

Set your child a money problem.  
*Can you make 10p using exactly 3 coins? What is the largest amount of money I could make with 6 coins? What is the minimum amount of coins that I would need to make 19p?*

Use Google to find an interesting maths problem. Solve it and then bring it in to share in September.



# Online Fun!

## Maths Activities websites

<http://www.maths-games.org/counting-games.html>

<http://www.ictgames.com/payForIt/index.html>

<http://resources.woodlands-junior.kent.sch.uk/maths/>

<http://www.mathplayground.com/games.html>

<http://www.counton.org/games/>

<http://www.topmarks.co.uk/>

<http://www.kenttrustweb.org.uk/kentict/content/games/> (*particularly good for KS1 and reception*)

<http://www.primarygames.co.uk/>

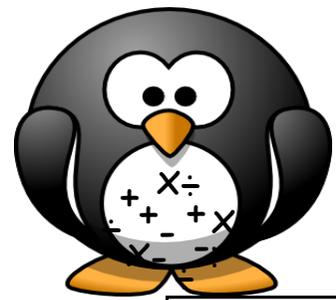
<http://www.bbc.co.uk/bitesize/ks1/maths/>

<http://www.bbc.co.uk/bitesize/ks2/maths/>

<http://www.primaryinteractive.co.uk/maths.htm>

<http://www.oxfordowl.co.uk/maths/treasure/games/>

<http://www.kmprimary.leics.sch.uk/MainFolder/Images/MathsInfo/Maths%20vocabulary%20book.pdf>  
(This booklet shows the vocabulary that children will learn in each year group.)



# Online Fun!

I have added some activities to the website under each class section. Feel free to print them. Most of them only require a dice to play. I have put a suggested age range on each game but below, I have suggested how you could make each game easier or trickier.

Game	Make it easier by...	Make it harder by...
<p><b><u>Wipeout:</u></b> This game is great for speeding up addition skills, practicing adding when crossing over tens boundaries and allowing children to choose the most efficient strategy.</p>	<p>Lower the winning total. Pair up younger children with an older sibling or an adult. Encourage jottings to aid mental calculations.</p>	<p>Make the total a lower number but then make the dice rolls decimals. E. G The winning total could be 5. If I throw a 3, it becomes 0.3 etc... Add the decimals to eventually get to 5.</p> <p>Make the total larger but make the dice rolls multiples of 10. E. G. the winning total could be 500. If I roll a 6, it could be worth 60.</p>
<p><b><u>Count on:</u></b> This game helps children to learn their addition pairs to 10 and to calculate the difference between two numbers.</p>	<p>You could lower the winning total.</p>	<p>You could raise the winning total.</p>
<p><b><u>The hundred square:</u></b> Lots of ideas to help your child with calculation.</p>	<p>Ideas are on the sheet.</p>	



# Digit dilemmas!

I have added some digit cards to the website for you to print off. Below are some activities that you could try with the digit cards.

Lay the digit cards face down. Whoever chooses the highest number wins. You could each choose two digits and see who could make the highest number. Older children could see who could make the highest decimal number?

Print off several copies and place them face down. Play a pairs game and look for bonds to 10.

For younger children, make a sequence of numbers but miss one out. *Which is missing? How do you know?*

*E.G 1, 2, 3, 4 \_\_ 6, 7  
23, 24, 25 \_\_ 27, 28*

Choose two or three cards. *How many different numbers could you make using just those digits?* Predict how many before you try.

Choose two or three cards and find their product. (Multiply them together). *Can you find two other numbers that you could multiply together and get the same answer? Why? Why not?*

Say a number to your child and ask them to make the number with the cards as quickly as you can. You could make the number as high or as low as you want or extend to decimal numbers.

Choose two or three cards. Give your child clues about the number you have made.

*My number is prime*

*My number is larger than 30 etc*

Make it as easy or as hard as you want.

Choose two cards (or two pairs of two cards) and work out the difference between the numbers. (Subtract the smaller from the larger)

Use some of the digits to make the start of a sequence. E. G 2, 4...

*What might come next? Why 6?*

*Why 8? Are there any other*

*Possibilities? Can you explain the rule?*



Next year, you will probably be learning to...

- Use decimal notation and extend my place value knowledge
- Compare decimals
- Round whole numbers and decimals
- Position negative numbers on a number line
- Understand more about integers
- Find highest common factors
- Find lowest common multiples
- Find squares of numbers up to  $12 \times 12$  and their roots
- Simplify fractions
- Add and subtract fractions
- Calculate percentages
- Use ratio and proportion to solve problems
- Calculate with brackets
- Solve problems using mental maths and calculators
- Use letters to represent numbers
- Simplify equations
- Solve simple equations
- Recognise and extend number sequences
- To use mapping diagrams
- Plot graphs using co-ordinates