Ysgol Pen Barras



Numeracy Websites

Here are some useful websites that include various games and activities to support Numeracy work for Years 1 to 6.

www.FunBrain.co.uk www.mathzone.co.uk www.mathzone.co.uk www.primarygames.co.uk www.teachingtables.co.uk www.woodlands-junior.kent.sch.uk www.echalk.co.uk/Maths/maths.aspx www.coxhoe.durham.sch.uk/curriculum-links/numeracy www.topmarks.co.uk www.sgfl.org.uk/games/games/maths http://www.learnyourtables.co.uk/en/index2.htm





Ysgol Pen Barras



Numeracy at School

Multiplication & Division

Having problems with homework?

Can't understand our methods?

"This isn't the way we did sums when we were at school!"

Have a look at the maths guidelines in our leaflet. Hopefully they will help! Multiplication & Division



Content Page

Year 1 methods

Year 2 methods

Year 3 methods

Year 4 methods

Year 5 methods

Year 6 methods

<u>Table 2</u>		0 + - 44	North Carl
$0 \times 2 = 0$	lapie	2 to 1 (EN BARRA
$1 \times 2 = 2$ $2 \times 2 = 4$			
3 x 2 = 6 4 x 2 = 8	<u>Table 5</u>	<u>Table 3</u>	<u>Table 7</u>
5 x 2 = 10 6 x 2 = 12	0 x 5 = 0 1 x 5 = 5	$0 \times 3 = 0$ 1 × 3 = 3	0 x 7 = 0 1 x 7 = 7
7 x 2 = 14 8 x 2 - 16	$2 \times 5 = 10$	$2 \times 3 = 6$	$2 \times 7 = 14$
$9 \times 2 = 10$ $9 \times 2 = 18$	$3 \times 5 = 15$ $4 \times 5 = 20$	3 x 3 = 9 4 x 3 = 12	$3 \times 7 = 21$ 4 X 7 = 28
$10 \times 2 = 20$	5 x 5 = 25 6 x 5 = 30	5 x 3 = 15 6 x 3 = 18	5 x 7 = 35 6 x 7 = 42
<u>Table 4</u>	7 x 5 = 35	$7 \times 3 = 21$	7 x 7 = 49 8 x 7 = 56
$0 \times 4 = 0$ 1 × 4 = 4	8 x 5 = 40 9 x 5 = 45	9 x 3 = 24 9 x 3 = 27	9 x 7 = 63
$2 \times 4 = 8$	10 x 5 = 50	10 × 3 = 30	$10 \times 7 = 70$
$3 \times 4 = 12$ $4 \times 4 = 16$	<u>Table 10</u>	<u>Table 6</u>	<u>Table 9</u>
5 x 4 = 20 6 x 4 = 24	$0 \times 10 = 0$ 1 × 10 = 10	$0 \times 6 = 0$	0 x 9 = 0 1 x 9 = 9
7 x 4 = 28 8 x 4 - 32	$1 \times 10 = 10$ 2 × 10 = 20	$2 \times 6 = 12$	$2 \times 9 = 18$
9 x 4 = 36	$3 \times 10 = 30$ $4 \times 10 = 40$	3 x 6 = 18 4 x 6 = 24	3 x 9 = 27 4 x 9 = 36
10 × 4 = 40 Table 8	$5 \times 10 = 50$ $6 \times 10 = 60$	5 x 6 = 30 6 x 6 = 36	5 x 9 = 45 6 x 9 = 54
<u></u>	7 × 10 = 70	7 × 6 = 42	7 x 9 = 63
0 × 8 = 0 1 × 8 = 8	8 × 10 = 80 9 × 10 = 90	8 x 6 = 48 9 x 6 = 54	8 x 9 = 72 9 x 9 = 81
2 × 8 = 15	10 × 10 = 100	10 × 6 = 60	10 × 9 = 90
3 x 8 = 24 4 x 8 = 32			
5 x 8 = 40	It is importe	int that the ch	ildren learn
$7 \times 8 = 56$	the	ir tables fluen	tly.
8 x 8 = 64 9 x 8 = 72			
$10 \times 8 = 80$			

Year 6 Multiplication & Division



175r5

• Practice Long division method using larger numbers.

e.x. 2455 ÷ 14

		1/3/3
• <i>Step 1</i> – Think of a number	14	2455
head with 14 for example. 10 or	100 x 1 4 -	<u>1400</u>
100. • <i>Step 2</i> – Take away this		1055
amount from the total.	50 x 1 4 -	<u>700</u>
• Step 3 – Repeat this process to		355
reduce the total.	10 x 1 4 -	140
• <i>Step 4</i> – Once the total has come down to a number which		<u>215</u>
is less than 14 e.x. 5 you have	10 x 1 4 -	140
solved the question.		<u> </u>
•For example the answer to this	<u>+ 5</u> x14 -	<u>70</u>
question is 175 remainder 5.	<u>175</u>	5

answer
(175 x 14) + 5 =
2455

To check the

Knowing your time tables is very helpful when solving these kind of questions.

Year 1

Multiplication & Division



• Practice counting forwards and backwards in sequences of 2, 5 and 10.

- e.x. 10, 12, 14, 16, 18, 20..... 15, 20, 25, 30, 35, 40.... 90, 80, 70, 60, 50, 40....
- Practice doubling numbers up to 10.

double 1 = 2	double 2 = 4
double 3 = 6	double 4 = 8
double 5 = 10	double 6 = 12
double 7 = 14	double 8 = 16
double 9 = 18	double 10 = 20

- Understand that divide by 2 is the same as halving.
- e.x. What is the half of 8? Share the objects into two equal sets.



Multiplication & Division



- Practice counting in steps of 2, 5, 10, 3 & 4. (Forwards and backwards).
- e.x. 0, 3, 6, 9, 12, 15, 18..... 40, 36, 32, 28, 24, 20....
- Understand that multiplication is like adding over and over again.

6 x 5 (6 sets of 5) = 5 + 5 + 5 + 5 + 5 + 5 = 30

- Understand the relationship between multiplication and division.
 - 3 x 5 = 155 x 3 = 1515 ÷ 3 = 515 ÷ 5 = 3
- Solve Multiplication and Division word problems.



e.x. A spider has 8 legs, how many legs has 2 spiders?

	<u>Table 2</u>	<u>Table 5</u>	<u>Table 10</u>
• Learn table 2, 5, 10, 3 a 4.	$0 \times 2 = 0$ $1 \times 2 = 2$ $2 \times 2 = 4$ $3 \times 2 = 6$ $4 \times 2 = 8$ $5 \times 2 = 10$ $6 \times 2 = 12$ $7 \times 2 = 14$ $8 \times 2 = 16$ $9 \times 2 = 18$ $10 \times 2 = 20$	$0 \times 5 = 0$ $1 \times 5 = 5$ $2 \times 5 = 10$ $3 \times 5 = 15$ $4 \times 5 = 20$ $5 \times 5 = 25$ $6 \times 5 = 30$ $7 \times 5 = 35$ $8 \times 5 = 40$ $9 \times 5 = 45$ $10 \times 5 = 50$	$0 \times 10 = 0$ $1 \times 10 = 10$ $2 \times 10 = 20$ $3 \times 10 = 30$ $4 \times 10 = 40$ $5 \times 10 = 50$ $6 \times 10 = 60$ $7 \times 10 = 70$ $8 \times 10 = 80$ $9 \times 10 = 90$ $10 \times 10 = 100$
	10 X 2 = 20	$10 \times 5 = 50$	$10 \times 10 = 100$

Year 6

Multiplication & Division



- Practice **Short division** method e.x. 1674 ÷ 13 =
- *Step 1* Does 13 go into 1? No, so place a 0 above the 1.
- Step 2 Does 13 go into 16? Yes once.

Place 1 above the 6, and the remaining 3 in front of the 7.

• *Step 3* - Does 13 go into 37? Yes, twice. Place 2 above the 7, and the remaining 11 in front of the 4.

• Step 4 - Does 13 go into 114? Yes 8 times.

Place 8 above the 4, insert a decimal point and **0 0 0** after it.and place the remaining 10 in from of the first 0.

- *Step 5* Now insert a decimal point after the 8. Does 13 go into 100? Yes, 6 times. Place the 6 above the first 0, and the remaining 9 in front of the second 0.
- *Step 6* Does 13 go into 90? Yes 6 times. Place the 6 above the second 0.

• **Step 7** – Finally, does 13 go into 120? Yes 9 times. Place the 9 above the final 0. You've solved the question!

• Multiply numbers and decimals e.x. 1.4cm x 20.



• Solve Multiplication and division word problems.

e.x. A shirt and tie costs £45, a shirt and jacket costs £155, and a jacket and tie costs £120. How much would a shirt on its own cost?



Multiplication & Division



- Use mental strategies to recall multiplication tables up to 10 x 10 and use to solve division problems
- Practice multiplying and dividing numbers and decimals by 10, 100 a 1000.

e.x.	6.5 x 10 = 65	6.5 x 100 =	650	6.5 x 1000 =	6,500
	0.3 x 10 = 3	0.3 x 100 =	30	0.3 x 1000 =	300
	$80 \div 10 = 8$ 27 ÷ 10 = 2.7	80 ÷ 100 =	0.8	80 ÷ 1000 =	0.08
	2/ 7 10 - 2./	$27 \div 100 -$	0.27	$27 \div 1000 -$	0.027

Multiply 2- and 3-digit numbers by a 2-digit number
 e.x. 123 x 32 =

		30	2	3000
<u>Grid method</u>	100	3000	200	200
	20	600	40	9 0 4 0
	3	90	6	+ 6 3936
				1

• Continue to use the long multiplication method to multiply 3 digit numbers by x 2 digit numbers.

• **Step 1** – Place a **0** under the 6. Multiply 3 with 5 which is 15. Place the 5, and remember the 1. Then multiply 3 and 4 which is 12, plus 1 which is 13. Place the 3 and

remember the 1. Then multiply 3 and 2 which is 6 and add the 1 which makes 7.

• *Step 2* – Multiply 6 and 5 which is 30. Place the 0, and remember the 3. Then multiply 6 and 4 which is 24, add the 3 which is 27. Place the 7 and remember the 2. Finally multiply 6 and 2 which is 12, add 2 which is 14.

• Step 3 – Finally add 7350 + 1470 to come to the answer.

Year 2

Multiplication & Division



	Ta	ble	2 3	<u> </u>				<u>T</u>	ble	<u>e</u> 4	ŀ
)	x	3	=	0		C)	x	4	=	0
l	x	3	=	3		1		x	4	=	4
2	x	3	=	6		2)	x	4	=	8
3	x	3	=	9		3	;	x	4	=	12
1	x	3	=	12		4	ŀ	x	4	=	16
5	x	3	=	15		5	5	x	4	=	20
5	x	3	=	18		6)	x	4	=	24
7	x	3	=	21		7	,	x	4	=	28
3	x	3	=	24		8	3	x	4	=	32
)	x	3	=	27		9)	x	4	=	36
n	~	â	-	30		10	C	x	4	=	40

Useful Websites

- <u>http://www.learnyourtables.co.uk/en/index2.htm</u>
- http://www.topmarks.co.uk/
- <u>http://www.bbc.co.uk/schools/starship/maths/</u>
- <u>http://www.primaryresources.co.uk/maths/maths.htm/</u>
- <u>http://nrich.maths/</u>
- https://hwb.wales.gov.uk/
- <u>http://resources.woodlands-junior.kent.sch.uk/maths/</u>
- http://mathszone.co.uk/
- <u>http://www.funbrain.com/brain/MathBrain/MathBrain.html</u>
- <u>http://www.crickweb.co.uk/ks1numeracy.html</u>
- <u>http://www.bbc.co.uk/cymru/dysgu/camaucyfri/</u>
- <u>http://www.maths-games.org/</u>
- <u>http://www.bbc.co.uk/bitesize/ks1/maths/</u>

Multiplication & Division



• Recall 2, 3, 4, 5 and 10 multiplication tables and use to solve multiplication and division problems.

• Understand that Table 6 is the double of Table 3.



• Understand that multiplication is like adding over and over again.

6 x 4 (6 sets of 4) = 4 + 4 + 4 + 4 + 4 + 4 = 24

• Understand that multiplying a number by 6 is the same as multiplying by 3 and then doubling the answer.

 $6 \times 6 = (3 \times 6 = 18) + (3 \times 6 = 18) =$

18 + 18 = 36

- Solving multiplication and division word problems
- e.x. 3 people spend £6 each. How much do they all spend in total?

Year 5

Multiplication & Division



72

<u>72</u>

0

• Practice the **Long multiplication** method.

 Step 1 – Place 0 under the 8. Multiply 2 with 6 which is 12. Place the 2, and remember the 1. Then multiply 2 and 3 which is 6 and add 1 which is 7. Step 2 – Multiply 8 and 6 which is 48. Place the 8, and remember the 4. Then multiply 8 and 3 which Is 24 and add the 4 which is 28. Step 3 – Finally add 720 and 288 to get the answer. 	$ \begin{array}{r} 3 \ 6 \\ \underline{x \ 2 \ 8} \\ 7 \ 2 \ 0 \\ + \ 2 \ 8 \ 8 \\ \underline{100 \ 8} \\ 1 \end{array} $
• Practice Short division method e.x. 156 +	+ 12 =
• Step 1 – Does 12 go into 1? No, so place a 0	013
above number 1.	156
• Step 2 – Does 12 go into 15? Yes once. Place 1 4– 1 above the 5, and the remaining 3 before the 6.	
• <i>Step 3</i> – Does 12 go into 36? Yes, 3 times. Place the 3 above the 6.	<u>answer.</u>
1	2 x 13 = 156
 Practice Long division e.x. 192 ÷ 12 = 	
• Step 1 – Think of a number	16
which is easy to multiply in your12head with 12e.x. 5 or 10.	192
• Step 2 – Take away this 10 x 12 -	120

- Step 2 Take away this
amount from the total. 10×12 -• Step 3 Repeat this process to
reduce the total. You've then
solved the question. $+ 6 \times 12$ -
16
- Solving multiplication and division word problems

e.x. There were 18 animals on a farm. Some were chickens and some were sheep. The animals together had a total of 50 legs. How many chickens and sheep were there?

Year 5 Multiplication & Division



Use mental strategies to recall multiplication tables for
2, 3, 4, 5, 6, 7, 8, 9 and 10 and use to solve division

problems.		Ta	ble	2 7	-	<u>Table 9</u>					
	0	×	7	=	0		0	×	9	=	0
	1	x	7	=	7		1	×	9	=	9
	2	x	7	=	14		2	×	9	=	18
	3	x	7	=	21		3	x	9	=	27
	4	x	7	=	28		4	x	9	=	36
	5	x	7	=	35		5	x	9	=	45
	6	x	7	=	42		6	x	9	=	54
	7	x	7	=	49		7	×	9	=	63
	8	x	7	=	56		8	×	9	=	72
	9	x	7	=	63		9	×	9	=	81
	10	×	7	=	70		10	x	9	=	90

• Practice multiplying and dividing numbers and decimals by 10 and 100.

e.x.	14 x 10 = 140	14 x 100 = 1400
	0.75 x 10 = 7.5	0.75 x 100 = 75
	480 ÷ 10 = 48	480 ÷ 100 = 4.8
	$13 \div 10 = 1.3$	$13 \div 100 = 0.13$

• Continue to practice using the grid method to multiply 2-digit numbers by 2-digit numbers e.x. 36 x 28 =



Year 3

Multiplication & Division



• Practice multiplying and dividing whole numbers to 100 by 10.

e.x.	6 x 10 = 60	160 ÷ 10 = 16
	15 x 10 = 150	280 ÷ 10 = 28
	89 x 10 = 890	930 ÷ 10 = 93

• Introduce the grid method to multiply 2-digit numbers with 1-digit number e.x. 23 x 5. Solit the 23 to 20 and 3, then multiply both by 5. Add the totals of both boxes.

Grid method	20 3		100	
5	100	15	+ 15 <u>115</u>	

 Another method which is introduced is the <u>Short</u> <u>multiplication</u> method.
 2 3

	25
5 times 3 = 15, write the 5 and remember the	x 5
1. 2 times 5 is 10, then add the 1 which is 11.	
The total is therefore 115.	<u>115</u>
	1

- Practice **Short division** e.x. 48 ÷ 3 =
- *Step 1* Does 3 go into 4? Yes, once, so place the 1 above the 4 and put the remaining 1 in front of the 8.

• *Step 2* – Does 3 go into 18? Yes, **6** times exactly, so place the 6 above the 8. To check your solution use the inverse method.



<u>To check the</u> <u>answer</u>

16 x 3 = 48

Multiplication & Division



- Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8, and 10 and use to solve division problems.
- Understand that Table 8 is the double of Table 4.

<u>Table 4</u>		<u>Table 8</u>							
0;	x 4	=	0		0	x	8	=	0
1 >	x 4	=	4		1	х	8	=	8
2 >	× 4	=	8		2	×	8	=	16
3 >	× 4	=	12	Double	3	×	8	=	24
4 ;	× 4	=	16	v7	4	x	8	=	32
5 2	× 4	=	20	XZ	5	x	8	=	40
6 >	× 4	=	24		6	x	8	=	48
7 >	× 4	=	28		7	x	8	=	56
8 >	× 4	=	32		8	x	8	=	64
9 >	× 4	=	36		9	x	8	=	72
10 ;	× 4	=	40		10	x	8	=	80

• Understand that multiplying a number by 8 is the same as multiplying by 4 and then doubling the answer.

8 x 5 = (4 x 5) = 20 20 x 2 = 40

• Practice multiplying and dividing numbers by 10 and 100.

e.x.	8 x 10 = 80	8 x 100 = 800
	25 x 10 = 250	25 x 100 = 2500
	1500 ÷ 10 = 150	1500 ÷ 100 = 15
	3200 ÷ 10 = 320	3200 ÷ 100 = 32

Solving multiplication and division word problems

e.x. Mike wants to saw a pipe into 7 equal pieces. If it takes him 4 minutes to cut 1 piece, how long will it take him to finish his work?

Year 4

Multiplication & Division



• Practice multiplying and dividing 3 digit numbers with 1 digit number e.x. 213 x 4 =

				800
Grid method	200	10	3	40
r			-	+ 12
4	800	40	12	852

• Continue practicing the **<u>Short multiplication</u>** method.

2	1	3
x		4
8	5	2
	1	

• Practice **Short division** method for example 153 ÷ 4 which gives an answer with a remainder.

038r1

- *Step 1* Does 4 go into 1? No, so place a 0 above the 1.
- *Step 2* Does 4 go into 15? Yes, 3 times. Place 3 above the 5 and the remainder **3** in front of the 3.
- *Step 3* Does 4 go into 33? Yes 8 times, so place 8 above the 3 and the remainder 1.

To check your answer.

(38 x 4) + 1 = 153