Level 4 Homework booklet 1

NAME_				
TEACHE	R			

Task	Topic	Date Set	Date Completed	\odot	
1	Mental Calculations				
2	Multiplication facts				
3	Negative Numbers				
4	Written Methods				
5	Multplying Decimals				
6	Solving Problems				
7	Checking Results				
8	Number Patterns				
9	Place Value				
10	Ordering Decimals				
11	Sequences				
12	Non-Calculator Number 1				

After you have completed each homework self-assess your understanding and the date you completed it

My Maths

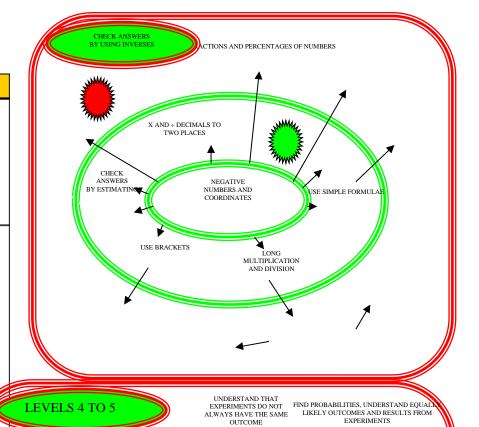
Please see back cover for MyMaths tasks

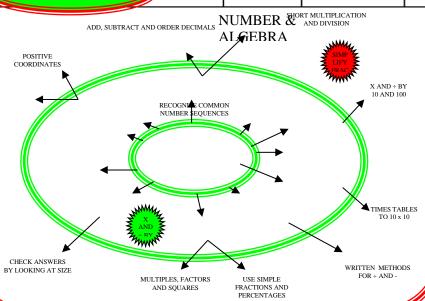
<u>Parents</u>

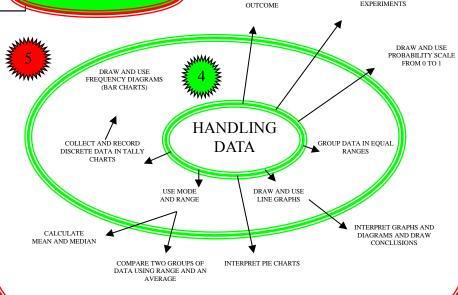
Please read note on back cover

MyMaths Assessment of Students Progress

	1.10g.000			
Numbers	Calculating	Algebra	Shape	Data
Decimal Places Rounding Decimals Multiply Decimals by 10 and 100 Equivalent Fractions Comparing Fractions	Add and Subtract Decimals Dixide Decimals by Whole Numbers Multiply Decimals by Whole Numbers Multiply Two Decimals Fractions of Amounts Multiply Triple Digits Percentages of Amounts 2 Proportion Ratio Dixiding 1 Long Dixiding Fractions Negative Numbers 2 Order of Operations Simple Interest Best Buys	Coordinates 2 Rules and Formulae Simplifying 1 Substitution 1 Single Brackets	Metric Conversion Angle Reasoning Measuring Angles Angle Sums Constructing Triangles Converting Measures Scale Finding Heights May Scales Scale Drawing Imperial Measures	All averages Mean and Mode Median and Range Reading Pile Charts Probability intro Simple Probability
Dividing by 10 and 100 Rounding to 10, 100 Number Lines Complements Fractions to Decimals Improper and Mixed Fractions Fractions Fractions Fractions Fractions Fractions Fractions Ratio Introduction Square and Cubes Squares and Triangles Ordering Decimals Decimal Place Value Counting Place Value Fractions Simple Equivalent Fractions Estimates with Decimals	Estimating introduction Money Calculations Diletion Chunking Diletion Chunking Diletion Chunking Diletion Granifors Doubling and Halving Multiply Single Digit Multiply Double Digits Multiplying by 10 and 100 Percentages of Amounts 1 Time Calculations Number Facts and Doubles 4 Sums Lising 10s. 100s and 1000s Milets Sums All Numbers 7 Times Tables 9 Times Tables 9 Times Tables 12 Times Tables 13 Milet Tables 2 to 12 Money Problems Acting Technals	Coordinates 1 Simple Equations Function Machines Sequences	Area of Rectanglies Units of Length Lines and Quadrillateralis Units of Capacity Units of Mass Nets of 3D Shapes Perimeter Lines of Symmetry Rotation Symmetry Time and Timetables Properties of Trianglies	Line Graphs Two Way Tables
n	E SIMPLE FORMULA	E IN WORDS		
		· SHO	DT MULTIPLICATION	W///







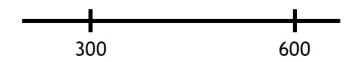
MENTAL CALCULATION

Name:

<u>Assessment Criteria:</u> Use a range of mental methods of computation with all operations

No calculators allowed!

1. a) Mark the numbers 297 and 602 on this number line:



b) Show how you could use this to help calculate 602 - 297

2. Write down an explanation of how you would calculate 72 - 38 in your head.

3. Work out the value of $160 \div 4$. Explain how you found the answer.

4. The temperature in Fort William one morning is 3°C. This is 7°C warmer than it was the previous morning. What was the temperature on the previous morning?

°(

5.	Complete the following statements by finding the value	of the missing
	number:	

Overall I think my success level is:	Low	High
Overall, I think my success level is:	0 0	\circ

Q	MENTAL CALCULATION	©	8
	I can calculate mentally a difference such as 8006 - 2993		
	I can use knowledge of tables and place value in calculations with multiples of 10 such as $180 \div 3$		
	I can carry out simple calculations involving negative numbers in context		
	I understand 'balancing sums' including those using division		
	I can develop my own strategies for solving problems		
	I can present information and results in a clear and organised way		

I need to practise ...

Write one number at the end of each equation to make it correct. Example

(a)	400 + 150 = 500 +	1 mark
(b)	14 + 6 = 4 +	1 mark
(c)	37 - 20 = 27	1 mark
(q)	6 × 5 = 3 ×	1 mark
(e)	38 + 17 = 28 +	1 mark
(f)	38 - 17 = 28	1 mark
(g)	40 × 10 = 4 ×	1 mark
(h)	7000 ÷ 100 = 700 ÷	1 mark

Name:

Assessment Criteria: Recall multiplication facts up to 10×10 and quickly derive corresponding division facts

No calculators allowed!

1. Work out the following calculations:

e)
$$3 \times 2 =$$

2. What is the connection between the results for the $4\times$ table and the results for the $2\times$ table?

3. Using your results of the 4 \times table, write the first 5 numbers in the 8 \times table.

4. How can you use 10×7 to help you find the 9^{th} multiple of 7?

5. $8 \times 4 = 32$. Use this to help you write down the answers to the following:

6. Write down five multiplication and division facts that use the number 72

Overall, I think my success level is:

Q	MULTIPLICATION FACTS	<u>©</u>	8
	I know my 2, 5 and 10 times tables		
	I know my 3, 4 and 9 times tables		
	I know my 6, 7 and 8 times tables		
	I can derive multiplication facts to 10×10 , using facts that I already know		
	I can derive division facts from known multiplication facts		
	I can develop my own strategies for solving problems		
1	and to practice	'	

I need to practise ...

TASK 3

NEGATIVE NUMBERS

Level 4 question

When the wind blows it feels colder. The stronger the wind, the colder it feels. Copy the table and fill in the gaps. The first row is done for you.

Wind strength	Temperature out of the wind	How much colder it feels in the wind	Temperature it feels in wind
Moderate breeze	5	7 degrees colder	-2
Fresh breeze	-8	11 degrees colder	*****
Strong breeze	-4	degrees colder	-20
Gale	1001/11	23 degrees colder	-45
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			3 marks

the difference b 5 and 1 = 4	petween			
-3 and 6 = 9				
te down the diff	erences between			
-6 and 3		d)	-3 and 0	
-9 and -3		e)	-4 and 3	
4 and -6		f)	2 and -1	
	the difference b 5 and 1 = 4 -3 and 6 = 9	the difference between 5 and 1 = 4 -3 and 6 = 9 ite down the differences between -6 and 3 -9 and -3	the difference between 5 and 1 = 4 -3 and 6 = 9 ite down the differences between -6 and 3 d) -9 and -3 e)	the difference between 5 and 1 = 4 -3 and 6 = 9 ite down the differences between -6 and 3 d) -3 and 0 -9 and -3 e) -4 and 3

2) Work out

WRITTEN METHODS

Name:

<u>Assessment Criteria:</u> Use efficient written methods of addition and subtraction and of short multiplication and division

No calculators allowed!

1) Calculate the following:

a.
$$1202 + 45 + 367$$

a.
$$624 \times 8$$

3) There are errors in the following calculations. For each one, find the error that has been made, and also find the correct answer

Calculation	Error	Correct solution
1 2 . 3 + 9 . 8 2 1 . 1 1		
4 . 0 7 - 1 . 5 3 . 5 7		

Calculation	Error	Correct	solution
3 5 8 + 2 6 4 1 1 1 4			
5 7 × 3 1 5 2 1			
1 3 . 1 5 6 6			
Overall, I think my success level	is:		Low High

Q	WRITTEN METHODS	©	8
	I can find sums and differences of numbers to two decimal places		
	I can find totals of more than two numbers		
	I can use the grid method and/or partitioning for short multiplication; for example 57×3		
	I can carry out short division; for example, 66 ÷ 5		
	I can present information and results in a clear and organised way		

I need to practise ...

MULTIPLYING DECIMALS

Name:

<u>Assessment Criteria:</u> Multiply a simple decimal by a single digit No calculators allowed!

- 1) Show how you would calculate 3.4×7
- 2) a. Show how you would calculate 2.9×8
 - b. How could you check your answer is about right?
- 3) $0.3 \times 9 = 2.7$. How could you use this to help you calculate 5.3×9 ?
- 4) How would you calculate 0.5×6 ?
- 5) a. Show how you would calculate 6.4×9
 - b. How would you use this answer to work out 6.4×0.9 ?
- 6) What would be your estimate of 0.9×7.3 ? Explain why.

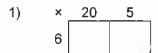
7) Explain why $9.3 \times 9 = 83.7$		
Overall, I think my success level is:	Low High	

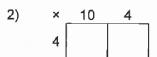
Q	MULTIPLYING DECIMALS	<u>©</u>	8
	I can multiply a decimal by a whole number less than 10		
	I can check that my answer makes sense		
	I can use partitioning to help multiply a whole number by a decimal		
	I can present information and results in a clear and organised way		

I need to practise ...

Section A

Copy the grids to multiply the numbers.







Now draw the appropriate grids to work out these multiplications.

4)

Level 4

6)
$$3 \times 65$$

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Name:

<u>Assessment Criteria:</u> Solve problems with or without a calculator

1. The multi-storey car park in Hereford has 8 levels and 40 cars can park on each level. How many cars can park there?
2. In a Year 7 class of 32 pupils, ¾ of them have pets. Of these, 11 have a dog. How many of the pupils have other kinds of pet?
3. This recipe is for 4 people for Yorkshire pudding requires the following:
100g flour, pinch of salt, 1 beaten egg, 300ml milk, 25g lard or butter
What quantities would be needed for 12 people?
flour
salt
beaten egg
milk lard or butter
4. In the sale I bought these clothes at $\frac{1}{2}$ price:
Jeans £14, T-Shirt £6.50, Socks £2.75, Boxers £3.95
How much was the original price of each item?
Jeans: £
T-Shirt: £
Socks: £
Boxers: £

L4CALC5 © B.P.Sharp 2009

	 5. A train leaves Hereford Station at 12.58 and arrives at Cardiff Central at 14.10. Emma thinks that the journey has taken 1.52 hours. Is she right? Explain your answer. 6. A full jug holds 2 litres of lemonade. A full glass holds ¼ litre. How many glasses will the jug fill? Show how you worked out your answer. 				
Ove	rall, I think my success level is:				
Q	SOLVING PROBLEMS	<u></u>	8		
ų					
	I can interpret word problems				
I can choose when it is appropriate to use a calculator					

Q	30EVING I ROBLEMS	
	I can interpret word problems	
	I can choose when it is appropriate to use a calculator	
	I can solve word problems	
	I can use my own strategies in applying mathematics to practical contexts	
l ne	eed to practise	

CHECKING RESULTS

Name:

<u>Assessment Criteria:</u> Check the reasonableness of results with reference to the context or size of numbers

No calculators allowed!

1. These estimations are not very accurate. Show how you would improve them.



(b) $11 \times 19 \approx 100$

(c) $94 \times 106 \approx 11000$

.

(d) $55 \div 6 \approx 5.5$

.

2. Bob, Thelma, Terry and June shared £7965 equally from a gift given by their Aunt Sally. Roughly how much would they have received each?

£

3. A primary school has 470 pupils and 21 teachers. Mrs Hume is organising a theatre trip for the school and asks her class to work out how many 53-seater coaches she needs to book. Jack says that she needs 449 coaches. What do you think to Jack's answer?

L4CALC6

4.	Circle the best answer for each of the following calculations.	Write down
	the reason for your decision in the box provided.	

	209	
19 × 21	399	
	1921	
	1236	
598 × 11	6578	
	15780	
	7802	
7896 ÷ 94	8	
	84	

5. Look at the calculation here:

Overall, I think my success level is:

Low High

O O O

Q	CHECKING RESULTS	©	8
	I can check results are reasonable by using the size of the numbers involved		
	I can check results are reasonable by using the context of the problem		
	I can develop my own strategies for solving problems		
	I can use my own strategies within mathematics		

I need to practise ...

NUMBER PATTERNS

Name:

Assessment Criteria: Recognise and describe number patterns

1. Look at the 1 to 100 grid here. A pattern of numbers has been shown by shading some numbers in yellow.

Describe how you would find the next number in the pattern if the grid were extended for two more rows.

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

- 2. Show me an example of a number greater than 300 that is
 - (i) divisible by 3
 - (ii) divisible by 4
 - (iii) divisible by 6
 - (iv) divisible by 9

3. Is the following statement always true, sometimes true, or never true? Explain your answer.

'A number that is divisible by 4 is also divisible by 8'

L4NNS1 © Glosmaths 2009

	4. Write down the first 5 numbers in the 2 times table, and the first 5 numbers in the 0.2 times table. What is the same and what is different about the two sequences?		
0.44	Low High		
Ove	erall, I think my success level is:		
Q	NUMBER PATTERNS	©	8
_	I can recognise number patterns		
	I can describe number patterns		

	I can recognise number patterns	.	
	I can describe number patterns		
	I know simple tests for divisibility		
	I can use my own strategies within mathematics		
	I can search for a solution by trying out ideas of my own		
I ne	eed to practise		

Section D

Jade was given a set of cards with numbers on them as follows:

6 9 3 0

- 1) What is the smallest number that can be made using each card once?
- 2) What is the largest number that can be made using each card once?
- 3) What is the largest even number that can be made?

PLACE VALUE

Name:

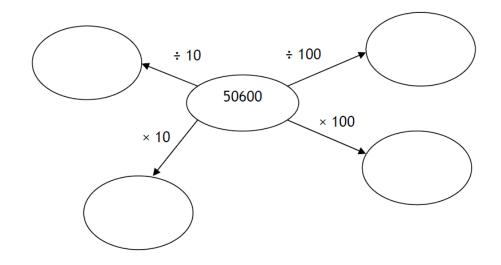
<u>Assessment Criteria:</u> Use place value to multiply and divide whole numbers by 10 or 100 No calculators allowed!

1. $37 \times 10 = 370$. What is 37×100 ?

2. Calculate the following:

3. Fill in the missing numbers in these calculations:

4. Complete the spider diagram here



Overall, I think my success level is:

0 0 0 0

High

Low

Q	PLACE VALUE	©	\otimes
	I can multiply whole numbers by 10		
	I can multiply whole numbers by 100		
	I can divide whole numbers by 10		
	I can divide whole numbers by 100		
l ne	eed to practise		
	•		

Section A			Level 4
1) Work out			
e) 39 x 1000 i) 21 x 10 m) 9 x 100	f) 67 ÷ 100 j) 814 ÷ 10 n) 7 ÷ 10	c) $163 \div 100$ d) 253×1000 g) $392 \div 100$ h) 67×10000 k) $163 \div 10000$ l) 253×100 . o) $16 \div 100$ p) 4×10000 tions. Fill in the missing digits.	
a) x 10 = 6 b) 890 _ ÷ 10 = c) 45 _ 0 ÷ 10 =	_ 90		
6 4: 5			Lavel 5
Section B			Level 5
Section B 1) Work out			Level 5
1) Work out a) 7.2 x 1000	-	-	Level 5
1) Work out	-	-	Level 5
1) Work out a) 7.2 x 1000	e) 15.1 ÷ 100	f) 8.7 ÷ 10	Level 5

SHAPE,

ORDERING DECIMALS

Name:

Assessment Criteria: Order decimals to three decimals places

1. Place these numbers in order of size, starting with the greatest:

0.305, 0.035, 0.503, 0.53, 0.053

- 2. Put these quantities into order, from smallest to largest:
 - a) 60 cm, 0.6 cm, 66 cm, 0.666 cm
 - b) 0.600 kg, 0.606 kg, 0.66 kg, 0.066 kg
 - c) 70p, £0.07, £7, £0.77
- 3. Find numbers that can be placed between: 0.55 and 0.6
 - 5.55 and 5.6
 - 0.55 and 0.56
 - 0.055 and 0.666
- 4. Circle the largest number in each of these sets.

5. These are the results of the men's 100 metres sprint in the 2004 Olympic Final. Place the men in the order they finished.

Kim Collins
Shawn Crawford
Justin Gatlin
Obadele Thompson
Asafa Powell
Maurice Greene
Aziz Zakari
Francis Obikwelu
9.89 seconds
9.85 seconds
10.10 seconds
9.94 seconds
9.87 seconds
did not finish
9.86 seconds

Overall, I think my success level is:

Q	ORDERING DECIMALS	<u>©</u>	8
	I can order decimals with one decimal place		
	I can order decimals with up to two decimal places		
	I can order decimals with up to three decimal places		
	I can present information and results in a clear and organised way		

I need to practise ...

Section A - For each list of number write them in order from smallest to largest.

- 1) 1.1, 1.6, 1.3, 1.8, 1.0, 1.5, 1.2
- 2) 2.4, 3.2, 2.6, 3.1, 2.8, 3.0, 2.0
- 3) 3.08, 4.61, 5.32, 7.41, 3.91, 5.09, 6.19
- 4) 1.69, 1.56, 1.5, 1.21, 1.03, 1.47, 1.8, 1.67, 1.08
- 5) 2.23, 2.26, 2.29, 2.2, 2.32, 2.19, 2.3
- 6) 2.135, 3.621, 2.073, 5.204, 3.009, 4.601
- 7) 23.621, 25.782, 24.007, 24.962, 23.007, 23.604

Name:

DRAW COMMON 2-D SHAPES IN DIFFERENT DIRECTIONS

Assessment Criteria: Begin to use formulae expressed in words

1.	Look	at	these	two	sec	uences
----	------	----	-------	-----	-----	--------

- (i) 4, 7, 10, 13, ... (ii) 5, 8, 11, 14, ...
- a) What is the same about them?
- b) What is different about them?
- 2. Look again at the sequence 4, 7, 10, 13, ...

To find the number in position 'n', multiply 'n' by three, and then add one.

- a) What number would be in position 10?
- b) What number would be in position 100?

3. A necklace manufacturer uses white, grey and black beads in various designs. Each necklace uses 60 beads.

How many of each colour is needed for the necklaces which have repeating patterns of the following?

a)



White: ______

Grey: _____

Black: _____

White: ______

Grey: _____

Black: _____

4.	Here are two different ways you can change 4 into 9, using any	
	combinations of add, subtract, multiply and divide.	

$$4 \times 4 - 7 = 9$$
 $(4 + 14) \div 2 = 9$

Write another example of your own:

5. The same thing is happening to both the starting numbers, to get the finishing numbers. Write down in words what you have to do to the starting numbers to get the finishing numbers. (HINT: there are two steps)

$$2 \rightarrow 7$$

Overall I think my success level is:	Low	High
Overall, I think my success level is:	0 (0 0 0

Q	SEQUENCES	<u>©</u>	8
	I can use a worded formula to work out values		
	I can describe sequences of numbers		
	I can express simple functions in words		
	I can search for a solution by trying out ideas of my own		
	I can use my own strategies within mathematics and in applying mathematics to practical contexts		

I need to practise ...

L4ALG1 © B.P.Sharp 2006, 2009

Task 12

Complete this homework on the sheet. Show your working out

Write in figures the number one thousand and twenty.	
Divide ninety by three.	
Multiply seven by six.	
What is twenty out of forty	
How many grams are there in twelve kilograms?	
How much must I add to four pounds ninety to make six pounds?	
How many lines of symmetry does a rectangle have?	
What is three times three added to four times four?	
Subtract one point nine from two point seven.	
What is one-half added to three-quarters?	
Calculate the perimeter of a rectangle which is eleven metres long and four metres wide.	
How many forties are there in eight hundred?	
If C = 5h-2, calculate C when h = 12	
Which decimal is equal to one-fifth: 0.1, 0.2, 0.3, 0.4 or 0.5	
What is three-quarters of five hundred?	
What number is thirty-four more than fifty-eight?	
In a takeaway the prices of pizzas are: Small £6.50, Medium £7.50, Large £8.40. How much more does a large pizza cost than a small one?	
What is fifteen multiplied by eleven?	
A yogurt costs forty-five pence.	
How many yogurts can be bought for five pounds?	
What is the angle between the hands of a clock at four o'clock?	
	Divide ninety by three. Multiply seven by six. What is twenty out of forty How many grams are there in twelve kilograms? How much must I add to four pounds ninety to make six pounds? How many lines of symmetry does a rectangle have? What is three times three added to four times four? Subtract one point nine from two point seven. What is one-half added to three-quarters? Calculate the perimeter of a rectangle which is eleven metres long and four metres wide. How many forties are there in eight hundred? If C = 5h-2, calculate C when h = 12 Which decimal is equal to one-fifth: 0.1, 0.2, 0.3, 0.4 or 0.5 What is three-quarters of five hundred? What number is thirty-four more than fifty-eight? In a takeaway the prices of pizzas are: Small £6.50, Medium £7.50, Large £8.40. How much more does a large pizza cost than a small one? What is fifteen multiplied by eleven? A yogurt costs forty-five pence. How many yogurts can be bought for five pounds?

MyMaths: Here are the MyMaths tasks for level 4.

Your teacher will instruct which of these to do.

Alternatively can use MyMaths to help with topics you are unsure of and to revise topics.

BOOSTER PACKS

Topic	How to find: Go to Boosters then	% Scored	Self Assessment		ent
Whole Numbers	Four Boosters		0	(2)	8
Negative Numbers	Four Boosters		0	(2)	8
Mental Methods	Four Boosters		0	(2)	8
Decimals	Four Boosters		0	(2)	8
Rounding	Four Boosters		0	(2)	8
Number Patterns	Four Boosters		0	⊕	⊗
Formula Equations	Four Boosters		0	⊕	⊗

OTHER

Topic	How to find: Go to Library ther	% Scored	Assessm	ent	
Number Facts and Doubles 4	Number → Add subtract mental		©	⊕	8
Sums Using 10s, 100s and 1000s	Number → Add subtract mental		☺	⊜	⊗
Mixed Sums All Numbers	Number → Add subtract mental		0	(1)	⊗
Counting 4	Number → Counting and Place Value		0	(1)	⊗
Place Value Hundreds Thousands	Number → Counting and Place Value		©	⊜	⊗
Place Value Hundreds Thousands	Number → Multiples		©	(1)	8
Place Value Hundreds Thousands	Number → Factors and Primes		©	(1)	8
Number Lines	Number → Decimals		0	(1)	8
Decimal Place Value	Number → Decimals		©	(1)	8
Ordering Decimals	Number → Decimals		©	(a)	⊗
Complements	Number → Decimals		©	(a)	⊗
Adding Decimals Mental	Number → Decimals		©	(a)	8
Adding Decimals in Columns Intro	Number → Decimals		©	(a)	8
Starting to Multiply Decimals	Number → Decimals		©	(a)	8
Rounding to 10, 100	Number → Estimation and Accuracy		©	=	8
Estimates with Decimals	Number → Estimation and Accuracy		☺	(1)	8
Estimating Introduction	Number → Estimation and Accuracy		©	=	8
Money Calculations	Number → Money and Finance		©	(a)	8
Money Problems	Number → Money and Finance		©	(a)	8
7 Times Tables	Number → Multiply divide mental		©	(a)	⊗
8 Times Tables	Number → Multiply divide mental		©	(1)	⊗
9 Times Tables	Number → Multiply divide mental		©	(1)	8
Mixed Tables 7,8,9	Number → Multiply divide mental		0	(1)	8
11 Times Tables	Number → Multiply divide mental		©	(a)	⊗
12 Times Tables	Number → Multiply divide mental		©	(a)	⊗
Mixed Tables 2 to 12	Number → Multiply divide mental		©	(a)	⊗
Multiplying by 10 and 100	Number → Multiply divide mental		0	(2)	8
Dividing by 10 and 100	Number → Multiply divide mental		0	(1)	8
Doubling and Halving	Number → Multiply divide mental		0	(1)	8
Multiply Single Digit	Number → Multiply divide written		0	(1)	8
Multiply Double Digits	Number → Multiply divide written		©	(a)	8
Division Chunking	Number → Multiply divide written		©	(1)	8
Division Remainders	Number → Multiply divide written		©	(1)	8
Squares and Triangles	Number → Powers and roots		©	=	⊜
Squares and Cubes	Number → Powers and roots		©	=	⊜
Sequences	Algebra → Sequences		©	=	8
Function Machines	Algebra → Expressions and Formulae		©	⊕	⊗

Parent note about this booklet

This booklet contains several level tasks available for homework along with MyMaths tasks.

The teacher will instruct which level tasks students should complete each week.

Students can do extra MyMaths tasks not set by the teacher at any time It is not intended that the whole booklet should be completed as one homework.

The booklet must be kept safely and any lost booklets will require £1 for a new copy.