# Year 6 to 7 Maths Transition Pack





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### Message from the Head of Department

We are looking forward to meeting you in September but until then I have put together a pack of work together to help continue to develop your maths skills.

In this pack there are some activities that you will do during your time at The Prescot School along with cross numbers and puzzles to help with your numeracy and problem solving skills.

At The Prescot School we want you to enjoy your time in maths so that you can make the best possible progress you are capable of to help you succeed later in life. No matter the path you take in life; maths will play a vital part so let's work together to make sure you leave the Prescot School fully equipped with the mathematical skills you need to have the best options available to you.

Good luck and we will all see you in September

#### Tick or Trash

At the Prescot School we like to use something called "Tick or Trash"

These are worksheets that require you to decide who has the correct answer based on your mathematical understanding and skills developed in primary and in maths class at The Prescot School.

Sometimes one has got the right answer but every now and then bot could be correct or both wrong. These are designed to get you thinking about the questions and to help you understand that some questions have multiple answers (e.g. powers, units).

Task: Round each question to the given number of places. Find who has the correct answer (neither could have it or both could be right) and shade that box in. The one with the most correct answers at the end is the winner.

Have a go at the following activities on some important maths topics from both primary and secondary school. Working out is encouraged as in maths it's not just about getting the right answer, it's about your methods and effort.

Α	Rounding	F	Area
В	Time	G	Algebra basics
С	Negative numbers	Η	Fractions of an amount
D	<b>BIDMAS/BODMAS</b>		+ and – fractions
Ε	FDP	J	Calculating percentages

## (A) ROUNDING

1	200	248 to the nearest hundred.	300	
2	600	576 to the nearest 10.	580	
3	7	6501 to the nearest thousand.	6000	
4	10000	9951 to the nearest hundred.	9900	
5	4000	5320 to the nearest thousand.	5000	
6	8	8.43 to the nearest whole number.	8.00	
7	9	9.72 to the nearest whole number.	10	
8	1.2	1.2354 to 1 decimal place.	1.1	
9	6	1.583 to 2 decimal places.	1.6	
Maths Genius Question!				
A	A number is rounded to the nearest whole number.			
The answer is 24. Give 3 possible numbers that have				
	been rounded.			
	Maths Legend Question!			
	Use rounding to estimate: 17 x 2.5			

## (B) TIME

n			
า			
า			
า			
Maths Genius Question!			
Give a time (12 hours and 24 hour) where the following is likely to			
happen:			
a) DO HOMEWORK			
c) Wake up			

## (C) NEGATIVES

	Tick one answer and trash the other. <b>+ and –</b> NEGATIVES	Everton 1878 NISI 0PTININ
-3	-7 + 4	3
-20	-13 - 7	-6
8	6 2	4
6	8-2	10
5	5 - 10	-5
-7	-4 + -3	-1
5	15 - 10	-5
-13	-6 + -7	1
-13	5 + -8	-3
-5	-12 + 7	5
5	-15 ÷ 3	-5
6	-3  imes -2	-6
-5	$20 \div -4$	5
-45	5 × -9	45
12	$-6 \times 2$	-12
-30	-3  imes -10	30
20	-60 ÷ 3	-20
15	$-30 \div -2$	-15
-20	$40 \div -2$	20

## (D) BIDMAS/BODMAS/ORDER OF OPERATIONS

1	15	7 + 2 x 4	56	
2	-8	16 ÷ 1 – 3	13	
3	7	15÷(3+2)	3	
4	76	100 – 6 + 2 x 3	88	
5	8	2 x 5 − √4	6	
6	36	9÷3+15x2	33	
7	63	19 x 2 + 5²	513	
8	100	8 <sup>2</sup> + 2 x 3 <sup>2</sup>	82	
9	13	11 + 11 - 6 <sup>2</sup> ÷ 2	4	
	Matl	ns Genius Questi	on!	
Insert brackets into the following so that they are correct: (a) 10 x 2 + 6= 80				
	(b) $5 + 5 \div 5 = 2$			
	(c) 10 - 0 - 2 = 0 Maths Legend Question			
	a) Michaels says that $9 + 3 \times 2 = 15$ , is he right, justify your			
answer				
b	) Katie says that 6 + 4	x 9 = 90, is she ri	ght, justify your answer.	

## (E) FRACTIONS, DECIMALS, PERCENATGES

1	$\frac{37}{50}$	74%	0.74	
2	0.9	$\frac{9}{10}$	9%	
3	$\frac{45}{100}$	0.45	45%	
4	0.4	1 Quarter	$\frac{1}{4}$	
5	6.25	$\frac{5}{8}$	625%	
6	60%	0.06	6%	
7	$\frac{1}{50}$	2%	0.2	
8	845%	0.845	84.5%	
	Maths	Genius Ques	tion!	
	Find the decima	al and percentage e	quivalents to:	
	a) $\frac{7}{8}$			
	b) $\frac{4}{5}$			
C) $\frac{13}{25}$				
Maths Legend Question!				
Find	a set of percentage, fract	ion and decimal for	r a number of your choosing.	

## (F) AREA

	<b>Everton</b> 1878 1878			
1	20cm	Find the area of a rectangle with sides of length 4cm and 5cm.	20cm <sup>2</sup>	
2	24cm	Find the perimeter of a square with side length of 6cm.	36cm <sup>2</sup>	
3	1.2m <sup>2</sup>	Find the area of a rectangle with side lengths 60cm and 2m.	1200cm <sup>2</sup>	
4	84cm <sup>2</sup>	Find the area of a trapezium with parallel lines of length 5cm and 9cm with a height of 6cm	42cm <sup>2</sup>	
5	35cm <sup>2</sup>	Find the area of a triangle with a base of 5cm and a height of 7cm.	17.5cm	
6	4πcm <sup>2</sup>	Find the area of a circle with radius 2cm. (HINT: Use Area= $\pi r^2$	12.566cm <sup>2</sup>	
	Maths Genius Question!			
Find the area and perimeter of the shape below. 20  cm $20  cm$ $6  cm$ $20  cm$				
Maths Legend Question!				
1. Give an expression for the area and perimeter of the shape:				
y + 3				
У				
2. The area of a shape is $32 \text{ cm}^2$ – In your books draw two possible shapes that have				
this area.				

## (G) ALGEBRA – Simple equations

	COULTL NEVERWALK ALONE FOOTBALL CLUB FOOTBALL CLUB	Question	Everton 1878 1878 NISI OPTIMUT
1	x = 6	2x = 8	x = 4
2	x = 5	x + 7 = 12	x = 17
3	x = 19	3x = 21	x = 7
4	x = 17	x – 9 = 8	x = 1
5	y = 10	$\frac{y}{7} = 3$	y = 21
6	t = 9	$\frac{t}{5} = 45$	t = 225
7	x = 13	2x + 7 = 19	x = 6
8	x = 8	5x + 8 = -32	x = -8
9	x = 1.5	2y + 10 = 13	no answer
		Mathematical Understandin	g
10	A=1, B=2, C=3Z=26 because that's its position in the alphabet	Letters in maths. What do they actually mean?	Letters represent unknown numbers of any type. These can be decimals or integers
EXTENSION - USING AND APPLYING			
W pe	Write an expression for the perimeter of this rectangle		

### (H) FRACTIONS OF AN AMOUNT

	VOLTUL NEVERWALK ALONE FOOTBALL CLUB	Question	Everton 1878 1878 NIST OPTIMUT	
1	5	Find $\frac{2}{3}$ of 15	10	
2	24	Find $\frac{4}{5}$ of 30	25	
3	6	Find $\frac{2}{7}$ of 21	14	
4	8	Find $\frac{5}{6}$ of 48	40	
5	15	Find $\frac{2}{3}$ of 21	14	
6	9	Find $\frac{1}{3}$ of 27	3	
7	14	Find $\frac{3}{10}$ of 70	21	
8	8	Find $\frac{1}{9}$ of 72	9	
9	21	Find $\frac{3}{8}$ of 64	24	
	MATHS GENIUS QUESTION			
	Alex says that $\frac{2}{5}$ of 60 is 12 Is he right?			
	MATHS LEGEND QUESTION			
	Which is bigger $\frac{3}{7}$ of 28 or $\frac{4}{5}$ of 20			

### (I) ADDING & SUBTRACTING FRACTIONS

	Wolverine Minion	Question	Batman Minion
1	$\frac{3}{4}$	$\frac{2}{3} + \frac{1}{12}$	$\frac{9}{12}$
2	$\frac{70}{99}$	$\frac{3}{9} + \frac{3}{11}$	$\frac{71}{99}$
3	$\frac{22}{48}$	$\frac{1}{3} + \frac{1}{8}$	$\frac{11}{24}$
4	$\frac{19}{60}$	$\frac{2}{5} - \frac{1}{12}$	$\frac{1}{6}$
5	$\frac{18}{35}$	$\frac{2}{7} + \frac{1}{5}$	$\frac{17}{35}$
6	$\frac{4}{45}$	$\frac{7}{9} - \frac{3}{5}$	$\frac{8}{45}$
7	$\frac{3}{40}$	$\frac{3}{4} - \frac{7}{10}$	$\frac{1}{20}$
8	$\frac{29}{60}$	$\frac{9}{10} - \frac{5}{12}$	$\frac{27}{60}$
9	$\frac{17}{26}$	$\frac{2}{13} + \frac{1}{2}$	$\frac{7}{26}$
	CHALLENGE (	QUESTIONS – Mixed nu	mbers
10	$9\frac{11}{15}$	$7\frac{2}{5} + 2\frac{1}{3}$	$9\frac{13}{15}$
11	$3\frac{3}{56}$	$4\frac{2}{7}-1\frac{1}{8}$	$3\frac{9}{56}$
12	$18\frac{1}{4}$	$6\frac{1}{3} + 7\frac{3}{4} + 4\frac{1}{6}$	$18\frac{3}{4}$

## (J) PERCENTAGES OF AN AMOUNT

1	2	10% of 20	0.2		
2	20	40% of 800	320		
3	15	50% of 30	0.6		
4	21	75% of 84	63		
5	4.5	15% of 30	2		
6	60	100% of 30	30		
7	3	1% of 300	30		
	CHAL	LENGE QUESTI	ONS		
8	7.2	60% of a number is 12. What is the original number?	20		
9	Find 25% and add on 10%	How do you find 35% of a number?	Find 10%, half it to find 5% and then add 3 10%'s and a 5% together.		
	Maths Genius Question!				
Order the following from smallest to largest. (Calculator allowed) a) 150% of 60 b) 40% of 200 c) 60% of 100 d)99% of 80					

### Mystery 1 (use your mathematical understanding and skills to solve the mystery)

#### Who

One of the 4 characters below has murdered Mrs X. Analyse the number problems to discover the murderer.

Each one has said which of the numerical statements they believe are true or false. The innocent people have only made 1 or 2 errors. The guilty person has made 3 errors.

<ul> <li>A) 40% of 500 is 200</li> <li>B) Half of 390 is 180</li> <li>C) 0.6 is the same as 6%</li> <li>D) 0.25 is the same as 2.5</li> </ul>	E) 0.6 x 300 = 50 F) $\frac{3}{4}$ x 90 = 60 G) Half of $\frac{8}{10}$ is $\frac{4}{5}$ H) 0.085 is the same as $\frac{81}{2}$ %						
The mad scientist said A is true C is true D is false H is true	The silly boy said E is true G is false B is false D is false						
The chef said G is false C is true D is true F is true	The artist said D is true C is false E is true B is false						
Where The murder took place where these are in ascending order $0.109, \frac{1}{10}, 11\%, \frac{90}{1000}, 0.099$							
Nottingham if this order is correct	$\frac{90}{1000}$ , 0.099, $\frac{1}{10}$ , 0.109, 11%						
Derby if this order is correct	$0.109, 0.099, \frac{1}{10}, \frac{90}{1000}, 11\%$						
Sheffield if this order is correct	11%, 0.109, $\frac{1}{10}$ , 0.099, $\frac{90}{1000}$						
Leicester if this order is correct	$\frac{1}{10}$ , $\frac{90}{1000}$ , 11%, 0.099, 0.109						

When Calculate each answer to find the time and date										
Add the	se fractio	ons toget	her	A) $2\frac{6}{14}$			B) $2\frac{19}{24}$	B) 2 <sup>19</sup> / <sub>24</sub>		
5 1				The time	e was 6:14	4 pm	The time was 19:24			
	$\frac{3}{8}$ +	$2\frac{1}{6} =$		C) $2\frac{6}{1}$			D) $\frac{18}{11}$			
				<sup>7</sup> 24 The time	- was 6:24	4 pm	' 14 The time	e was 8:1	4 pm	
Subtract	t thoso fr	actions						0 1100 012		
Subtrac	t these h	actions		A) $1\frac{1}{10}$			B) $1\frac{10}{10}$			
	$2^2$	7_		The date	e was 1/1	/10	The date	e was 1/3	3/10	
	2	10		C) $1\frac{7}{1}$			D) 3 <del>7</del>			
				The date	- was 1/7	/10	The date	e was 3/7	7/10	
-		_		The date		, 10	The date		/10	
Why.	Decode	the mess	age to fin	d out why	Mrs X wa	as killed	-			
20.5	a 0 -	1.0	<b>b</b>			20	d x 3/	2	e	
20÷	- 0.5 ¢	1.8	X 1/2	4.5 +	- 6.5	36	X %	3.	- 1⁄4	
2	15	3	<b>5</b>	37% +	- 1½	0.95	5 x 2	Half	<b>J</b> of 66	
5 *	15	10	x 5			0.00 x 2				
7	<b>۲</b>	C	I . 1	n 1/4 x 2	n ) y 2	n 07×07		<u>О</u> 5% х Д		
12	6	6	÷ <u>-</u> 5	/4 X Z X Z		0.7 × 0.7				
E9/ 6	<b>)</b>	26% 26%	<b>q</b>	r 15% of 50		<b>S</b>		t 10% of 36		
5/00	JI 40	20/0 85 0	auecimai	15% 01 50		¼ X <del>_</del> 5		10/0 01 50		
(	J	4.5	V	W		<b>X</b>		<b>y or z</b>		
3 -	- 74	1.5	÷2	4 - 3¾				172 X O		
	_		_	-	-					
$\frac{1}{\overline{r}}$	5	12	27	1.9	27	0.49	3.6	30	1.9	
5										
5	12	6	7.5	40	11	3.6	1.9	2.5	0.49	
12										
1	10	0.40	07	1.0	20	25	0.75	42		
1 <u></u>	40	0.49	27	1.9	30	2.5	0.75	12	3.6	
5	12	1								
			1	Final Accusation						
Who	L					-				
Where										
When										
Why										

#### Mystery 2 (use your mathematical understanding and skills to solve the mystery)

#### Who

One of the four characters below has committed a murder. Analyse the statements from each suspect. The 3 innocent characters make at least 2 truthful statements. The guilty person makes 3 errors.



#### Where

The murder was committed within this grid. Following the clues below, you have to mark "x" at the right spot.



- The x and y coordinates add up to an even number
- The x coordinate is more than the y coordinate
- Both of the coordinates are odd numbers
- The difference between the x and y coordinate is a square number



### Mystery 3 (use your mathematical understanding and skills to solve the mystery)

One of these 6 people has murdered one of the others. Each has made 4 statements about the following list of numbers.

The murderer has made 3 errors. The victim has made 0 errors. The other suspects have made 1 or 2 errors.

## 5, 8, 13, 16, 21, 38, 49, 52, 61, 64, 72

<ul> <li>Chloe says</li> <li>There are 5 odd numbers</li> <li>There are 2 square numbers</li> <li>There are 2 multiples of 7</li> <li>The lowest prime number in the list is 13</li> </ul>	<ul> <li>Phil said</li> <li>There are 3 primes</li> <li>The difference between the 1<sup>st</sup> 2 odd numbers in the list is 8</li> <li>There are 6 even numbers</li> <li>There are 3 factors of 64 in the list</li> </ul>
<ul> <li>Pauline says</li> <li>There are 2 cubes in the list</li> <li>There are 2 multiples of 9 in the list</li> <li>The largest gap between numbers is 9.</li> <li>The answer to 2<sup>5</sup> is in the list</li> </ul>	<ul> <li>Carl says</li> <li>The answer to v121 is in the list</li> <li>There are 2 multiples of 13 in the list</li> <li>There are 4 square numbers</li> <li>There are 4 multiples of 8</li> </ul>
<ul> <li>Miss Lune says</li> <li>2<sup>4</sup> is in the list</li> <li>v169 is in the list</li> <li>There are no factors of 18 in the list</li> <li>The product of the 2 lowest odd numbers is 63</li> </ul>	<ul> <li>Geoff says</li> <li>There are 2 cubes in the list</li> <li>2<sup>6</sup> is in the list</li> <li>V81 is in the list</li> <li>There are no multiples of 12</li> </ul>
Where The murder was committed in a Midlands town near to Birmingham.	woiverhampton gnorth Dudley, Walsall Hin minster war wells Bror same Coventry
It was Wolverhampton if there are 3 prime numbers in the	he 20's
It was Kidderminster if there are 4 multiples of 30 betwee	en 100 and 200
It was Nuneaton if there are 9 factors of 36	
It was Walsall if there are 5 perfect square numbers betw	veen 50 and 150

When.					
Calculate the time and date from these					
(eg hours answer =17 minutes part =28 gives a time of 17:28					
The hour part of the time is the answer to	√16 x ( 4 <sup>2</sup> - √121)				
The minute part of the time is the answer to	3 <sup>3</sup>				
The day part of the date is	The factors of 8 added together				
The month part of the date is	The 3 <sup>rd</sup> multiple of 4				
The year part of the date is	(10 <sup>3</sup> x √4) + √100				

Why									
a	2	k	)	12	<b>C</b>		d 2 · 1	22	e
f Next prim	f e after 13	<b>g</b> 1 <sup>st</sup> prime no in the 20's		<b>h</b> 3 + 3 <sup>2</sup>		i 5 <sup>th</sup> prime number		j 2 <sup>nd</sup> prime x 4 <sup>th</sup> prim	
k LCM of	ر f 2 & 7	I 2 <sup>2</sup>		<b>m</b> √169		<b>n</b> 1 <sup>10</sup>		<b>o</b> 2 <sup>3</sup>	
P HCF of 3	<b>)</b> 30 & 45	<b>c</b> 5 <sup>2</sup> -	- 1 <sup>2</sup>	r Cube root of 125		s √400		t √9	
u √36		<b>v</b> √81		<b>w</b> 4 <sup>2</sup> +1 <sup>2</sup> +1 <sup>2</sup> +1 <sup>2</sup>		9 <sup>th</sup> mult	<b>x</b> tiple of 2	<b>y or z</b> 5 <sup>2</sup> - √9	
12	7	25	8	7	20	1	3	14	1

	,		0	,	20	-	0		-
8	19	12	8	19	3	8	20	24	6
16	5	7	16	1	6	13	10	7	5

	THE FINAL ACCUSATION
Who	
Where	
When	
Why	

1		2		3			4
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

	Clues Across		Clues Down
1:	191 x 2	1:	20% of 1770
3:	1327 + 2404	2:	Square root of 484
5:	50% of 480	3:	Three-quarters of 40
7:	6 x 7	4:	4722 - 2856
9:	424 divided by 4	<b>6</b> :	1872 + 2879
10:	1986 + 2971	8:	264 divided by 11
13:	A quarter of 5056	11:	4035 + 3245
15:	41 x 5	12:	One third of 3699
16:	75% of 76	14:	75% of 60
18:	953 - 547	17:	1453 - 741
20:	1273 + 2358	18:	First prime number after 40
21:	1856 divided by 8	19:	Half of 124

1		2		3			4
		r	<u> </u>				
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

	Clues Across		Clues Down
1:	983 - 509	1:	1342 - 896
3:	1134 + 1209	2:	344 divided by 8
5:	1428 divided by 4	3:	Three-quarters of 36
7:	20% of 335	4:	1765 + 1532
9:	53 x 3	6:	1847 x 3
10:	1721 x 2	8:	2nd prime number after 70
13:	4935 - 3112	11:	5678 divided by 2
15:	One third of 759	12:	Seven-eighths of 2552
16:	522 divided by 9	14:	7 x 5
18:	25% of 1180	17:	80% of 1040
20:	1133 + 2542	18:	5 squared
21:	66 x 12	19:	Half of 114

1		2		3			4
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

Clues Across			Clues Down
1:	50% of 982	1:	Half of 878
3:	2518 + 2135	<b>2</b> :	Square root of 144
5:	79 x 3	3:	376 divided by 8
7:	Three-quarters of 128	4:	7543 - 3915
9:	513 + 429	<b>6</b> :	737 x 5
10:	153 x 11	8:	First prime number after 60
13:	2668 + 3174	11:	7677 - 3789
15:	2022 divided by 3	12:	7346 divided by 2
16:	179 - 114	14:	156 divided by 6
18:	75% of 912	17:	Four-fifths of 730
20:	1739 + 2245	18:	8 squared
21:	Two-thirds of 846	19:	90% of 50

1		2		3			4
		5	6				
		2	0				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

Clues Across			Clues Down
1:	114 x 4	1:	25% of 1836
3:	5936 - 3163	<b>2</b> :	715 divided by 11
5:	One third of 1695	3:	Five-sixths of 30
7:	75% of 132	4:	8134 - 4535
9:	1298 divided by 2	<b>6</b> :	3942 + 2944
10:	5795 - 3214	8:	736 divided by 8
13:	3815 + 2736	11:	4216 - 2631
15:	97 x 7	12:	2396 + 2288
16:	Three-quarters of 104	14:	Square root of 289
18:	50% of 1310	17:	3576 divided by 4
20:	2681 + 1953	18:	Half of 128
21:	82 x 7	19:	11 x 5

1		2		3			4
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

	Clues Across		Clues Down
1:	2868 divided by 4	1:	1943 - 1164
3:	3357 + 2319	2:	684 divided by 9
5:	227 x 3	3:	75% of 68
7:	Last prime number before 100	4:	4237 + 2294
9:	3381 divided by 7	6:	802 x 11
10:	5439 - 3714	8:	426 divided by 6
13:	564 x 4	11:	3471 + 1792
15:	One third of 1758	12:	2656 + 2911
16:	10% of 820	14:	25% of 272
18:	Half of 1076	17:	53 x 5
20:	5395 + 2523	18:	<b>1</b> 91 - <b>1</b> 33
21:	20% of 625	19:	9 squared

1		2		3			4
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

	Clues Across		Clues Down
1:	93 x 9	1:	1934 - 1115
3:	1492 + 894	2:	11 x 7
5:	3975 divided by 5	3:	20% of 125
7:	776 divided by 8	4:	3243 + 3179
9:	1254 - 602	6:	1863 x 5
10:	4291 + 5222	8:	Last prime number before 80
13:	3562 + 2167	11:	Seven-eighths of 4280
15:	5117 divided by 7	12:	3394 x 2
16:	Three-quarters of 24	14:	546 divided by 6
18:	50% of 1904	17:	75% of 1156
20:	1036 x 8	18:	184 - 86
21:	2361 divided by 3	19:	One third of 81

1		2		3			4
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

	Clues Across		Clues Down
1:	8451 divided by 9	1:	124 x 8
3:	4371 + 3527	2:	1078 divided by 11
<b>5</b> :	Three-quarters of 1084	3:	Half of 146
7:	First prime number after 20	4:	4786 + 3967
9:	123 x 5	<b>6</b> :	75% of 1524
10:	5426 + 3521	8:	19 x 2
13:	7399 - 3921	11:	1497 x 5
15:	5026 divided by 7	12:	Eight-ninths of 8757
16:	408 divided by 12	14:	176 - 93
18:	50% of 1502	17:	80% of 610
<b>20</b> :	2613 + 1619	18:	9 x 8
21:	934 - 586	19:	Square root of 169

1		2		3			4
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

Clues Across			Clues Down
1:	Four-fifths of 1195	1:	183 x 5
3:	3275 + 2943	<b>2</b> :	Last prime number before 70
<b>5</b> :	261 x 3	3:	One third of 189
7:	50% of 104	4:	5139 + 3135
<b>9</b> :	Three-quarters of 796	<b>6</b> :	2747 x 3
10:	2882 + 5366	8:	25% of 112
13:	3543 - 2046	11:	2231 + 6213
15:	1673 divided by 7	12:	4912 - 2680
16:	168 divided by 8	14:	80% of 90
18:	20% of 1235	17:	Half of 298
20:	4213 - 1667	18:	234 divided by 9
21:	1548 divided by 12	19:	206 - 135

1		2		3			4
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

	Clues Across		Clues Down
1:	50% of 1828	1:	131 x 7
3:	334 x 7	2:	328 divided by 8
5:	Three-quarters of 160	3:	Square root of 400
7:	375 divided by 5	4:	3966 + 4189
9:	20% of 1475	<b>6</b> :	4921 - 2479
10:	3755 + 5391	8:	Last prime number before 60
13:	6324 - 4208	11:	2676 + 3465
15:	1410 divided by 6	12:	2833 - 1584
16:	179 - 85	14:	One third of 207
18:	25% of 844	17:	51 x 9
20:	4793 + 4496	<b>18</b> :	5% of 580
21:	1251 divided by 9	19:	Square root of 121

1		2		3			4
		-					
		5	6				
7	8				9		
	10			11			
12			13			14	
15						16	17
			18		19		
20					21		

	Clues Across		Clues Down
1:	1566 divided by 6	1:	75% of 324
3:	2415 + 3214	2:	Square root of 225
5:	50% of 1066	3:	636 divided by 12
7:	First prime number after 30	4:	4549 + 5216
9:	2133 - 1147	<b>6</b> :	7214 - 3566
10:	641 x 6	8:	5% of 260
13:	3810 + 4343	11:	3462 + 2716
15:	25% of 736	12:	4391 - 3229
16:	Two-fifths of 115	14:	272 divided by 8
18:	3465 divided by 9	17:	1434 - 743
20:	One third of 7566	18:	8 x 4
21:	11 squared	19:	Three-quarters of 68

### Cross Number ANSWERS

		F	PUZZ	ZLE	1		
1		2		3			4
3	8	2		3	7	3	1
		5	6				
5		2	4	0			8
7	8				9		
4	2		7		1	0	6
	10			11			
	4	9	5	7			6
12			13			14	
1			1	2	6	4	
15						16	17
2	0	5		8		5	7
			18		19		
3			4	0	6		1
20					21		
3	6	3	1		2	3	2

PU	771	F	2

1		2		3			4
4	7	4		2	3	4	3
		5	6				
4		3	5	7			2
7	8				9		
6	7		5		1	5	9
	10			11			
	3	4	4	2			7
12			13			14	
2			1	8	2	3	
15						16	17
2	5	3		3		5	8
			18		19		
3			2	9	5		3
20					21		
3	6	7	5		7	9	2

			PUZZ		3		
1		2		3			4
4	9	1		4	6	5	3
		5	6				
3		2	3	7			6
7	8				9		
9	6		6		9	4	2
	10			11			
	1	6	8	3			8
12			13			14	
3			5	8	4	2	
15						16	17
6	7	4		8		6	5
			18		19		
7			6	8	4		8
20					21		
3	9	8	4		5	6	4

			PUZZ		4		
1		2		3			4
4	5	6		2	7	7	3
		5	6				
5		5	6	5			5
7	8				9		
9	9		8		6	4	9
	10			11			
	2	5	8	1			9
12			13			14	
4			6	5	5	1	
15						16	17
6	7	9		8		7	8
			18		19		
8			6	5	5		9
20					21		
4	6	3	4		5	7	4

		I	PUZZ	ZLE	5		
1 7	1	2 7		3 5	6	7	4 6
7	-	5	6 8	1		-	5
7 9	8 7	0	8	1	9 4	8	3
	10 1	7	2	11 5			1
12 5			13 2	2	5	14 6	
15 5	8	6		6		16 8	17 2
6			18 5	3	19 8		6
20 7	9	1	8		21 1	2	5

			PUZZ		7		
1 9	3	2 9		3 7	8	9	4 8
9		5 8	6 1	3			7
7 2	8 3		1		9 6	1	5
	10 8	9	4	11 7			3
12 7			13 3	4	7	14 8	
15 7	1	8		8		16 3	17 4
8			18 7	5	19 1		8
20 4	2	3	2		21 3	4	8

DII	771	F	8
			•

1 9	5	2 6		3 6	2	1	4 8
1		5 7	6 8	3			2
7 5	8 2		2		9 5	9	7
	10 8	2	4	11 8			4
10			12			4.4	
2			1	4	9	7	
12 15 2	3	9	1	4	9	14 7 16 2	17 1
12 15 2 3	3	9	13 1 18 2	4 4	9 19 7	14 7 16 2	17 1 4

PUZZLE 9												
1 9	1	2 4		3 2	3	3	4 8					
1		5 1	6 2	0			1					
7 7	8 5		4		9 2	9	5					
	10 9	1	4	11 6			5					
12 1			13 2	1	1	14 6						
15 2	3	5		4		16 9	17 4					
4			18 2	1	19 1		5					
20 9	2	8	9		21 1	3	9					

PUZZLE 10													
1 2	6	2 1		3 5	6	2	4 9						
4		5 5	6 3	3			7						
7 3	8 1		6		9 9	8	6						
	10 3	8	4	11 6			5						
12 1			13 8	1	5	14 3							
15 1	8	4		7		16 4	17 6						
6			18 3	8	19 5		9						
20 2	5	2	2		21 1	2	1						

#### Puzzles

Use your previous maths skills to help solve the following problems



Solve mathematical problems or puzzles. Visualise 2-D shapes.

# Joins

Join any four numbers. Find their total.

Joins can go up, down or sideways, but not diagonally. The score shown is 8 + 15 + 6 + 18 = 47.



Find the highest possible score. Find the lowest possible score.

Try joining five numbers. Now try joining five numbers using only diagonal joins.

**Teaching objectives** 

Solve mathematical problems or puzzles. Add and subtract two-digit numbers mentally.



Solve mathematical problems or puzzles. Explain methods and reasoning.



Solve a given problem by organising information. Explain methods and reasoning.



Solve mathematical problems or puzzles. Visualise 2-D shapes. Explain methods and reasoning.



Solve mathematical problems or puzzles. Know 3 and 7 times tables. Recognise prime numbers.



Start with zero.

Find a route from 'Start' to 'End' that totals 100 exactly.



Which route has the highest total? Which has the lowest total?

Now try some different starting numbers.

#### **Teaching objectives**

Solve mathematical problems or puzzles. Add and subtract two-digit numbers mentally. Multiply and divide by single-digit numbers.



Solve mathematical problems or puzzles. Use negative numbers.



Solve mathematical problems or puzzles. Know multiplication facts to  $10 \times 10$ . Recognise square and cube numbers.



Solve mathematical problems or puzzles. Explain methods and reasoning.

## Albert Square



36 people live in the eight houses in Albert Square. Each house has a different number of people living in it. Each line of three houses has 15 people living in it. How many people live in each house?

#### **Teaching objectives**

Solve mathematical problems or puzzles. Add several small numbers mentally. Explain methods and reasoning.



Solve problems involving ratio and proportion. Choose and use efficient calculation strategies to solve a problem. Explain methods and reasoning.



Solve mathematical problems or puzzles. Find simple percentages.



Solve mathematical problems or puzzles. Use a symbol to stand for an unknown number. Explain methods and reasoning.



Solve a problem by extracting and interpreting data. Add several numbers mentally.



**Teaching objectives** Solve a problem by organising information. Find fractions of quantities. Understand the relationship between multiplication and division.

## Cola in the bath

A can of cola holds 33 centilitres.



If you had a bath in cola - don't try it! approximately how many cans of cola would you need? Hint: 1 cubic centimetre is the same as 1 millilitre.



#### Teaching objectives

Solve mathematical problems or puzzles. Estimate lengths and convert units of capacity. Develop calculator skills and use a calculator effectively.



How many different ways of making 200 can you find?

#### **Teaching objectives**

Solve mathematical problems or puzzles. Know what each digit represents. Add several two-digit numbers.