



ANSWER SHEET



Monday -

Mild

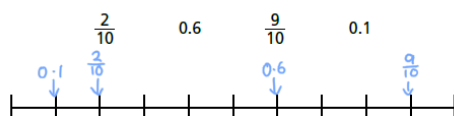
1) Shade the bar models to represent the amounts.

- a) 7 tenths
- b) $\frac{4}{10}$
- c) 0.3

2) Complete the table to show the fractions and decimals the bar models represent.

Bar model	Fraction	Decimal
	$\frac{1}{10}$	0.1
	$\frac{5}{10}$	0.5
	$\frac{6}{10}$	0.6
	$\frac{3}{10}$	0.3

3) Write each fraction and decimal in the correct place on the number line.



1)

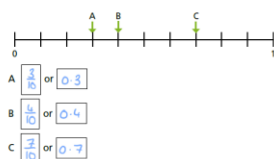
a)	e) five-tenths
b) 0.5	f)
c)	g) 0.9
d) $\frac{4}{10}$	h) $\frac{2}{10}$

2)

Representation	Decimal	Fraction
	0.4	$\frac{4}{10}$
	0.8	$\frac{8}{10}$
	0.7	$\frac{7}{10}$
	0.5	$\frac{5}{10}$
0.1 shown on any of the above representations.	0.1	$\frac{1}{10}$
$\frac{2}{10}$ shown on any of the above representations.	0.2	$\frac{2}{10}$

Medium

4) Work out the values of A, B and C.
Give your answers as fractions and decimals.



5) Match the equivalent fractions, decimals and words.

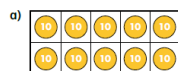
$\frac{3}{10}$	0.7	four tenths
$\frac{9}{10}$	0.3	one tenth
$\frac{7}{10}$	0.4	three tenths
$\frac{4}{10}$	0.1	nine tenths
$\frac{1}{10}$	0.9	seven tenths

Representation	Decimal	Fraction
	1.3	$\frac{13}{10}$
	1.9	$\frac{19}{10}$
	1.6	$\frac{16}{10}$

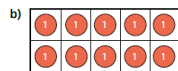
Jas is correct as the representation shows one whole and four-tenths. Lin is incorrect. Lin has counted the whole shape as one-tenth, not ten-tenths. She should have written 1.4 or fourteen-tenths.

Spicy:

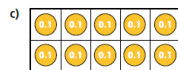
6 What is the total value represented by each ten frame?



100



10



1

7



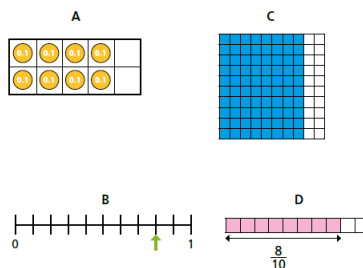
Nine tenths can be written 0.9, so ten tenths must be 0.10

Do you agree with Ron? No

Explain your answer.

Ten tenths is one whole.

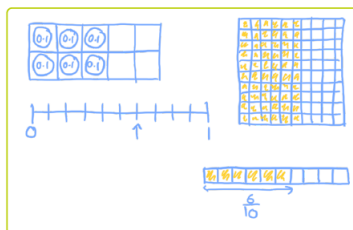
8 Eight tenths can be represented in all of the ways shown.



Which do you think is the best representation? _____

Discuss your answer with a partner.

Represent six tenths in each different way.



a) The whole 1 should be written before the decimal point and the 8 tenths after the decimal point to show 1.8 as the answer.

b) A model drawn which helps to show how to convert fractions to decimals with accompanying notes. For example:



← This is one whole, there are $\frac{10}{10}$ in one whole.

← In this bar, 8 out of the 10 parts have been shaded. This is $\frac{8}{10}$

$\frac{10}{10} = 1.0$ - whole numbers are written before the decimal point.

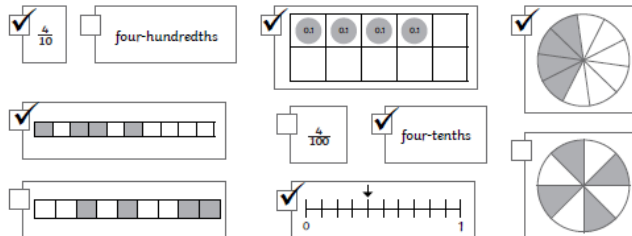
$\frac{8}{10} = 0.8$

$1\frac{8}{10}$ is written as 1.8 in decimals.

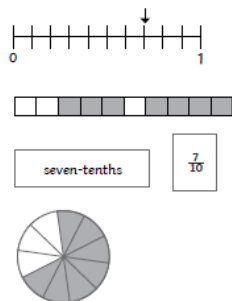
Centimetres and Millimetres	Millimetres	Fraction	Decimal
1cm 2mm	12mm	$1\frac{2}{10}$ cm ($\frac{12}{10}$)	1.2cm
1cm 5mm	15mm	$1\frac{5}{10}$ cm ($\frac{15}{10}$)	1.5cm
0cm 5mm	5mm	$\frac{5}{10}$ cm	0.5cm
1cm 7mm	17mm	$1\frac{7}{10}$ cm ($\frac{17}{10}$)	1.7cm



a)



b) Children represent $\frac{7}{10}$ in a variety of ways including similar models and representations shown above.
For example:



Tuesday - Dividing by 10

Starter:

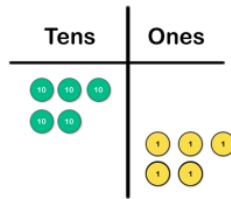
There are several possible answers. Here is one that relates to multiplication facts.

Each of the second numbers in each pair shows the number of tens in the first number, apart from $10 \rightarrow 5$. For example, there are 5 tens in 50, 8 tens in 80 and so on. The pair $10 \rightarrow 5$ should actually read $10 \rightarrow 1$.

Mild:

There are 6 tens in 60.
 $60 \div 10 = 6$

There are 9 tens in 90.
 $90 \div 10 = 9$



There are 5 tens in 50.

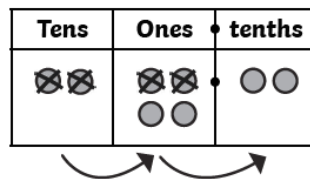
$$50 \div 10 = 5$$

There will be 5 groups.

1) a) $14 \div 10 = 1.4$

When dividing by 10, we move the counters or digits one place to the *right*.

b) $22 \div 10 = 2.2$



2) $29 \div 10 = 2.9$

3) a) $48 \div 10 = 4.8$

d) $79 \div 10 = 7.9$

b) $55 \div 10 = 5.5$

e) $30 \div 10 = 3$

c) $61 \div 10 = 6.1$

f) $82 \div 10 = 8.2$

Medium:

$$820 \div 10 = 82$$

$$630 \div 10 = 63$$

$$170 \div 10 = 17$$

$$950 \div 10 = 95$$

$$210 \div 10 = 21$$

$$930 \div 10 = 93$$

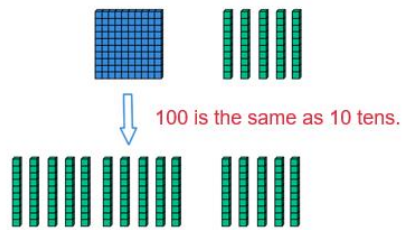
$$560 \div 10 = 56$$

$$530 \div 10 = 53$$

$$440 \div 10 = 44$$

$$180 \div 10 = 18$$

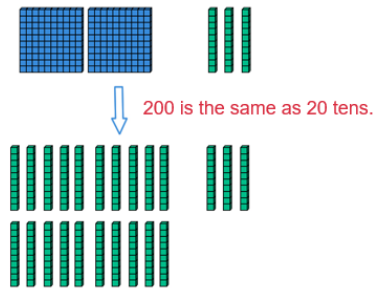
How would you use Base 10 blocks to divide 150 by 10?



There are 15 tens altogether.

$$150 \div 10 = 15$$

How would you use Base 10 blocks to divide 230 by 10?



There are 23 tens altogether.

$$230 \div 10 = 23$$

4) a) $19 \div 10 = 1.9$

b) $8.7 = 87 \div 10$

- 1) This calculation is correct because the digits would both move one place to the right on the place value grid. 40 would become 4 and 2 would become 0.2. This would make 4.2 overall.

1)

Snake	Length
anaconda	12m
python	6m
rat snake	1.2m
corn snake	0.6m



- 2) The mystery number is 2.4.

Clue A and Clue D are extra clues.

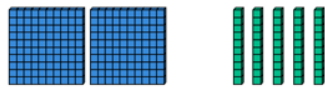
Clue A is not needed because we know from Clue B that, when you multiply the mystery number, the answer is smaller than 30. This means we know that the mystery number can't have any hundreds.

Clue D is not needed. From Clue B, we know that the mystery number multiplies by 10 to make 21, 22, 23, 24 or 25. This means that the mystery number must be 2.1, 2.2, 2.3, 2.4 or 2.5. All of these numbers only have ones and tenths, so we do not need Clue D.

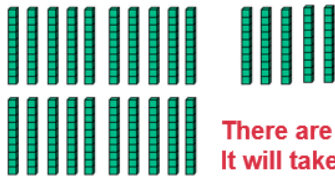
Spicy:

If Kurt saves £10 a month, how months will it take him to save £250?

Use Base 10 blocks to model the problem.



200 is the same as 20 tens.



There are 25 tens altogether. $250 \div 10 = 25$
It will take Kurt 25 weeks to save £250.

Mastery:

I can divide numbers b
and understand how di
behave when this
happens.

Greater Depth:

I can apply my knowle
of dividing by 10 to sol
open-ended problems.

Height of a door

Incorrect – Alice
has multiplied by
10.

Her height

Correct

Length of a book

Incorrect – Alice
has swapped the
order of the digits.
When dividing by
10 the order of the
digits never
changes.

Height of a mug

22 mm.

Alex – 53

Jack – 350

Dora – 35

Mo – 3,500

1)

Snake	Length
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python	6m
rat snake	1.2m
corn snake	0.6m



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Clue A is not needed because we know from Clue B that, when you multiply the mystery number, the answer is smaller than 30. This means we know that the mystery number can't have any hundreds.

Clue D is not needed. From Clue B, we know that the mystery number multiplies by 10 to make 21, 22, 23, 24 or 25. This means that the mystery number must be 2.1, 2.2, 2.3, 2.4 or 2.5. All of these numbers only have ones and tenths, so we do not need Clue D.

Wednesday:

Mild:

- 1 Complete the table.

Hundred square	Words	Fraction	Decimal
	thirty-six hundredths	$\frac{36}{100}$	0.36
	eighty-two hundredths	$\frac{82}{100}$	0.82
	twenty-seven hundredths	$\frac{27}{100}$	0.27
	twelve hundredths	$\frac{12}{100}$	0.12
	seven tenths	$\frac{7}{10}$	0.7
	three tenths	$\frac{3}{10}$	0.3

- 2 Draw decimal place value counters to represent the numbers.

a) 0.03



c) 0.63



b) 0.6



d) 0.36



- 3 The counters represent tenths and hundredths.

a) Match the decimals to the groups of counters.



b) Write each decimal as a fraction.

0.04 = $\frac{4}{100}$ 0.4 = $\frac{4}{10}$ 0.14 = $\frac{14}{100}$ 0.41 = $\frac{41}{100}$

a) There are **10** squares shaded out of **100**.

There is **1** row shaded out of **10**.

The shaded area represents $\frac{10}{100}$ or $\frac{1}{10}$.

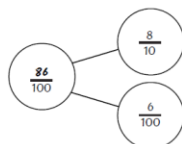
b) There are **35** squares shaded out of **100**.

The shaded area represents $\frac{35}{100}$.

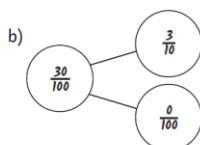
The number square should have any 70 squares shaded. The circled fractions should be $\frac{70}{100}$ and $\frac{7}{10}$.

Medium:

3)



4)



4

3 hundreds is
the same as $\frac{3}{100}$



Is Rosie correct? No

Explain your answer.

3 hundreds = 300 3 hundredths = $\frac{3}{100}$

5

Match the decimals to the descriptions.

Some of the numbers can be described in two ways.

1.3	one tenth and three hundredths
0.03	thirty hundredths
0.3	one and three tenths
0.13	thirteen tenths
	thirteen hundredths
	three tenths
	three hundredths

1) a) Place Value Grid

Ones	tenths	hundredths	Decimal
	•	••••	0.53

There are 0 ones.

There are 5 tenths.

There are 3 hundredths.

0.53 is the decimal shown.

b) Place Value Grid

Ones	tenths	hundredths	Decimal
••	•	•	2.01

There are 2 ones.

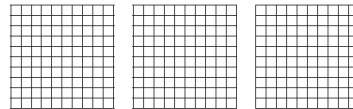
There are 0 tenths.

There are 1 hundredths.

2.01 is the decimal shown.

Spicy:

6 Shade the hundred squares to represent 12 hundredths in three different ways. Various answers



Compare answers with a partner.

What is the same? What is different?

7

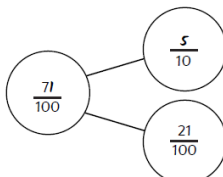
0.6 of the hundred square is shaded. Dora	6 tenths of the hundred square is shaded. Ron
0.60 of the hundred square is shaded. Whitney	60 hundredths of the hundred square is shaded. Jack

Who do you agree with? All

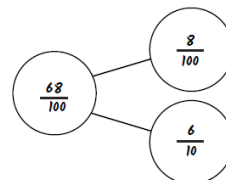
Explain why.

- 1) Greg is incorrect as even though it looks like two columns of 10 and one row of 10 are shaded, which makes a total of 30, some of the individual squares appear in both the row and the columns so have been counted twice. If you count the squares individually, there is actually only 28 shaded so this image represents $\frac{28}{100}$ not $\frac{30}{100}$.

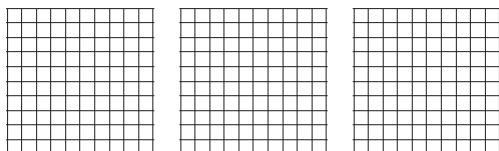


- 2)  The whole part has $\frac{7}{10}$ ($\frac{70}{100}$). If you subtract the $\frac{2}{10}$ ($\frac{20}{100}$) from the $\frac{7}{10}$, you're left with $\frac{5}{10}$. Therefore, 5 is missing digit in the $\frac{71}{100}$ fraction. To calculate the missing digit from $\frac{71}{100}$, I can see that there are $\frac{21}{100}$, which means the missing digit must be 1.

- 3) Neither has more as they both have the same. Sixty eight hundredths written as a fraction is $\frac{68}{100}$. Eight hundredths as a fraction is written as $\frac{8}{100}$ and six tenths written as a fraction is $\frac{6}{10}$, which is the same as $\frac{60}{100}$. If you recombine, then $\frac{60}{100} + \frac{8}{100} = \frac{68}{100}$.



- 6 Shade the hundred squares to represent 12 hundredths in three different ways. Various answers



Compare answers with a partner.

What is the same? What is different?

7

0.6 of the hundred square is shaded.

6 tenths of the hundred square is shaded.

0.60 of the hundred square is shaded.

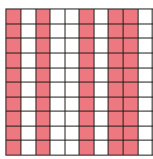
60 hundredths of the hundred square is shaded.

Dora

Ron

Whitney

Jack



Who do you agree with? All

Explain why.

- 1) Here are 10 possible answers:

$\frac{2}{10}$ and $\frac{3}{100}$, $\frac{1}{10}$ and $\frac{13}{100}$, $\frac{22}{100}$ and $\frac{1}{100}$, $\frac{21}{100}$ and $\frac{2}{100}$, $\frac{19}{100}$ and $\frac{4}{100}$, $\frac{18}{100}$ and $\frac{5}{100}$, $\frac{17}{100}$ and $\frac{6}{100}$, $\frac{16}{100}$ and $\frac{7}{100}$, $\frac{15}{100}$ and $\frac{8}{100}$, $\frac{14}{100}$ and $\frac{9}{100}$

- 2)
- | | | |
|-------|---|------------------|
| Craig | My fraction has five tenths. | $\frac{57}{100}$ |
| Lois | My fraction is greater than $\frac{57}{100}$. | $\frac{59}{100}$ |
| Ted | My fraction has fifty four hundredths. | $\frac{54}{100}$ |
| Raj | My fraction can be partitioned into $\frac{5}{10}$ and $\frac{5}{100}$. | $\frac{55}{100}$ |
| Gina | My fraction can be partitioned into $\frac{26}{100}$ and $\frac{3}{10}$. | $\frac{56}{100}$ |

Thursday:

Mild

- 1 a) Draw counters to show 8 on the place value chart.

Ones	Tenths	Hundredths
○○○○○○○○		

- b) Complete the division.

$$8 \div 100 = 0.08$$

- c) Draw counters to show your answer on the place value chart.

Ones	Tenths	Hundredths
		○○○○○○○○

What do you notice?

- 2 a) Draw counters to show 80 on the place value chart.

Tens	Ones	Tenths	Hundredths
○○○○○○○			

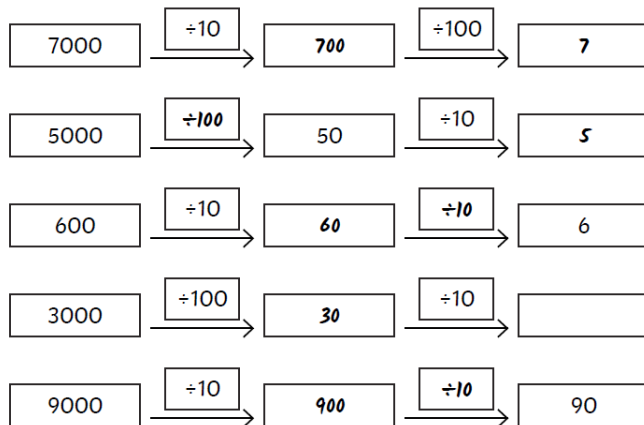
- b) Complete the division.

$$80 \div 100 = 0.8$$

- c) Draw counters to show your answer on the place value chart.

Tens	Ones	Tenths	Hundredths
		○○○○○○○	

What do you notice?



2)

$1700 \div 10$	$>$	$3400 \div 100$
$700 \div 100$	$<$	$7100 \div 100$
$90 \div 10$	$=$	$900 \div 100$

Medium

- 3 Complete the sentence.
To divide by 100 you move the counters 2 places to the right.

- 4 Complete the calculations.

a) $3 \div 100 =$ 0.03 d) $0.6 = 60 \div 100$
b) $90 \div 100 =$ 0.9 e) $50 \div 100 = 0.5$
c) $0.05 = 5 \div 100$ f) $0.02 =$ 2 $\div 100$

- 5 Dora is working out $48 \div 100$ using a place value chart.

Tens	Ones	Tenths	Hundredths
●●●●	●●●●●●		



To divide by 100 you move two places to the right, so $48 \div 100$ is 40.08

Tens	Ones	Tenths	Hundredths
●●●●			●●●●●●

- a) Explain the mistake that Dora has made.

She hasn't moved all of the counters

- b) Complete the division.

$48 \div 100 =$ 0.48

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- 6 This Gattegno chart shows the number 37

10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

- a) Explain how you would work out $37 \div 100$ using this chart.

Move the counters down 2

Compare answers with a partner.

- b) Use the Gattegno chart to complete the division.

$92 \div 100 =$ 0.92

- c) Use the Gattegno chart to complete the division.

$19 \div 100 =$ 0.19

- 7 Complete the calculations.

a) $31 \div 100 =$ 0.31 e) $0.29 = 29 \div 100$
b) $60 \div 100 =$ 0.6 f) $58 \div 100 = 0.58$
c) $0.85 = 85 \div 100$ g) $0.5 =$ 50 $\div 100$
d) $0.01 =$ 1 $\div 100$ h) $0.3 = 30 \div$ 100

a) $340 \div 10 = 34$ d) $2100 \div 100 = 21$
b) $220 \div 10 = 22$ e) $9900 \div 100 = 99$
c) $5400 \div 100 = 54$ f) $320 \div 10 = 32$

e	c	a	f	b	d
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greatest

smallest

Both children are correct. Dividing by 10 and dividing by 10 again is the same as dividing by 100. By moving each digit two places to the right, the number becomes 100 times smaller.

George has made some errors and not all his division statements are correct.

$1110 \div 10$ does not make 110. The tens should have been divided by ten to give a one.

$1100 \div 10 = 110$ is correct.

$10\ 100 \div 100$ does not make 110. The position of the digits has changed.

$11\ 100 \div 10 \div 10$ does not make 110. The position of the digits has changed.

Spicy

8 Complete the calculations.

a) $36 \div 10 = 3.6$

b) $91 \div 10 = 9.1$

$36 \div 100 = 0.36$

$91 \div 100 = 0.91$

$36 \div 10 \div 10 = 0.36$

$91 \div 10 \div 10 = 0.91$

What do you notice?

9

Dividing by 100 is always the same as dividing by 10 twice.



Do you agree with Amir? Yes

Explain your answer.

10

Roll two dice to make two 2-digit numbers.

Divide your numbers by 100. Record your answer. Roll again.

Here is an example.



$36 \div 100$ and $63 \div 100$

$\square \div 100 = \square$ and $\square \div 100 = \square$

$\square \div 100 = \square$ and $\square \div 100 = \square$

What is the greatest possible answer you can get?

0.66

What is the smallest possible answer?

0.11

Compare answers with a partner.

They started with 2,800

Whitney divided by 10 to get 280 and Eva divided by 100 to get 28

$170 \div 10 = 17$
 $320 \times 10 = 3,200$
 $1,860 \div 10 = 186$
 $59 \times 100 = 5,900$
 $64 = 6,400 \div 100$

Accept any correct combinations. For example,

	100	200	300	1500	2000
	1	2	3	15	20
	1000	2000	3000	15 000	20 000

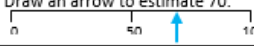
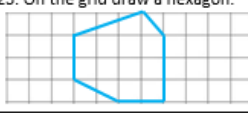
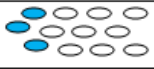
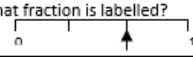
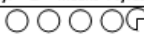
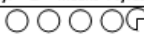
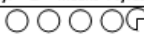
a) Accept any correct numbers. For example:

$2700 \div 10 = 270$ (7 tens)

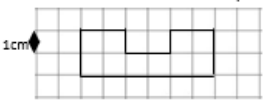
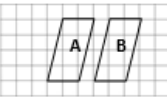
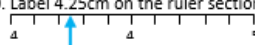
$2700 \div 100 = 27$ (2 tens)

Friday

Mild

A: Place Value, Add and Subtract		B: Multiply, Divide and Fractions		C: Measure, Geometry and Statistics							
1. What is the missing number? 0 100 200 300 400	3.1 500	11. $36 \div 4 =$	3.10 9	23. David says the time is "8 o'clock in the morning". Which of these means the same thing? a. 8 noon b. 8 am c. 8 pm	3.23 b						
2. What is the 8 worth in this number? 847	3.2 800 (hundreds)	12. $4 \times 3 =$	3.10 12								
3. Put these in order, largest first. 847 478 874 784	3.3 874, 847, 784, 478	13. Use $24 \div 8 = 3$ to solve: $240 \div 8 =$	3.11 30	22. How many days are in a year? a. 52 b. 365 c. 366	3.24 b						
4. Draw an arrow to estimate 70. 	3.4 Arrow	14. What is the missing number? $80 \div \square = 2 \times 4$	3.12 10								
5. Tom counts up in 100s starting from 300. What will his 4 th number be?	3.5 600	15. What is the missing fraction? $\frac{5}{1}, \frac{6}{1}, \frac{\square}{\square}$	3.13 $\frac{7}{10}$	23. On the grid draw a hexagon. 	3.25 Any 6 sided shape						
6. $714 - 100 =$	3.6 614	16. Shade $\frac{1}{4}$ of the counters. 	3.14 3								
7. $293 + 49 =$	3.7 342	17. What fraction is labelled? 	3.15 $\frac{2}{3}$	24. No. of tyres sold one weekend: <table data-bbox="995 669 1275 781"><tr><td colspan="2">Key:  means 4 tyres</td></tr><tr><td>Saturday</td><td></td></tr><tr><td>Sunday</td><td></td></tr></table>	Key:  means 4 tyres		Saturday		Sunday		3.29 12 and a quarter circles
Key:  means 4 tyres											
Saturday											
Sunday											
8. Write a sum to check $89 - 65 = 24$. Check: $24 \square 65 \square 89$	3.9 +, =	18. This shape is in sixths. Shade in $\frac{1}{3}$. 	3.16 2	13 tyres were sold on Sunday. Show this.							
9. After spending 56p, Sue still has 44p left. How much did she start with?	3.8 £1	19. Subtract the fractions. $\frac{4}{1} - \frac{2}{1}$	3.17 $\frac{2}{11}$	25. How many tyres were sold on Saturday?	3.30 19						
10. What is the missing number? + 412 = 724	3.9 312	20. Write the smallest fraction. $\frac{2}{8}, \frac{7}{8}, \frac{3}{8}, \frac{5}{8}$	3.18 $\frac{2}{8}$								
Total (A)		Total (B)		Total (C)							
Test Total (A+B+C)		R (0-9)	Y (10-19)	G (20-25)							

Medium and Spicy

A: Place Value, Add and Subtract		B: Multiply, Divide and Fractions		C: Measure, Geometry and Statistics	
1. What is the missing number? 18 24 30 42	4.1 36	11. $7 \times 11 =$	4.9 77	21. What is the area of this shape? 	4.20 10cm²
2. What is the missing number? 7,000 8,000 9,000	4.1 10,000	12. Circle the sum that is the same as 27×12 : $3 \times 4 \times 9$ <u>$3 \times 9 \times 12$</u>	4.10 $3 \times 9 \times 12$		
3. Round this number to the nearest 100: 5,731	4.2 5,700	13. $293 \times 7 =$	4.11 2,051	22. Circle the name that describes the smallest angle. Right angle Obtuse angle <u>Acute angle</u>	4.24 Acute angle
4. What is 1,000 less than 3,293?	4.2 2,293	14. To work out 53×8 you could do: $\square \times 8 + 3 \times \square$	4.12 50, 8		
5. What is 3 less than 1?	4.3 -2	15. Circle the equivalent fraction to $\frac{1}{7}$. $\frac{3}{2}$ $\frac{5}{3}$ <u>$\frac{7}{5}$</u>	4.13 $\frac{5}{35}$	23. To transform shape A onto B: Translate A  units to the .	4.27 3, right
6. What is the value of the 2 in this number? 3,296	4.4 200	16. Complete the sequence: $\frac{22}{10}, \frac{23}{10}, \frac{24}{10}, \frac{\square}{10}$	4.14 $\frac{25}{100}$		
7. Write the number 37 in Roman numerals.	4.5 XXXVII	17. $\frac{9}{5} + \frac{2}{5}$	4.15 $\frac{11}{5}$	24. Tom rode to his friend's house. 	4.29 15 mins
8. $1,235 + 824 =$	4.6 2,059	18. Write 0.5 as a fraction.	4.16 $\frac{1}{2}$		
9. Write the sum to check $1,930 + 383 = 2,313$: $2,313 \square 1,930 \square 383$	4.7 +, =	19. $8 \div 100 =$	4.17 0.08	Using the distance - time graph, how long did Tom rest for?	
10. There are 213 people on a train. 28 get on & 49 get off. How many now?	4.8 192	20. Label 4.25cm on the ruler section: 	4.18 Arrow	25. How much further was the 2nd part of Tom's journey than the first?	4.30 4km
Total (A)		Total (B)		Total (C)	

