Year 6 Maths Distance Teaching and Learning

Week beginning: Monday 18th May 2020

Lesson 1		
Learning Intention: WALT revise short multiplication.	Key Vocabulary: Multiplication Product Times Groups of Lots of Multiplier Multiplicand	What you will need: A computer, tablet or phone for the starter Maths book Pencil Video: Year 6 Maths – Week 5 - Lesson 1

Starter

Log on to Times Tables Rock Stars

Select Multi Player game – Rock Slam – Challenge your teacher!

Main Teaching

Watch the video Year 6 Maths – Week 5 - Lesson 1, which will guide you through the main input.

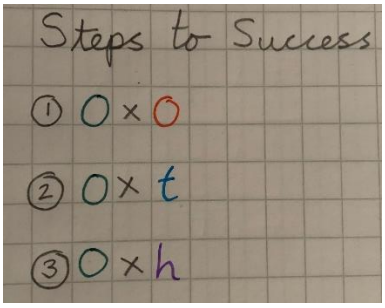
Today, we will be practising short multiplication. Some of the challenges will be word problems! Here are some synonyms for multiply:

product	times	groups of	lots of

In a multiplication calculation, each part of the equation has a name.

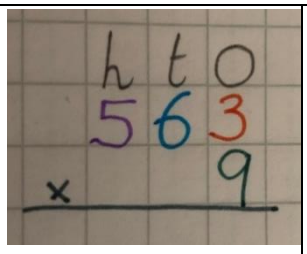
4	x	3	=	12
Multiplier		Multiplicand		Product
Amount of groups		Amount in each group		Whole amount
In a multiplication calculation the values that are the multiplier and multiplicand can be swapped and the calculation would still be correct. This is because multiplication is commutative!				

Now let's try some examples!

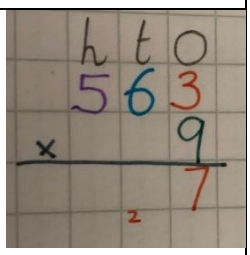


Example 1

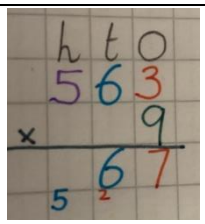
1) **Write out the question in the format.**
Make sure the place value columns line up.



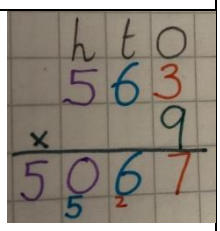
2) **Multiply the ones by the ones.**
9 x 3 = 27 (Place the 7 in the ones column and carry the 2 to the tens by placing it below.)



3) **Multiply the ones by the tens.**
9 x 6 = 54 (Add the 2 you carried before to make 56. Place the 6 in the tens column and carry the 5 underneath the hundreds column.)

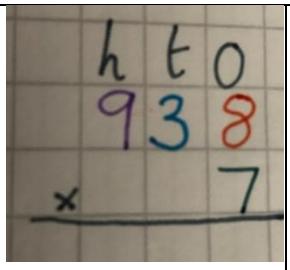


4) **Multiply the tens by the hundreds.**
9 x 5 = 45 (Add the 5 you carried to make 50, place the 0 in the hundreds column and the 5 in the thousands column.)

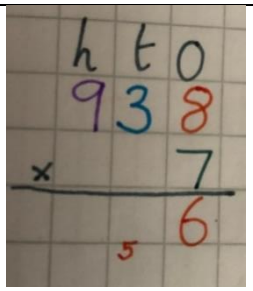


Example 2

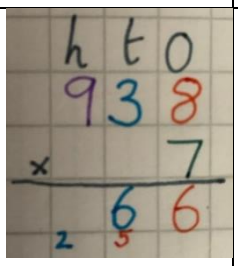
1) **Write out the question in the format.**
Make sure the place value columns line up.



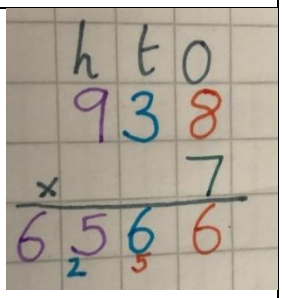
2) **Multiply the ones by the ones.**
7 x 8 = 56 (Place the 6 in the ones column and carry the 5 to the tens by placing it below.)



3) **Multiply the ones by the tens.**
7 x 3 = 21 (Add the 5 you carried before to make 26. Place the 6 in the tens column and carry the 2 underneath the hundreds column.)

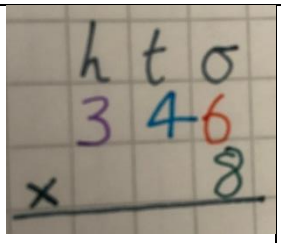


4) **Multiply the tens by the hundreds.**
7 x 9 = 63 (Add the 2 you carried to make 65, place the 5 in the hundreds column and the 6 in the thousands column.)

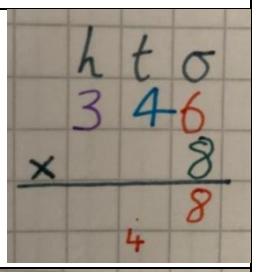


Example 3

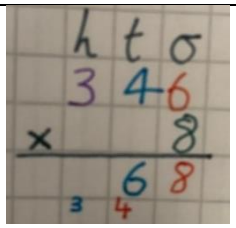
1) **Write out the question in the format.**
Make sure the place value columns line up.



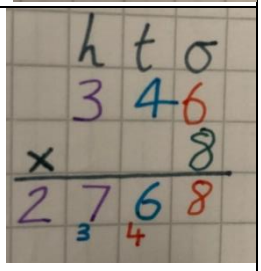
2) **Multiply the ones by the ones.**
8 x 6 = 48 (Place the 8 in the ones column and carry the 4 to the tens by placing it below.)



3) **Multiply the ones by the tens.**
8 x 4 = 32 (Add the 4 you carried before to make 36. Place the 6 in the tens column and carry the 3 underneath the hundreds column.)



4) **Multiply the tens by the hundreds.**
8 x 3 = 24 (Add the 3 you carried to make 27, place the 7 in the hundreds column and the 2 in the thousands column.)



Independent Tasks
Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

1	702 x 8	4	2332 x 3
2	1201 x 9	5	304 x 5
3	5739 x 5	6	3242 x 3

Challenge 2

1	878 x 7	4	4329 x 0
2	8780 x 9	5	6759 x 7
3	4301 x 6	6	32331 x 3

Challenge 3

1

Here are three incorrect multiplications.

	T	O
	6	1
×		5
	3	5

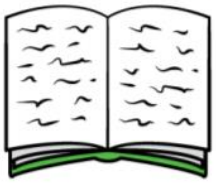
	T	O
	7	4
×		7
4	9	8

	T	O
	2	6
×		4
8	2	4

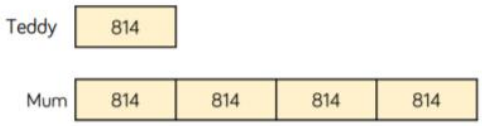
Correct the multiplications.

2

Teddy and his mum were having a reading competition.
In one month, Teddy read 814 pages.



His mum read 4 times as many pages as Teddy.
How many pages did they read altogether?
How many fewer pages did Teddy read?
Use the bar model to help.



3

Annie earns £1,325 per week.
How much would he earn in 4 weeks?

4

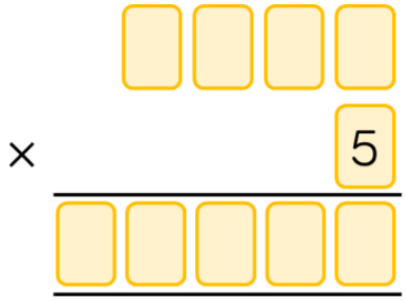
A machine pours 250 millilitres of juice every 4 seconds.

How many **litres** of juice does the machine pour every **minute**?

Challenge X

1

Can you work out the missing numbers using the clues?



- The 4 digits being multiplied by 5 are consecutive numbers.
- The first 2 digits of the product are the same.
- The fourth and fifth digits of the answer add to make the third.

2

Chen uses these digit cards.

She makes a 2-digit number and a 1-digit number.

She multiplies them together.

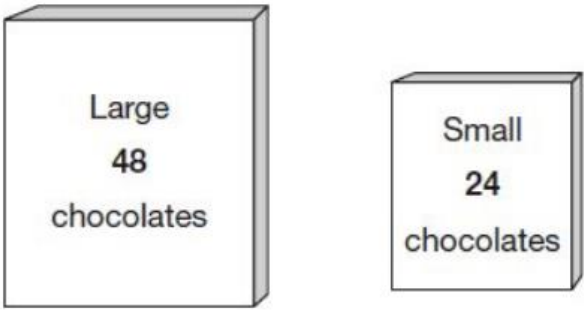
Her answer is a **multiple of 10**

What could Chen's multiplication be?

3

Ken buys 3 large boxes and 2 small boxes of chocolates.

Each large box has 48 chocolates. Each small box has 24 chocolates.



How many **chocolates** did Ken buy altogether?

4

A shop sells candles.

Sapna buys **4** star candles and **2** stripe candles.

How much does she pay **altogether**?

Review

Two students solved the question 603 x 4 using the short written method for multiplication. But they have different answers.

Who do you think is correct and why?

Stacey

		1	
	6	0	3
x			4
2	4	5	2

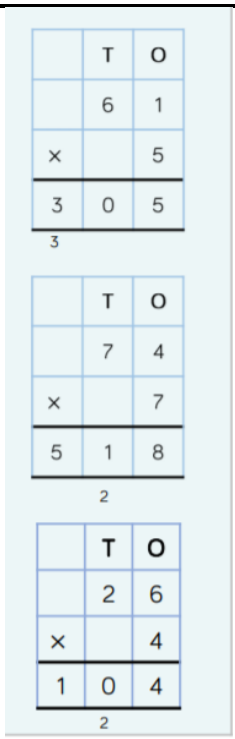
		1	
	6	0	3
x			4
2	4	1	2

Finley

Mark Scheme - Lesson 1

Independent Tasks	
Challenge 1	Challenge 2
702 x 8 = 5,616 1,201 x 9 = 10,809 5,739 x 5 = 28,695 2,332 x 3 = 6,996 304 x 5 = 1,520 3,242 x 3 = 9,726	878 x 7 = 6,146 8,780 x 9 = 79,020 4,301 x 6 = 25, 806 4,329 x 0 = 0 6,759 x 7 = 47,313 32,331 x 3 = 96,993

Challenge 3

1		2	814 × 5 = 4,070 They read 4,070 pages altogether. 814 × 3 = 2,442 Teddy read 2,442 fewer pages than his mum.
3	5300	4	3.75l or 3750ml

Challenge X

1	2,345 × 5 = 11,725	2	95 × 6 **OR** 96 × 5
3	192	4	£4.10 or 410p

Review
Finley is correct! Stacey is incorrect. She made a mistake when multiplying 4 x 0. She thought the answer was 4 but it is 0!

Lesson 2		
Learning Intention: WALT use the formal long multiplication method to solve problems.	Key Vocabulary: Multiplication Product Times Groups of Lots of	What you will need: A computer, tablet or phone for the starter Maths book Pencil Video: Year 6 Maths – Week 5 - Lesson 2

Starter

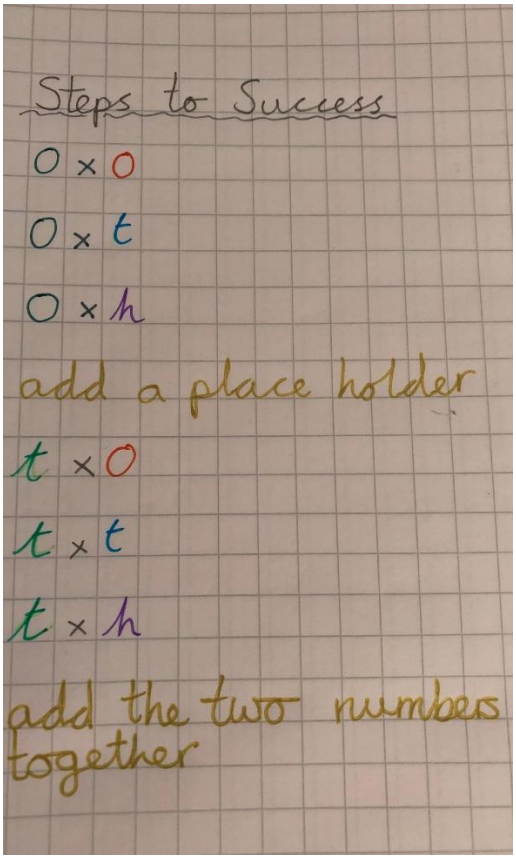
Log in to Times Tables Rock Stars

Play a ‘Garage’ game

Main Teaching

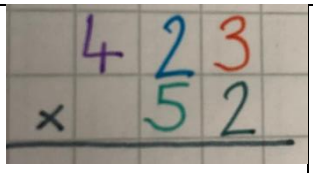
Watch the video Year 6 Maths – Week 5 - Lesson 2, which will guide you through the main input.

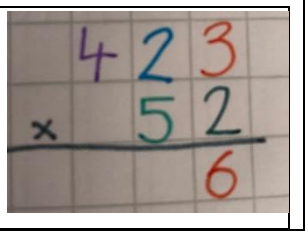
Today, we will be revising long multiplication!



<u>Example 1</u>

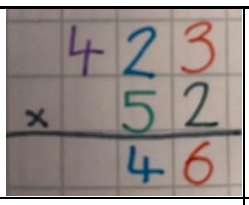
1) Write out the question in the format. Make sure the place value columns line up.	**2) Multiply the ones by the ones.** 2 x 3 = 6 (Place the 6 in the ones column.)





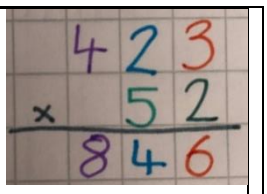
3) Multiply the ones by the tens.

2 x 2 = 4 (Place the 4 in the tens column.)



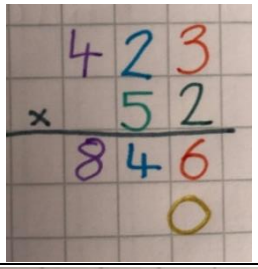
4) Multiply the ones by the hundreds.

2 x 4 = 8 (Place the 8 in the hundreds column.)



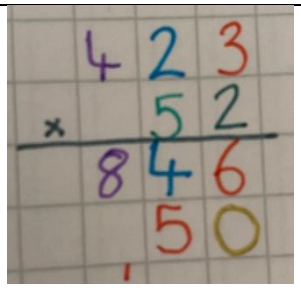
5) PLACEHOLDER

On a new line, place a 0 in the ones column as a placeholder.



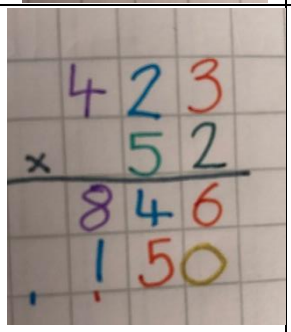
6) Multiply the tens by the ones

5 x 3 = 15 (Place the 5 in the tens column and carry the one under the hundreds column.)



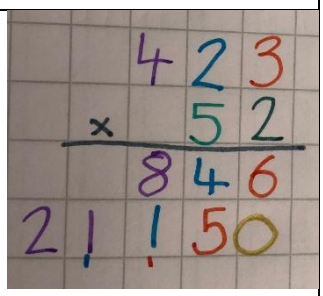
7) Multiply the tens by the tens

5 x 2 = 10 (Add the 1 you carried to the 10 to make 11, place the 1 in the hundreds column and carry the 1.)

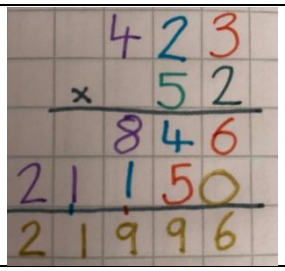


8) Multiply the tens by the hundreds

5 x 4 = 20 (Add the 1 you carried to the 20 to make 21, place the 1 in the thousands column and the 2 in the ten thousands column.)



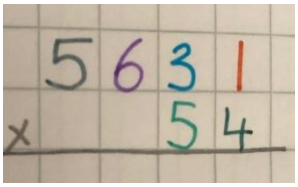
9) Add the two numbers together



Example 2

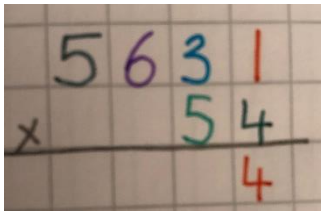
1) Write out the question in the format.

Make sure the place value columns line up.



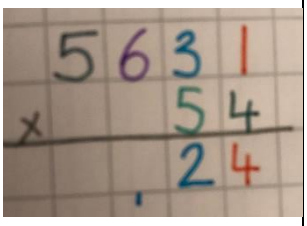
2) Multiply the ones by the ones.

4 x 1 = 4 (Place the 4 in the ones column.)



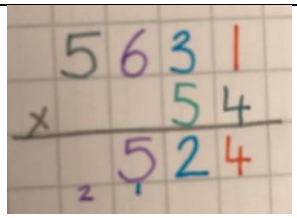
3) Multiply the ones by the tens.

4 x 3 = 12 (Place the 2 in the tens column and carry the one under the hundreds column.)

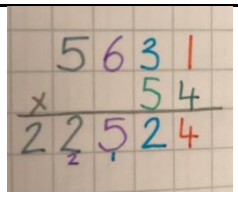


4) Multiply the ones by the hundreds.

4 x 6 = 24 (Add the 1 you carried to 24 to make 25. Place the 5 in the hundreds column and carry the 2.)



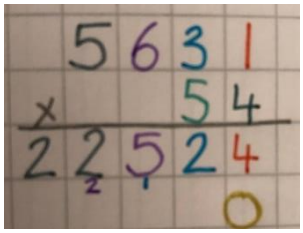
5) Multiply the ones by the thousands.



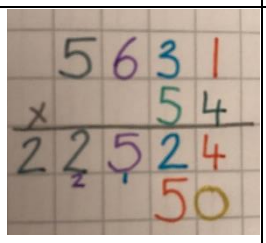
4 x 5 = 20 (add 20 to the 2 you carried. Place the 2 in the thousands column and the other 2 in the tens thousands column.)

6) PLACEHOLDER

On a new line place a 0 in the ones column as a placeholder.

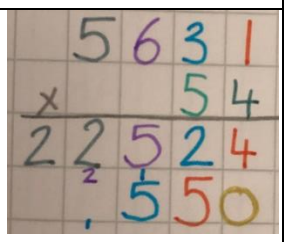


7) Multiply the tens by the ones



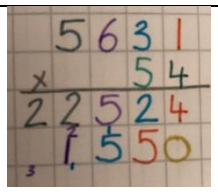
5 x 1 = 5 (Place the 5 in the tens column.)

8) Multiply the tens by the tens



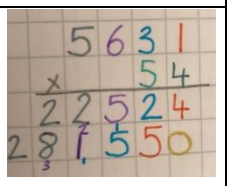
5 x 3 = 15 (Place the 1 in the hundreds column and carry the 5.)

9) Multiply the tens by the hundreds



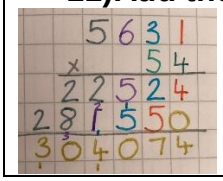
5 x 6 = 30 (Add the 1 you carried to the 30 to make 31, place the 1 in the thousands column and carry the 3.)

10) Multiply the tens by the thousands



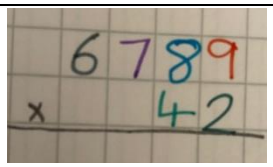
5 x 5 = 25 (Add the 3 you carried to 25 to make 28. Place the 8 in the ten thousands column and the 2 in the hundred thousands column.)

11) Add the two numbers together



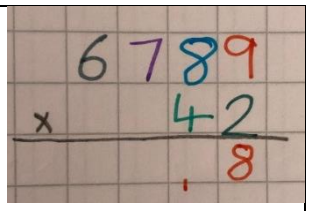
Example 3

1) Write out the question in the format.



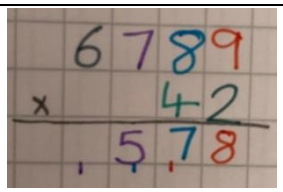
Make sure the place value columns line up.

2) Multiply the ones by the ones.



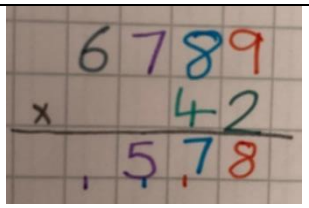
2 x 9 = 18 (Place the 8 in the ones column and carry the 1.)

3) Multiply the ones by the tens.



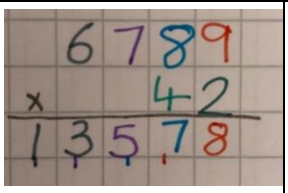
2 x 8 = 16 (Add the carried 1 to make 17. Place the 7 in the tens column and carry the 1 under the hundreds column.)

4) Multiply the ones by the hundreds.



2 x 7 = 14 (Add the 1 you carried to 14 to make 15. Place the 5 in the hundreds column and carry the 1.)

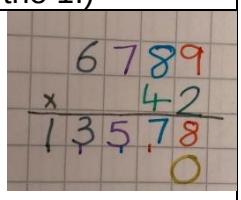
5) Multiply the ones by the thousands.



2 x 6 = 12 (add 12 to the 1 you carried to make 13. Place the 3 in the thousands column and the other 1 in the tens thousands column.)

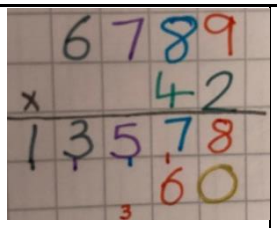
6) PLACEHOLDER

On a new line place a 0 in the ones column as a placeholder.



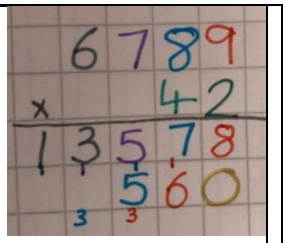
7) Multiply the tens by the ones

4 x 9 = 36 (Place the 6 in the tens column and carry the 3.)



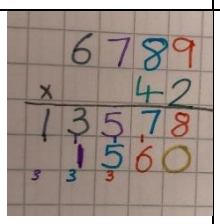
8) Multiply the tens by the tens

4 x 8 = 32 (Add the 3 you carried to the 32 to make 35. Place the 5 in the hundreds column and carry the 3.)



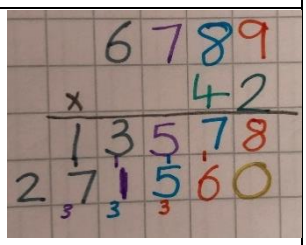
9) Multiply the tens by the hundreds

4 x 7 = 28 (Add the 3 you carried to the 28 to make 31, place the 1 in the thousands column and carry the 3.)

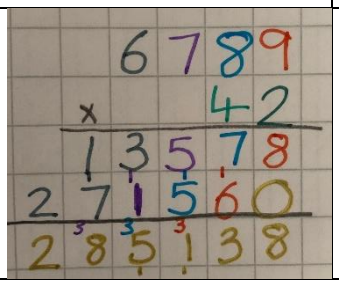


10) Multiply the tens by the thousands

4 x 6 = 24 (Add the 3 you carried to 24 to make 27. Place the 7 in the ten thousands column and the 2 in the hundred thousands column.)



11) Add the two numbers together



Independent Tasks

Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. If you are finding a challenge too tricky or too easy after 3 questions, you should switch challenges.

After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

1	71 × 46	2	418 × 46
3	622 × 54	4	836 × 27
5	529 × 54	6	785 × 23

Challenge 2

1	3468 × 62	2	2376 × 15

3	$\begin{array}{r} 6574 \\ \times \quad 31 \\ \hline \end{array}$	4	$\begin{array}{r} 5413 \\ \times \quad 86 \\ \hline \end{array}$
5	$\begin{array}{r} 4781 \\ \times \quad 23 \\ \hline \end{array}$	6	$\begin{array}{r} 8679 \\ \times \quad 87 \\ \hline \end{array}$

Challenge 3

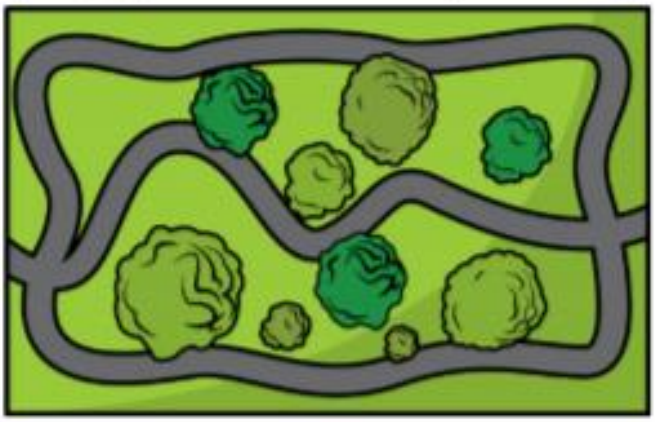
1

Jack made cookies for a bake sale.
He made 345 cookies.
The recipe says that he should have 17 raisins in each cookie.

How many raisins did he use altogether?

2

A playground is 128 yards by 73 yards.



Calculate the area of the playground.

3

Use <, > or = to make the statements correct.

4,458 × 56 ◯ 4,523 × 54

4,458 × 55 ◯ 4,523 × 54

4,458 × 55 ◯ 4,522 × 54

Challenge X

1

2 3 4 5 7 8

Place the digits in the boxes to make the largest product.

	□	□	□	□
×			□	□

2

True or False?

- 5,463 × 18 = 18 × 5,463
- I can find the answer to 1,100 × 28 by calculating 1,100 × 30 and subtracting 2 lots of 1,100
- 702 × 9 = 701 × 10

3

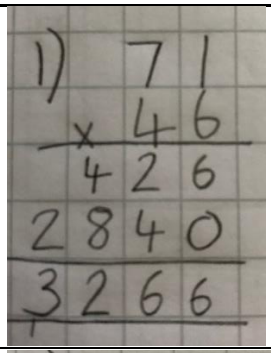
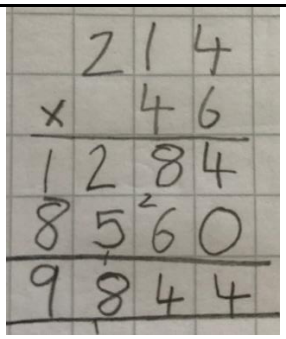
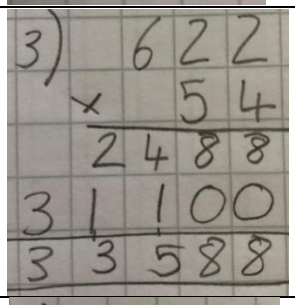
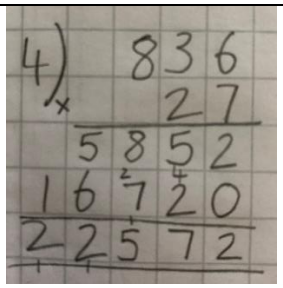
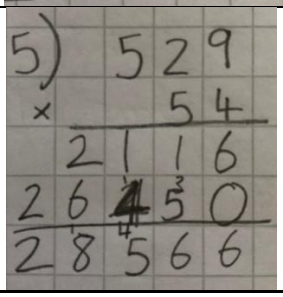
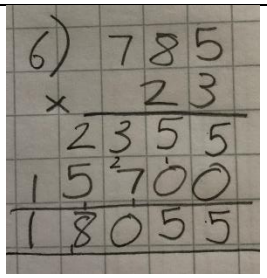
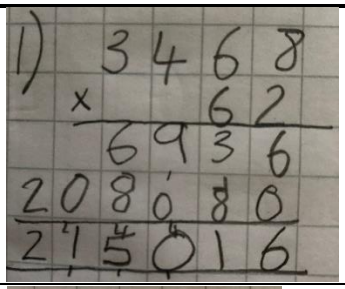
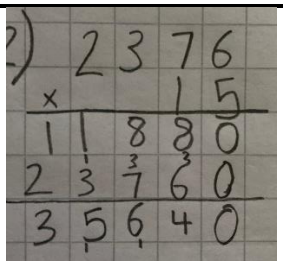
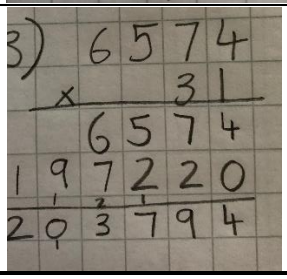
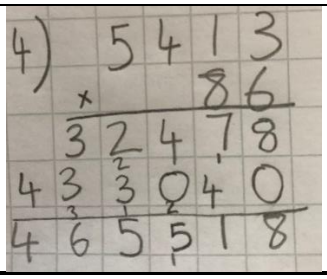
Pencils come in boxes of 64
A school bought 270 boxes.
Rulers come in packs of 46
A school bought 720 packs.
How many more rulers were ordered than pencils?

Review

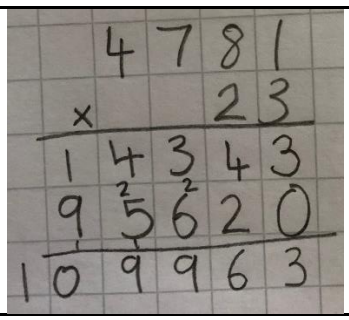
Spot the mistake:

	3	4	0	7
x			1	8
2	3 7	2	5 5	6
	3	4	0	7
3	0	6	6	3
1			1	

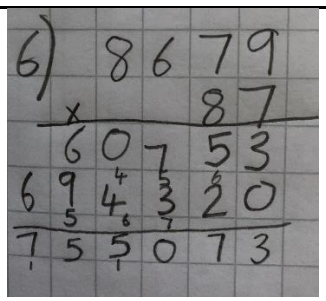
Mark Scheme – Lesson 2

Independent Tasks			
Challenge 1			
1	 1) 71 × 46 = 426 + 2840 = 3266	2	 214 × 46 = 1284 + 8560 = 9844
3	 3) 622 × 54 = 2488 + 31100 = 33588	4	 4) 836 × 27 = 5852 + 16720 = 22572
5	 5) 529 × 54 = 2116 + 26450 = 28566	6	 6) 785 × 23 = 2355 + 15700 = 18055
Challenge 2			
1	 1) 3468 × 62 = 6936 + 208080 = 215016	2	 2) 2376 × 15 = 11880 + 23760 = 35640
3	 3) 6574 × 31 = 6574 + 197220 = 203794	4	 4) 5413 × 86 = 32478 + 433040 = 465518

5

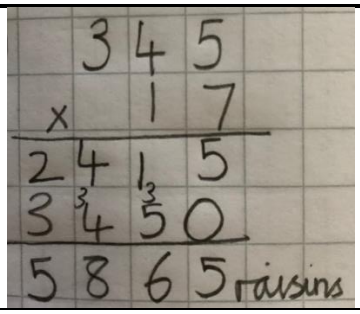


6

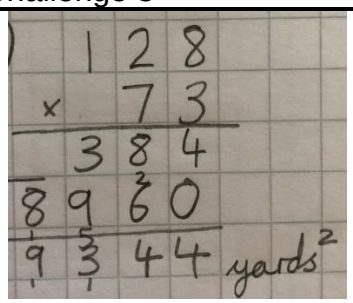


Challenge 3

1



2



3

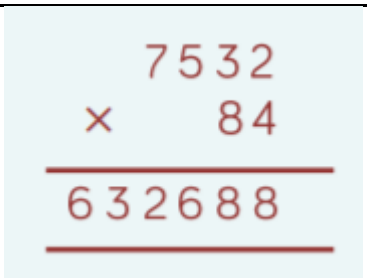
4,458 x 56 = 249,648 **>** 4,523 x 54 = 244,242

4,458 x 55 = 245,190 **>** 4,523 x 54 = 244,242

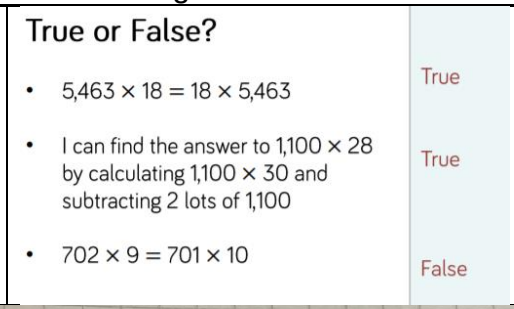
4,458 x 55 = 245,190 **>** 4,522 x 54 = 244,188

Challenge X

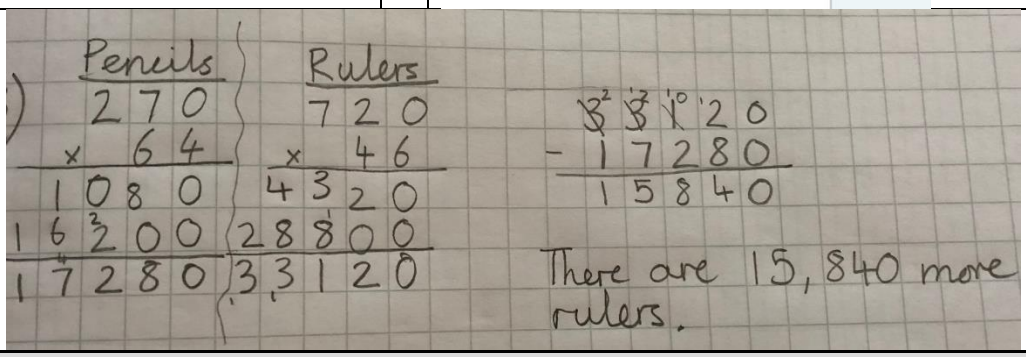
1



2

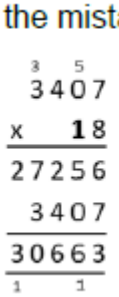


3



Review

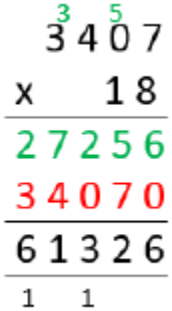
Spot the mistake.



Possible response:

They have forgotten that when you multiply the 3407 by 1, you are actually multiplying by 10.

They have done 1 x 7 = 7 but they should have done 10 x 7 = 70.



Lesson 3		
Learning Intention: WALT multiply decimals by a whole number using a formal method.	Key Vocabulary: Multiplication Product Times Groups of Lots of	What you will need: A computer, tablet or phone for the starter Maths book Pencil Video: Year 6 Maths – Week 5 - Lesson 3

Starter

Play the game Hit The Button:
https://www.topmarks.co.uk/maths-games/hit-the-button

Select Times Tables and either pick a times table you find tricky or select mixed.

Main Teaching

Watch the video Year 6 Maths – Week 5 - Lesson 3, which will guide you through the main input.

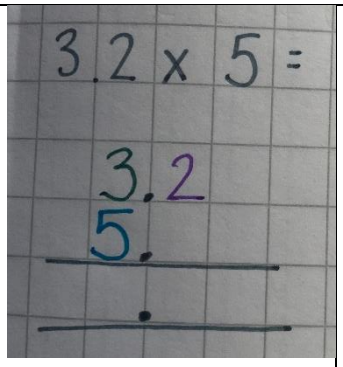
Today, we will be returning to short multiplication. In this lesson we will be multiplying decimal amounts.

Steps to Success

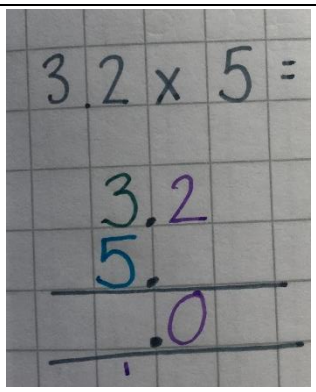
Ones x thousandths
Ones x hundredths
Ones x tenths
Ones x Ones
Ones x Tens
Ones x Hundreds

Example 1

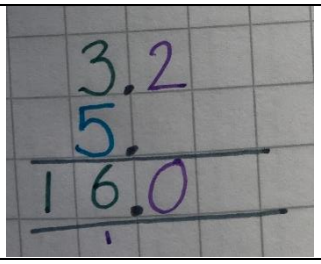
1) **Write out the question in the format.**
Make sure the place value columns line up. Make sure you write the decimal points!



2) **Multiply the ones by the tenths.**
5 x 2 = 10 (Place the 0 in the tenths column and carry the 1 to the ones by placing it below.)

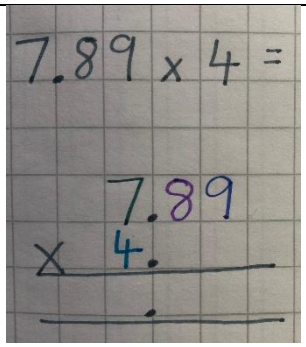


3) **Multiply the ones by the ones.**
5 x 3 = 15 (Add the 1 you carried before to make 16. Place the 6 in the ones column and place the 1 in the tens column.)



Example 2

1) **Write out the question in the format.**
Make sure the place value columns line up. Make sure you write the decimal points!



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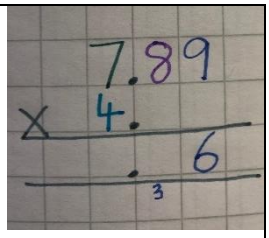
4 x 9 = 36 (Place the 6 in the hundredths column and carry the 3 to the tenths by placing it below.)



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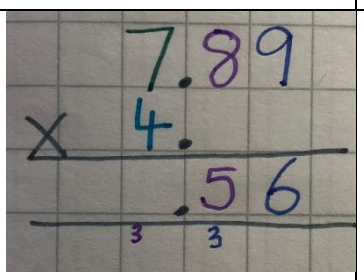
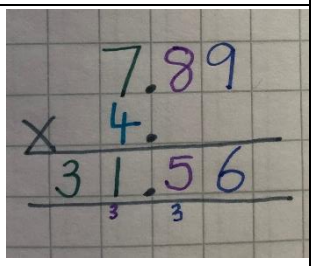
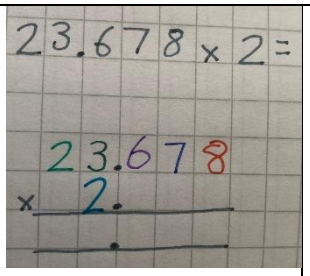


4) **Multiply the ones by the ones.**
4 x 7 = 28 (Add the 3 you carried to 28 to make 31. Place the 1 in the ones column and the 3 in the tens column.)

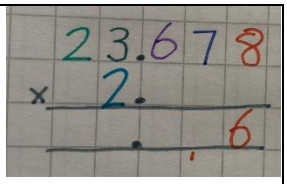


Example 3

1) **Write out the question in the format.**
Make sure the place value columns line up. Make sure you write the decimal points!



2) **Multiply the ones by the thousandths.**
2 x 8 = 16 (Place the 6 in the thousandths column and carry the one under the hundredths column.)



3) **Multiply the ones by the hundredths.**
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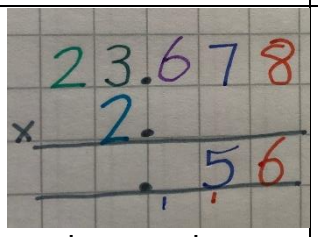
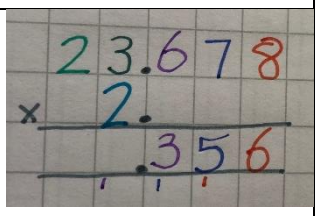
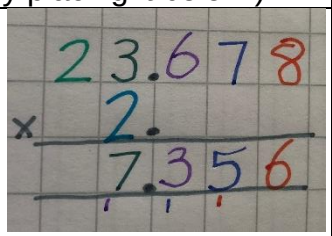


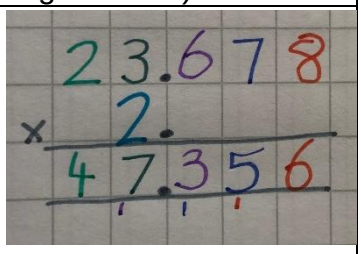
4) **Multiply the ones by the tenths.**
2 x 6 = 12 (Add the 1 you carried to 12 to make 13. Place the 3 in the tenths column and carry the 1 to the ones by placing it below.)



5) **Multiply the ones by the ones.**
2 x 3 = 6 (Add the 1 you carried to 6 to make 7. Place the 7 in the ones column.)



6) **Multiply the ones by the tens.**
2 x 2 = 4 (Place the 4 in the tens column.)



Independent Tasks
Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

1	65.3 x 3 =	2	78.7 x 5 =
3	6.15 x 4 =	4	14.23 x 6 =
5	45.03 x 2 =	6	127.31 x 6 =

Challenge 2

1	A jar of sweets weighs 1.213 kg. How much would 4 jars weigh?	2	It's Lucy's birthday. Sweets cost £1.15 per bag. Lucy bought one for each of her eight friends. How much did she spend altogether?
3	Rosie is saving her pocket money. Her mum says, "Whatever you save, I will give you five times the amount." If Rosie saves £2.23, how much will her mum give her? If Rosie saves £7.76, how much will her mum give her? How much will she have altogether?		
4	What is the product of 23.6 and 7?	5	Mr Smith needs 7 lengths of ribbon measuring 15.8cm each. What is the total length of ribbon required?

Challenge 3

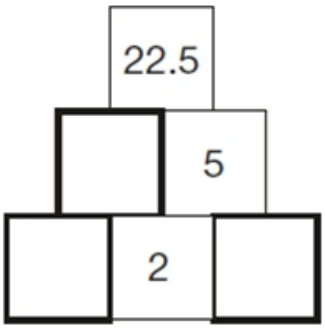
1	Forest School sells badges for charity. For each badge sold, £1.20 is given to charity. How much does the charity get when 12 badges are sold?	2	Cinema tickets cost £3.65 each. Hannah buys 4 tickets. How much does Hannah pay?

3

Here is a number pyramid.

The number in a box is the **product** of the two numbers below it.

Write the missing numbers.

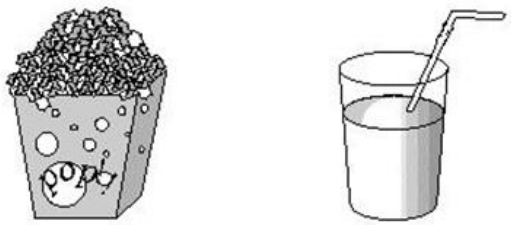


4

It costs Sarah £3.50 to feed her cat each week. How much will it cost her to feed her cat for 9 weeks?

Challenge X

1



Nico buys a box of popcorn and two milkshakes.

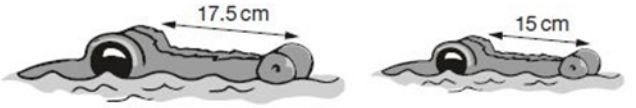
How much does Nico spend **altogether**?

2

The length of an alligator can be estimated by:

- measuring the distance from its eyes to its nose
- then multiplying that distance by 12

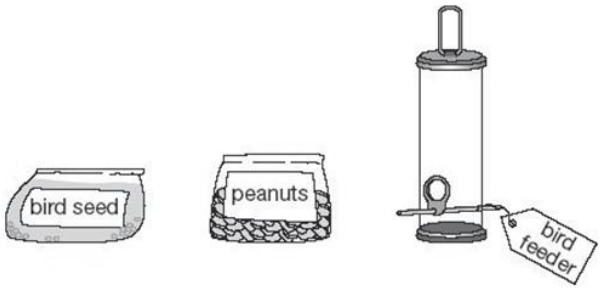
What is the **difference** in the estimated lengths of these two alligators?



Not to scale

3

A shop sells food for birds.



£3.79 for a bag £1.35 for a bag £8.95 each

Amir has £2

He wants to buy a bird-feeder and 4 bags of bird seed.

How much **more** money does he need?

4

Ally and Jack buy some stickers.

Pack of 12 stickers
£10.49

12 stickers
99p each

Ally buys a pack of 12 stickers for £10.49

Jack buys 12 single stickers for 99p each.

How much more does Jack pay than Ally?

Review

Can you find a path from 6 to 0.06?
You cannot make diagonal moves.

6	× 10	× 10	÷ 100
÷ 10	× 100	× 100	÷ 10
× 10	÷ 10	÷ 1,000	÷ 100
÷ 1,000	× 1,000	× 100	0.06

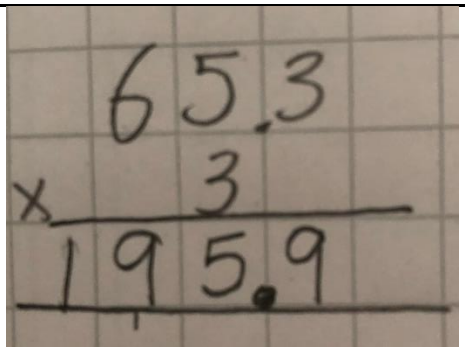
Is there more than one way?

Mark Scheme – Lesson 3

Independent Tasks

Challenge 1

1



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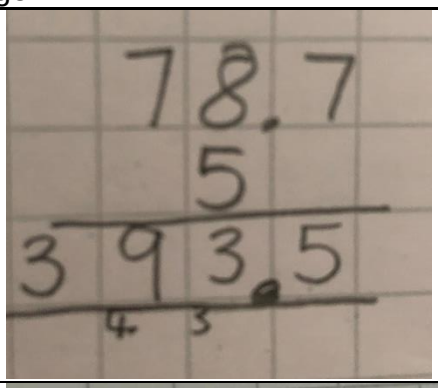

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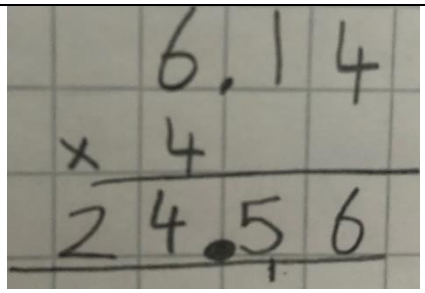

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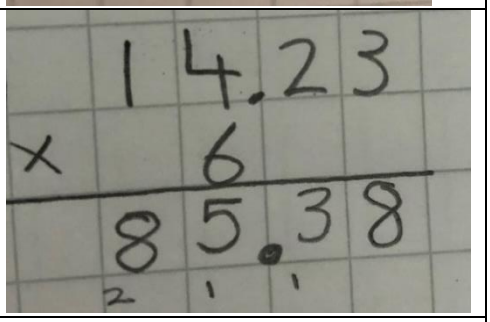

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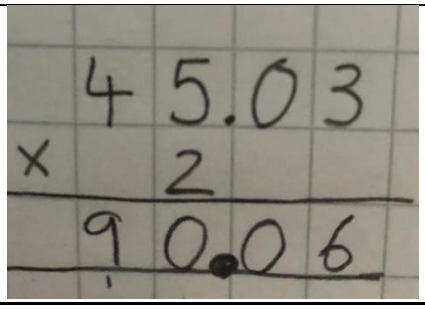

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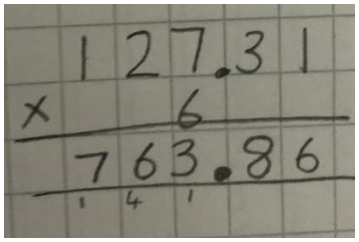
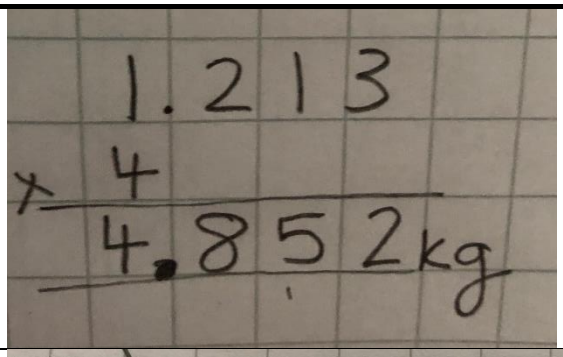


Challenge 2

1



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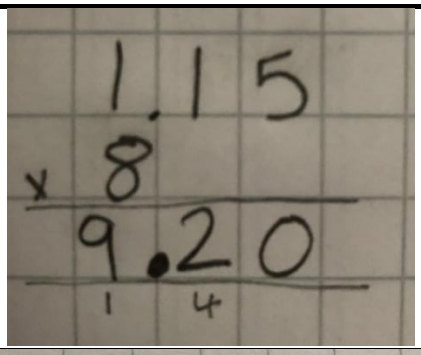

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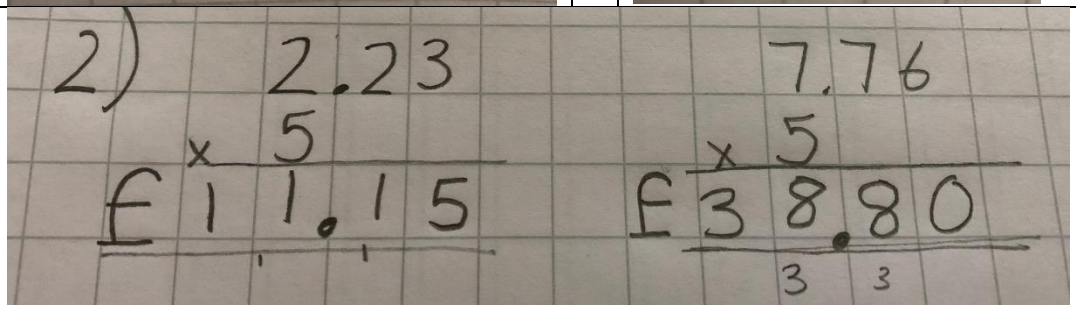
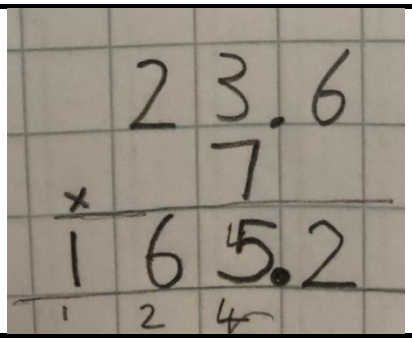


£7.76 + £38.80 = £46.56 Rosie will have £46.56 altogether.

4



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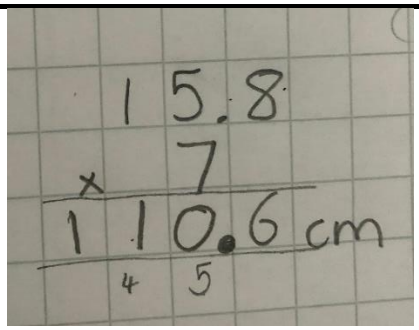
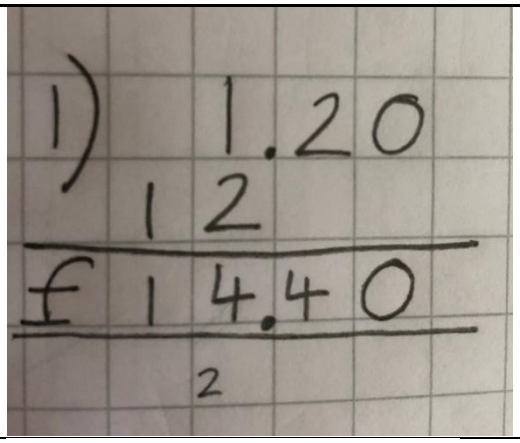


Challenge 3

1



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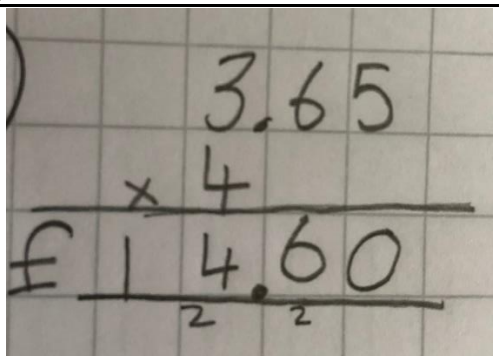

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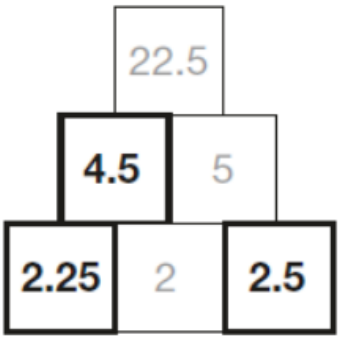

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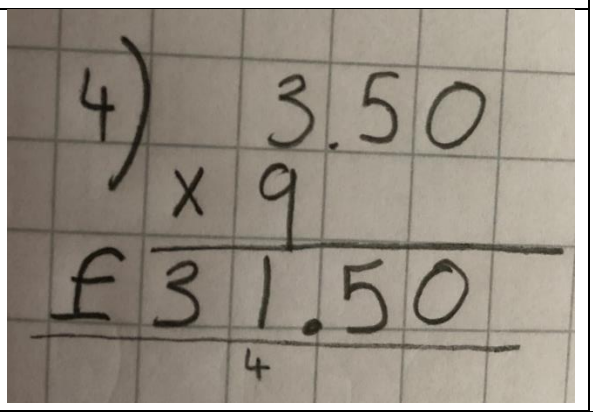
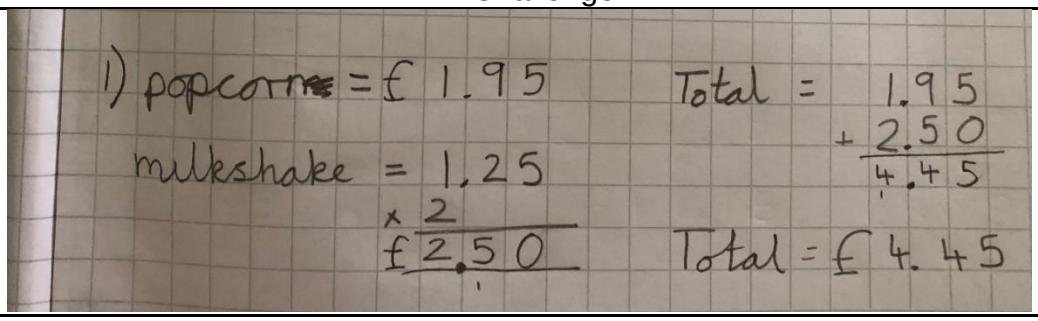
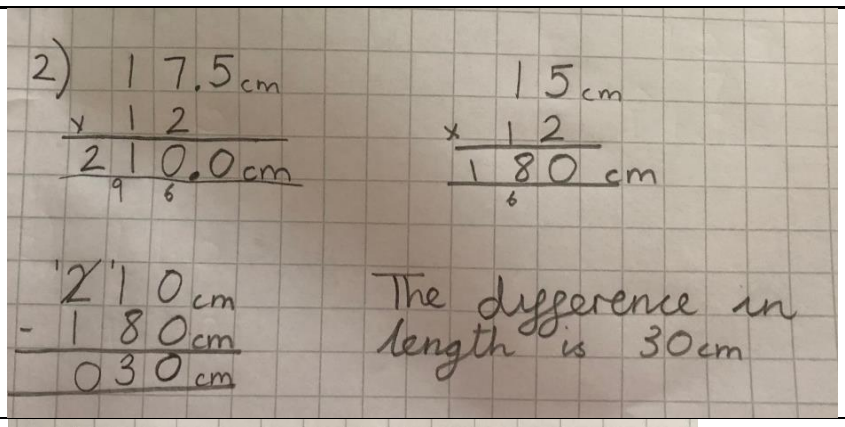


Challenge X

1



2



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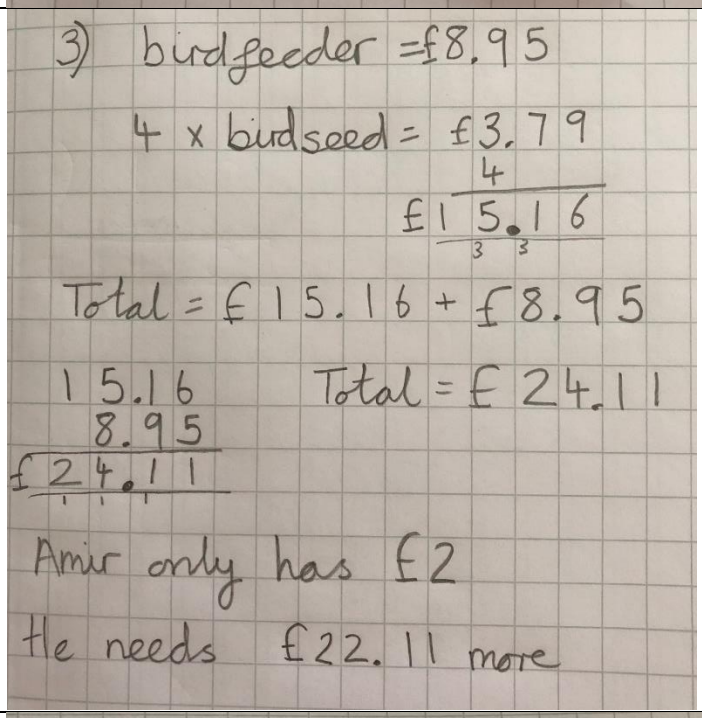
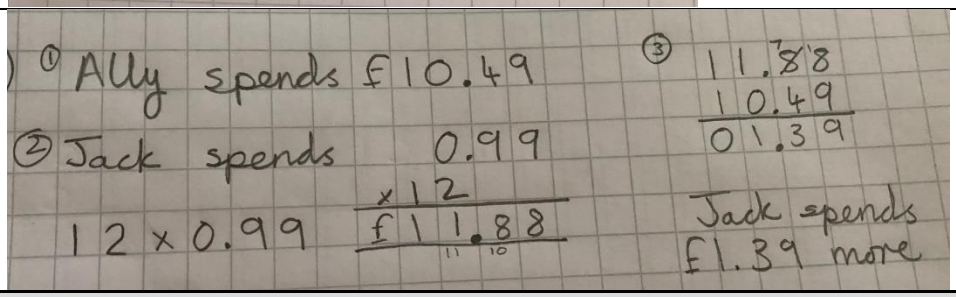


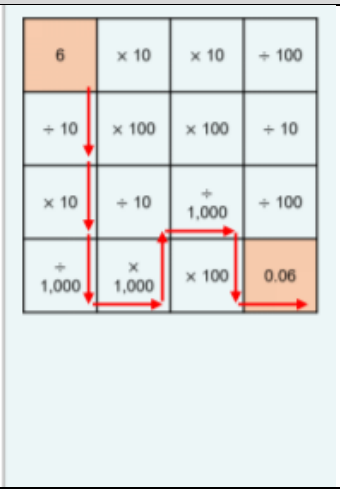
4



Review

Can you find a path from 6 to 0.06?
You cannot make diagonal moves.

6	× 10	× 10	÷ 100
÷ 10	× 100	× 100	÷ 10
× 10	÷ 10	÷ 1,000	÷ 100
÷ 1,000	× 1,000	× 100	0.06



Is there more than one way?

Lesson 4		
Learning Intention: WALT solve problems using short division.	Key Vocabulary: Divide Share Group Dividend Divisor Quotient	What you will need: A computer, tablet or phone for the starter Maths book Pencil Video: Year 6 Maths – Week 5 - Lesson 4

Starter

Beat the Teacher

If you know 3 x 4 = 12 what else do you know?

How many number sentences or representations can you draw/ write that link to this number sentence?

Look in the mark scheme or on the video to see if you could think of more than Miss Chilton.

Main Teaching

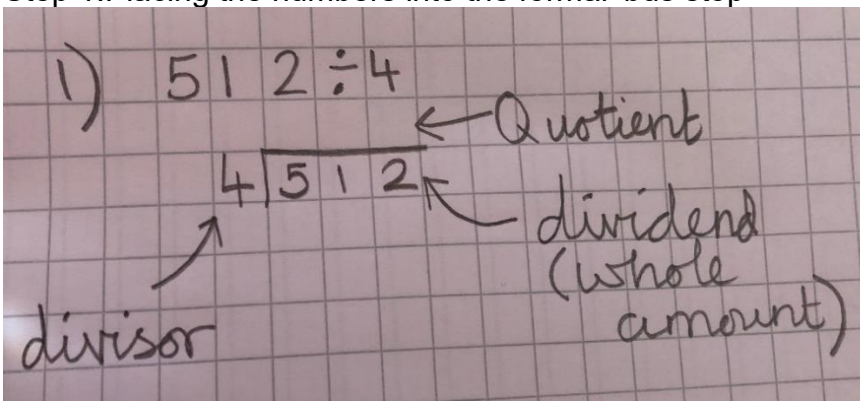
Watch the video Year 6 Maths – Week 5 - Lesson 4, which will guide you through the main input.

Today, we will be practising short division. Some of the challenges will be word problems! As well as the word divide you will need to know share and group.

In a division calculation, each part of the equation has a name.

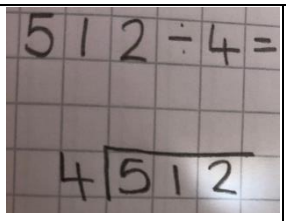
12	÷	3	=	4
Dividend		Divisor		Quotient
Whole amount		Amount of groups		Amount in each group
		In division the values that are the quotient and divisor can be swapped and calculation would still be correct.		

Step 1:Placing the numbers into the formal ‘bus stop’

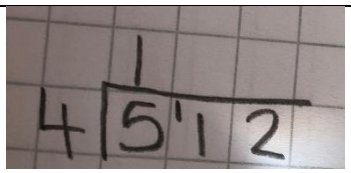


Example 1

1) **Place the dividend inside the bus stop and the divisor on the outside.**

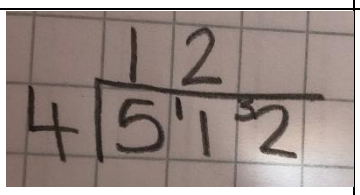


2) **How many groups of the divisor can fit in to the digit in the hundreds column?**



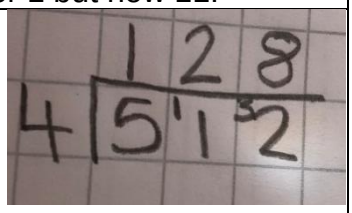
1 group of 4 fits into 5 with one left over. Place the 1 above the bus stop in the hundred column. Place the remainder (1) next to the digit in the tens column. This number is no longer 1 but now 11.

3) **How many groups of the divisor can fit in to the digit in the tens column?**



2 groups of 4 fit into 11 with 3 left over. Place the 2 above the tens column above the bus stop. Place the remainder next to the digit in the ones column.

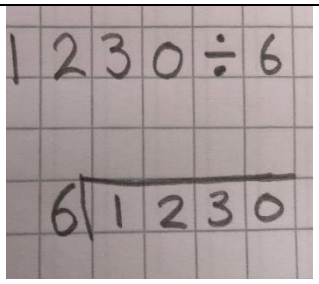
4) **How many groups of the divisor can fit in to the digit in the ones column?**



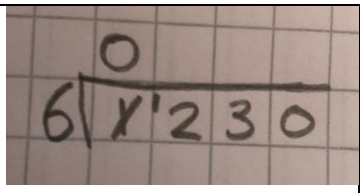
8 groups of 4 fit into 32. Place the 8 above the ones column above the bus stop.

Example 2

1) **Place the dividend inside the bus stop and the divisor on the outside.**

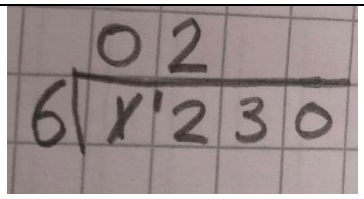


2) **How many groups of the divisor can fit in to the digit in the thousands column?**



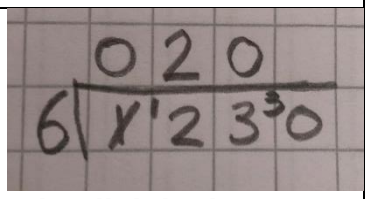
0 groups of 6 fit into 1! Place a 0 above the thousands column above the bus stop. Cross out the one and move it into the hundreds column to make 12.

3) **How many groups of the divisor can fit in to the digit in the hundreds column?**



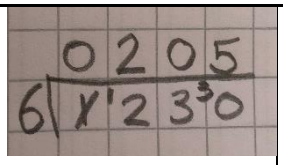
2 groups of 6 fit into 12. Place 2 above the bus stop in the hundred column.

4) **How many groups of the divisor can fit in to the digit in the tens column?**



0 groups of 6 fit into 3! Place a 0 above the tens column above the bus stop. Move the 3 into the ones column to make 30.

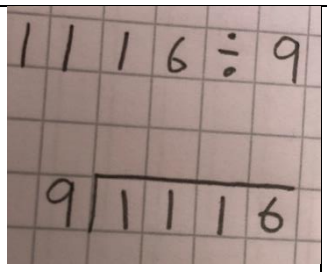
5) **How many groups of the divisor can fit in to the digit in the ones column?**



5 groups of 6 make 30. Place the 5 in the ones column above the bus stop.

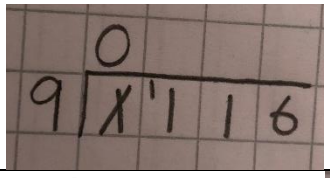
Example 3

1) **Place the dividend inside the bus stop and the divisor on the outside.**

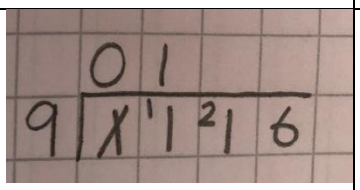


2) **How many groups of the divisor can fit in to the digit in the thousands column?**

0 groups of 9 fit into 1! Place a 0 above the thousands column above the bus stop. Cross out the one and move it into the hundreds column to make 11.

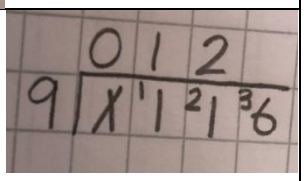


3) **How many groups of the divisor can fit in to the digit in the hundreds column?**



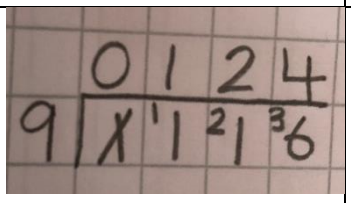
1 group of 9 fits into 11 with 2 left over. Place 1 above the bus stop in the hundred column. Place the 2 (remainder) next to the digit in the tens column to make 21.

4) **How many groups of the divisor can fit in to the digit in the tens column?**



2 groups of 9 fit into 21 with 3 remaining! Place a 2 above the tens column above the bus stop. Move the 3 remaining into the ones column to make 36.

5) **How many groups of the divisor can fit in to the digit in the ones column?**



4 groups of 9 make 36. Place the 4 in the ones column above the bus stop.

Independent Tasks

Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. If you are finding a challenge too tricky or too easy after 3 questions, you should switch challenges.

After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

1	315 ÷ 5 =	4	528 ÷ 4 =
2	288 ÷ 3 =	5	717 ÷ 3 =
3	684 ÷ 2 =	6	472 ÷ 4 =

Challenge 2

1	581 ÷ 7 =	4	576 ÷ 9 =
2	256 ÷ 8 =	5	208 ÷ 8 =
3	564 ÷ 6 =	6	861 ÷ 7 =

Challenge 3

1

Use <, > or = to make the statements correct.

3,495 ÷ 5 ◯ 3,495 ÷ 3

8,064 ÷ 7 ◯ 9,198 ÷ 7

7,428 ÷ 4 ◯ 5,685 ÷ 5

7

2

Mr Porter has saved £8,934
He shares it equally between his three grandchildren.
How much do they each receive?

3

Alan has **45 beans**.

He plants **3 beans** in each of his pots

How many pots does he need?

4

Allen has 5096m of ribbon.

He cuts it into 7 equal pieces.

What is the length of each piece?

5

A spoonful is **5ml.**

How many spoonfuls can you get from this bottle?

Challenge X

1

Year 6 has 2,356 pencil crayons for the year.

They put them in bundles, with 12 in each bundle.

How many complete bundles can be made?

2

Muffins are packed in trays of 6 in a factory.
In one day, the factory makes 5,623 muffins.
How many trays do they need?
How many trays will be full?
Why are your answers different?

3

I am going to divide 6,341 by 8.
I know there will be a remainder before I start.

True or false?
How do you know?

4

A farmer is packing eggs.

Each box holds **six** eggs.

The farmer has 980 eggs to pack.

How many boxes can the farmer **fill** using 980 eggs?

How many eggs will be left over?

5

Write in the missing number.

$\square \times 4 = 96$

Review

Something is not right.

	1	2	
7	9	2 3	7 7

How do you know there is a mistake? What is it?

Mark Scheme – Lesson 4

Starter

3 x 4 = 12 4 x 3 = 12 12 ÷ 4 = 3 12 ÷ 3 = 12

3 + 3 + 3 + 3 = 12 4 + 4 + 4 = 12

30 x 40 = 120 0.3 x 0.4 = 0.12 0.3 x 4 = 1.2 0.4 x 3 = 1.2

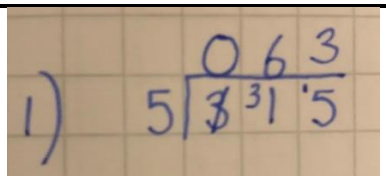
300 x 400 = 120, 000

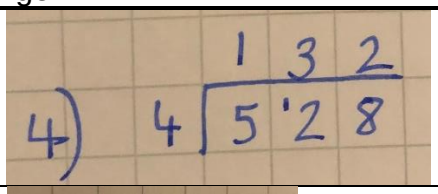
12			
3	3	3	3

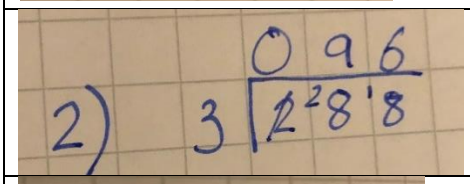
12		
4	4	4

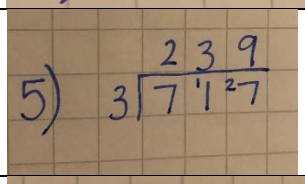
Independent Tasks

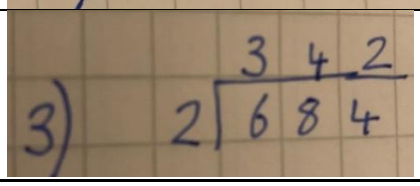
Challenge 1

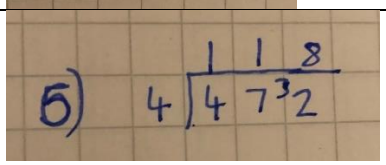




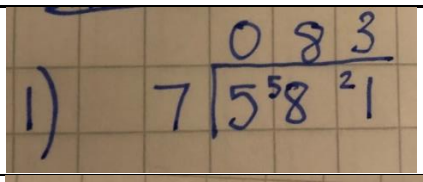


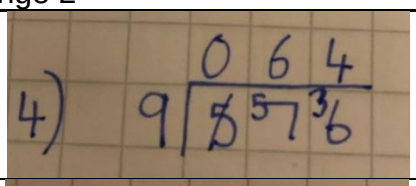


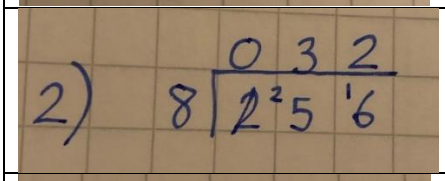


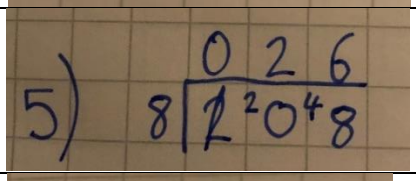


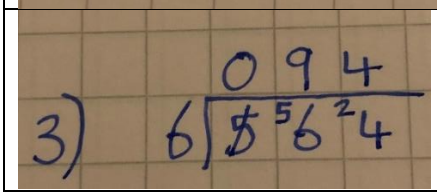
Challenge 2

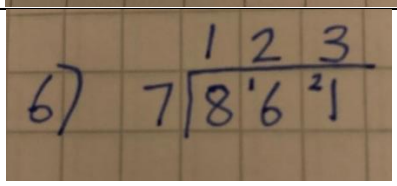






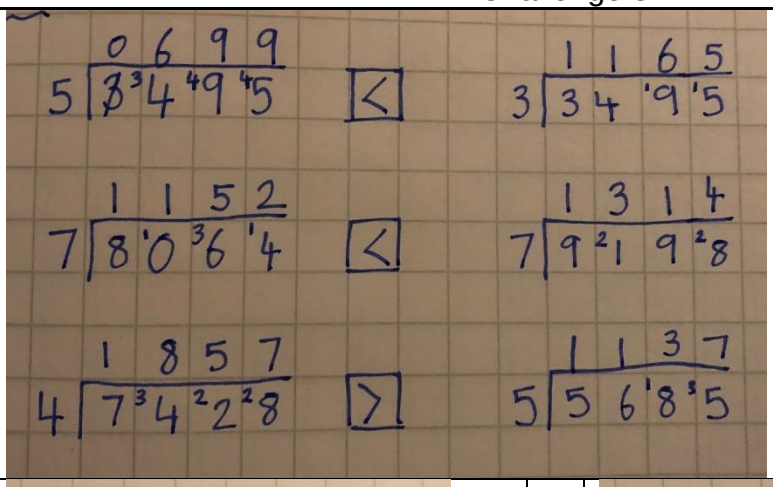






Challenge 3

1



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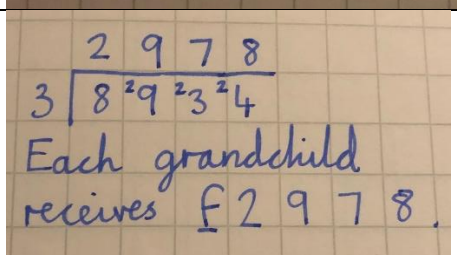

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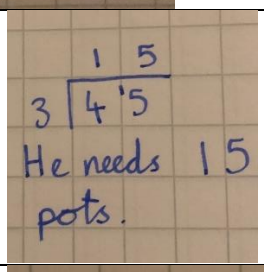

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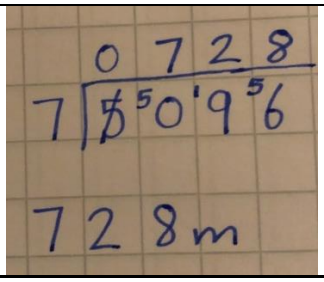

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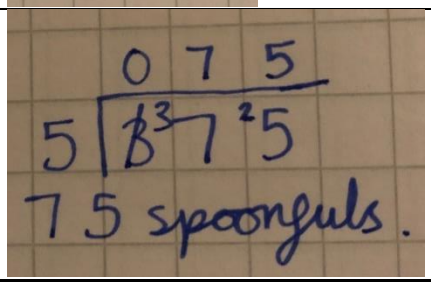
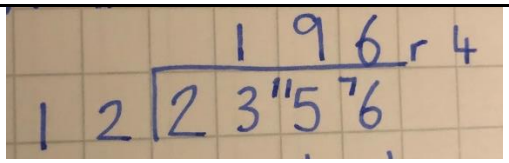


Challenge X

1



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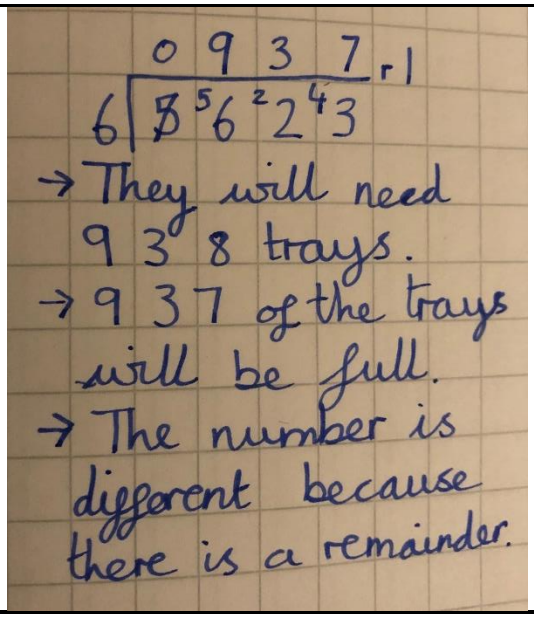
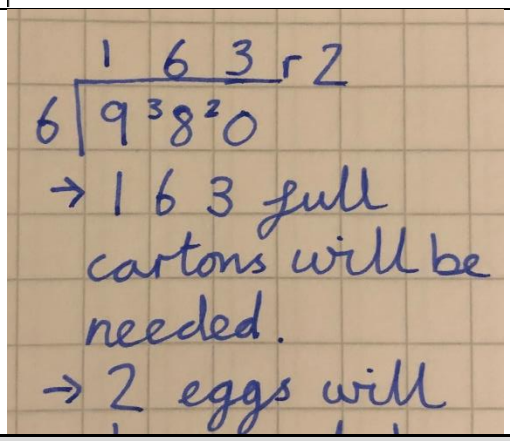
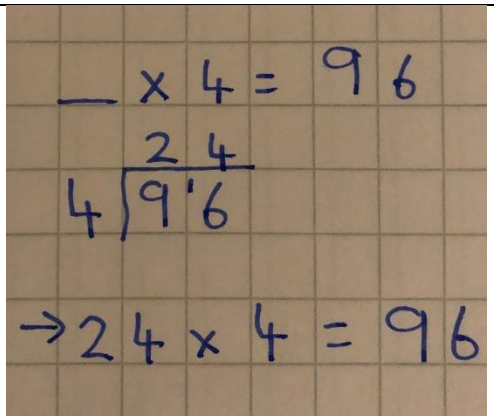


3	**I am going to divide 6,341 by 8. I know there will be a remainder before I start.** True or false? How do you know?	Possible responses: All numbers divisible by 8 are even and 6341 i so I know that there will be a remainder.
4		5 

Review

Something is not right. 1 2 7 | 9 2 3 7 How do you know there is a mistake? What is it?	Possible response: If there were 7 left over, that would create another group so there is something wrong there. 23 tens shared into 7 groups would be 3 tens in each group with 2 tens left over; not 2 tens with 7 tens left over. They should have 27 ones to divide by 7.

Lesson 5		
Learning Intention: WALT divide decimals using short division.	Key Vocabulary: Divide Share Group Dividend Divisor Quotient	What you will need: A computer, tablet or phone for the starter Maths book Pencil Video: Year 6 Maths – Week 5 - Lesson 5

Starter

Read this maths story and solve the problems in it. Check the mark scheme or the lesson video to find out if you had the correct answers.

Miss Allen, Miss Chilton and Mr Gowler decided to have a competition to see who could bake the best lemon cake.

1) Being a gentleman, Mr Gowler offered to go first. He decided to use 145g of flour, 100g of sugar, 4 eggs, 112g of butter, 150ml of lemon juice and 50g of icing sugar.
2) Miss Chilton, LOVES lemon! She decided to make the same cake as Mr Gowler. She doubled the amount of lemon in her cake but kept all of the other ingredients the same.
3) Miss Allen decided she was such an experienced cake maker she would change the amounts of the ingredients so that hers would be the best. She doubled the flour, trebled the sugar, used half the eggs, ¾ of the butter and she quadrupled the amount icing sugar used in Mr Gowler's ingredients. She then used 2/5 of the amount of lemon juice that Miss Chilton used. She baked it in the oven for 30 minutes and….it was a disaster! Mr Gowler won the competition!

Challenge: Can you write a list of Miss Chilton's ingredients and a list of Miss Allen's?

WARNING! Don't try and make any of these cakes at home, no research was done into acceptable cake ingredient measurements by the author.

Main Teaching

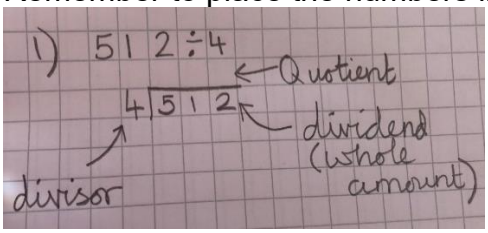
Watch the video Year 6 Maths – Week 5 - Lesson 5, which will guide you through the main input.

A reminder!

12	÷	3	=	4
Dividend		Divisor		Quotient
Whole amount		Amount of groups		Amount in each group
		In division, the values that are the quotient and divisor can be swapped and calculation would still be correct.		

Today, our dividends will be decimal numbers. This may mean that the quotient may also be a decimal number.

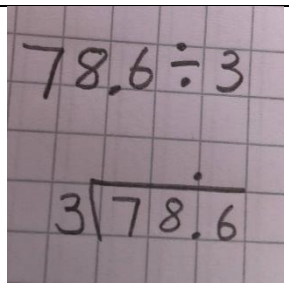
Remember to place the numbers into the formal 'bus stop' correctly.



Let’s try some examples!

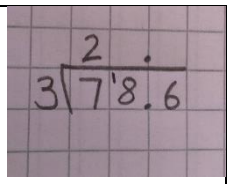
Example 1

1) **Place the dividend inside the bus stop and the divisor on the outside.**



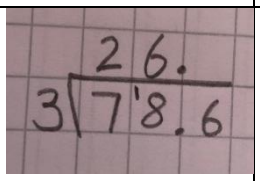
Place the decimal above the bus stop in the correct place now. This always helps me to remember it!

2) **How many groups of the divisor can fit in to the digit in the tens column?**



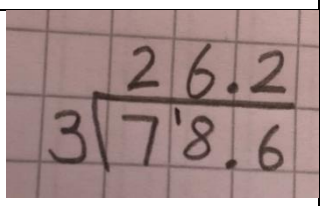
2 group of 3 fit into 7. Place the 2 above the bus stop in the tens column. There is 1 remaining. Place this inside the bus stop next to the digit in the ones column.

3) **How many groups of the divisor can fit in to the digit in the ones column?**



6 groups of 3 fit into 18. Write 6 above the bus stop in the ones column.

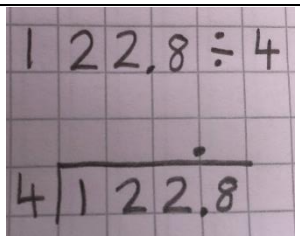
4) **How many groups of the divisor can fit in to the digit in the tenths column?**



2 groups of 3 fit into 6. Write the 2 above the bus stop, above the tenths column.

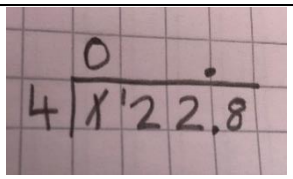
Example 2

1) **Place the dividend inside the bus stop and the divisor on the outside.**



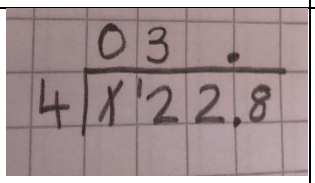
Place the decimal above the bus stop in the correct place now. This always helps me to remember it!

2) **How many groups of the divisor can fit in to the digit in the hundreds column?**



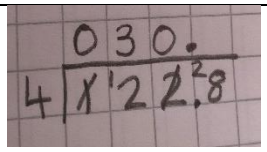
0 group of 4 fit into 1. Place the 0 above the bus stop in the hundreds column. There is 1 left over. Place this inside the bus stop next to the digit in the tens column.

3) **How many groups of the divisor can fit in to the digit in the tens column?**



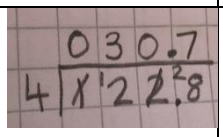
3 groups of 4 fit into 12. Write 3 above the bus stop in the tens column.

4) **How many groups of the divisor can fit in to the digit in the ones column?**



0 groups of 4 fit into 2. Write the 0 above the bus stop, above the ones column. Place the remainder (2) in the tenths column.

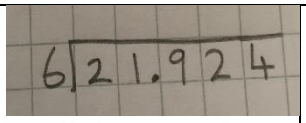
5) **How many groups of the divisor fit in to the digit in the tenths column?**



7 groups of 4 fit in to 28. Place the 7 above the bus stop, in the tenths column.

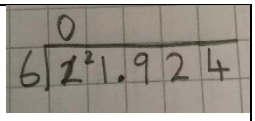
Example 3

1) Place the dividend inside the bus stop and the divisor on the outside.



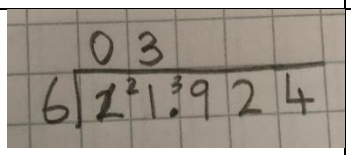
Place the decimal above the bus stop in the correct place now. This always helps me to remember it!

2) How many groups of the divisor can fit in to the digit in the tens column?



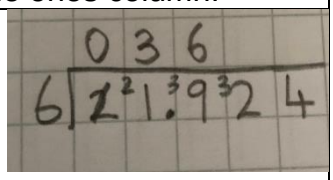
0 group of 6 fit into 2. Place the 0 above the bus stop in the tens column. There is 2 left over. Place this inside the bus stop next to the digit in the ones column.

3) How many groups of the divisor can fit in to the digit in the ones column?



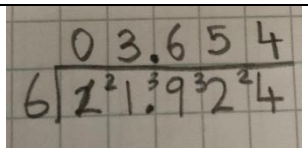
3 groups of 6 fit into 21 with 3 remaining. Write 3 above the bus stop in the tens column. Put the 3 that remain in the tenths column.

4) How many groups of the divisor can fit in to the digit in the tenths column?



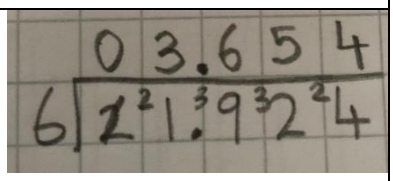
6 groups of 6 fit into 39. Write the 6 above the bus stop, above the tenths column. Place the remainder (3) in the hundredths column.

5) How many groups of the divisor fit in to the digit in the hundredths column?



5 groups of 6 fit in to 32 with 2 left over. Place the 5 above the bus stop, in the hundredths column. Place the remainder in the thousandths column.

6) How many groups of the divisor fit in to the digit in the thousandths column?



4 groups of 6 fit in to 24. Place the 4 above the bus stop, in the thousandths column.

Independent Tasks

Please complete 1 or 2 challenges. You can only go on to Challenge X if you have completed Challenge 3 first. If you are finding a challenge too tricky or too easy after 3 questions, you should switch challenges.
After you have completed your challenge, check your answers in the mark scheme. If you got an answer wrong look carefully and identify where you made a mistake.

Challenge 1

1	63.6 ÷ 6 =	4	81.6 ÷ 6 =
2	48.16 ÷ 4 =	5	257.6 ÷ 8 =
3	64.4 ÷ 7 =	6	0.96 ÷ 4 =

Challenge 2

1	What is 1.32m shared between 4?	4	What is ¼ of 4.96 litres?
2	£3.99 ÷ 7 =	5	8 cans of drink cost £2.96. What does one can cost?
3	6 x __ = 7.38kg	6	Which is greater a fifth of £4.35 or £3.52 ÷ 4?

Challenge 3

1

7 bags contain the same amount of money and total £12.46.

How much is in each bag?

2

The perimeter of a regular octagon is 40.96cm
Calculate the length of each side.

3

4 pineapples cost £3.40

Calculate the cost of **1** pineapple.

4

Modelling clay is sold in two different shops.
Shop A sells four pots of clay for £7.68
Shop B sells three pots of clay for £5.79
Which shop has the better deal?
Explain your answer.

Challenge X

1

What do you notice about all of the answers to these calculations?

434 ÷ 8
271.25 ÷ 5
108.5 ÷ 2
162.75 ÷ 3

Can you write another calculation that would fit with this set?

2

Amina posts three large letters.

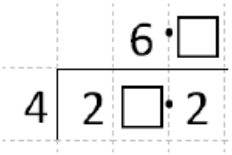
The postage costs the same for each letter.

She pays with a £ 20 note.

Her change is £14.96

What is the cost of posting **one** letter?

3



Review

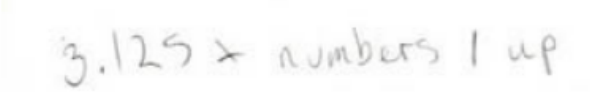
On my calculator I divided one whole number by another whole number and got the answer 3.125.

I know that both numbers were less than 50, but can't remember what they were.

Can you work out what they were?

Here are some methods used to tackle the problem:

Richard:



He explained:

"I multiplied 3.125 by 1, then I tried multiplying 3.125 by 2, then I multiplied 3.125 by 3 ..."

Thomas:

I first looked at the number 0.125 and worked out what fraction of 1 it is. It turned out that it was an eighth.

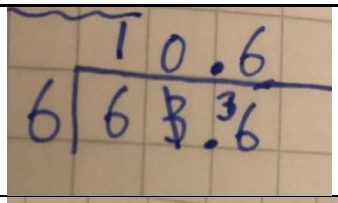
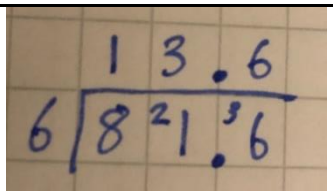
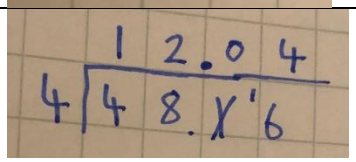
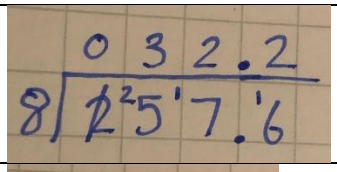
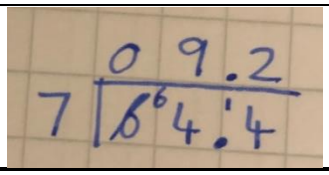
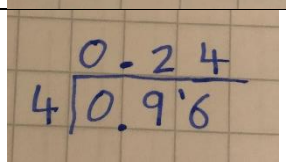
Pick one of the methods and use it to solve the problem. Can you think of an alternative method to find the answer?

Mark Scheme – Lesson 5

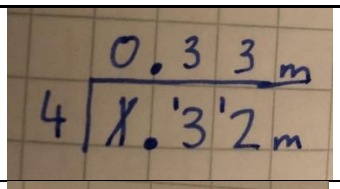
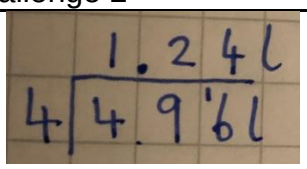
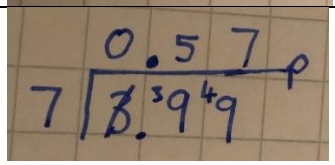
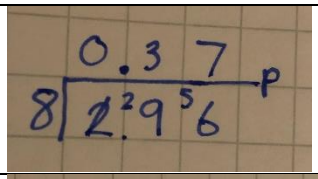
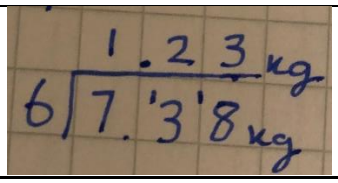
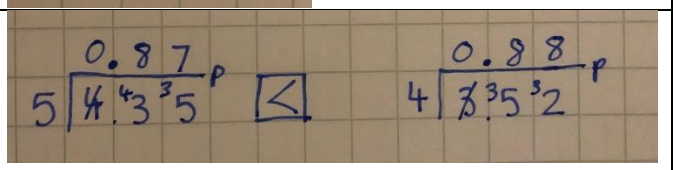
Starter		
Mr Gowler	Miss Chilton	Miss Allen
145g flour 100g sugar 4 eggs 112g butter 150ml lemon juice 50g icing sugar	145g flour 100g sugar 4 eggs 112g butter 300ml lemon juice 50g icing sugar	290g flour 300g sugar 2 eggs 84g butter 120ml lemon juice 200g icing sugar

Independent Tasks

Challenge 1

1		4	
2		5	
3		6	

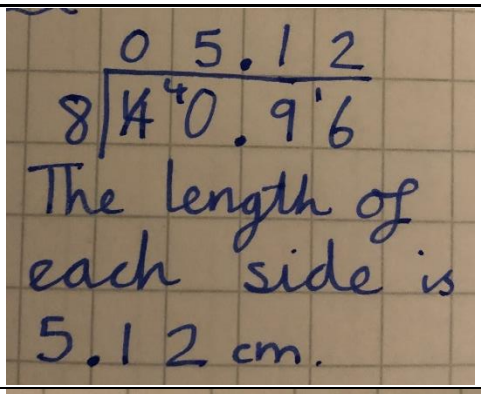
Challenge 2

1		4	
2		5	
3		6	

Challenge 3

1	£12.46 ÷ 7 = £1.78 01.78 7) 12.46

2



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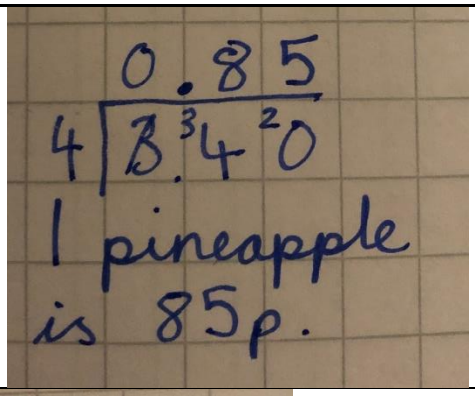
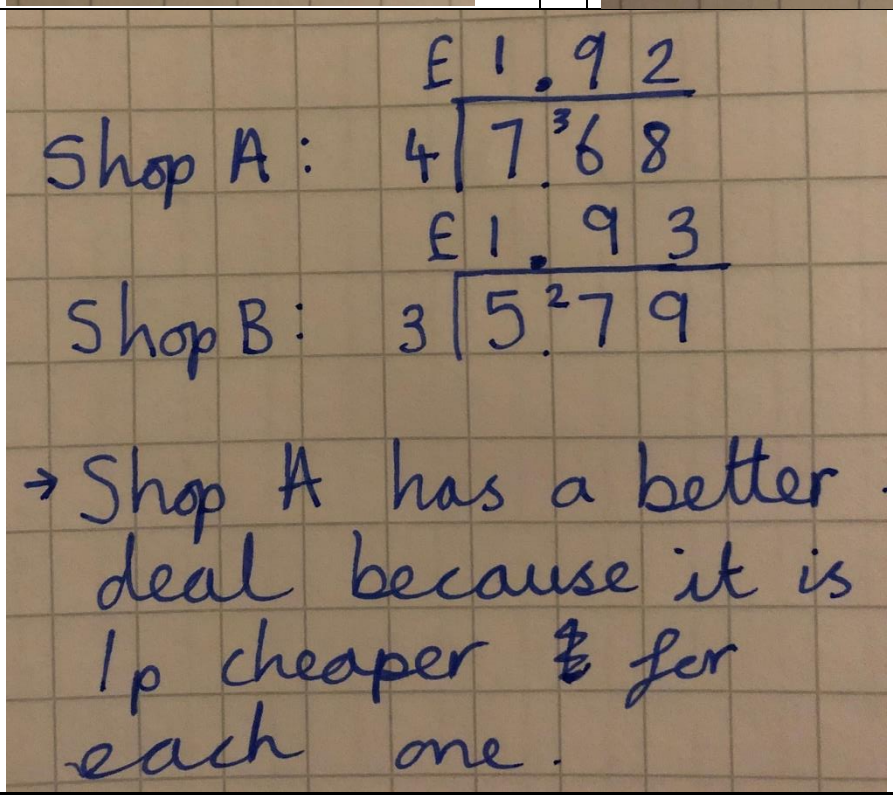


4



Challenge X

1

What do you notice about all of the answers to these calculations?

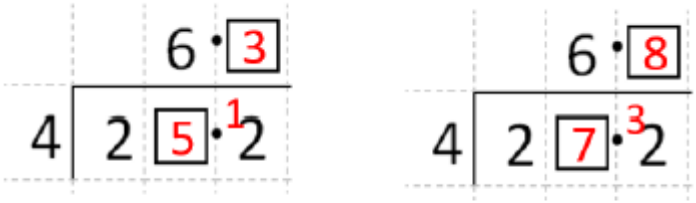
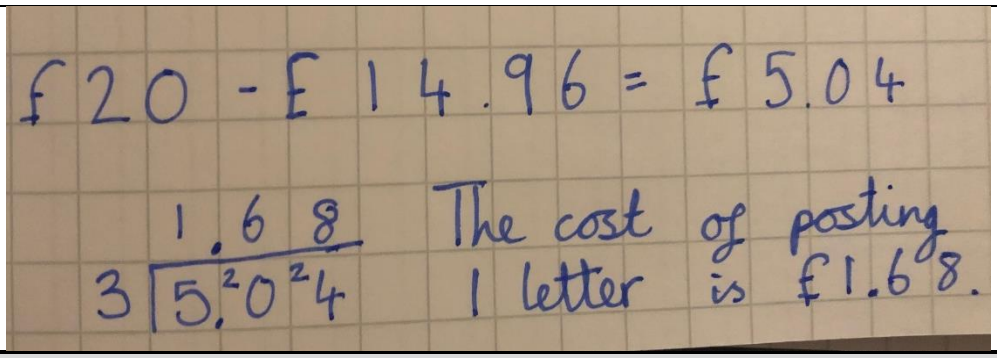
434 ÷ 8
271.25 ÷ 5
108.5 ÷ 2
162.75 ÷ 3

Can you write another calculation that would fit with this set?

434 ÷ 8 = 54.25
271.25 ÷ 5 = 54.25
108.5 ÷ 2 = 54.25
162.75 ÷ 3 = 54.25

Possible additional calculations:

217 ÷ 4 = 54.25
325.5 ÷ 6 = 54.25
488.25 ÷ 9 = 54.25

2	
3	

Review
The numbers could have been: 25 ÷ 8 = 3.125