		Year 4 maths – Sum	mer 2 Week 7 beginning:	: 13.07.20	
Theme	Formal Methods Lesson 1 of 2 Division	Formal Methods Lesson 2 of 2 Division	Word Problems Lesson 1 of 2 Addition and Subtraction	Word Problems Lesson 2 of 2 Multiplication and Division	Place Value Lesson 1 of 1
Factual fluency (to aid fluency)	Division facts to 12	True or False? Division Facts	Subtract with up to three digits	True or False? Multiplication Facts	Identify the place value of digits
Problem/ activity of the day Remember, just like in class, you can still show the depth of your knowledge LINK	(Lesson 1 resources below) <u>MAKING LINKS:</u> Earlier on this year, we learnt how to divide numbers using partitioning and a formal written method. Today we are going to remind ourselves how to divide two digit numbers by a one digit number. Have a look at this <u>Making Links video</u> before we start. <u>THINK: (support below)</u> Can you help me with this problem? Ravi brought 68 bags of sweets to the class end of Year 4 party. He wanted to share them equally into 2 boxes. How many bags of sweets will fit into each box? If you have online parent access, this lesson is based on Textbook 4A, Chapter 4, Lesson 12. <u>SEE: (model below)</u> You can see how to solve this problem <u>here.</u> <u>DO:</u> Answer the questions below.	(Lesson 2 resources below) <u>MAKING LINKS:</u> Yesterday, we reminded ourselves how to divide two digit by one digit numbers using a formal written method. Today we are going to practice dividing three digit numbers by one digit numbers. <u>THINK: (support below)</u> Can you help me with this problem? Ruby has 696 stickers. She wants to share them equally between Sam, Hannah and Elliott. How many stickers will Sam, Hannah and Elliott each receive? If you have online parent access, this lesson is based on Textbook 4A, Chapter 4, Lesson 13. <u>SEE: (model below)</u> You can see how to solve this problem <u>here.</u> <u>DO:</u> Answer the questions below.	(Lesson 3 resources below) <u>MAKING LINKS:</u> Last week, we had a go at solving word problems involving addition and subtraction. Today, we are going to consolidate our learning. <u>THINK (support below):</u> Can you help me with this problem? A baker made 2750 chocolate cookies and 1638 vanilla cookies. He sold 3195 cookies altogether. How many cookies did he have left? If you have online parent access, this lesson is based on Textbook 4A, Chapter 2, Lesson 15. <u>SEE: (model below)</u> Click here and scroll down to the Year 4 addition and subtraction videos to remind yourself how to use these operations successfully. <u>DO:</u> Answer the questions below.	(Lesson 4 resources below) <u>MAKING LINKS:</u> Yesterday we had a go at solving word problems using addition and subtraction. Today, we are going to have a go at solving word problems using multiplication and division. <u>THINK (support below):</u> Can you help me with this problem? Amira has 264 marbles. She has 6 times as many marbles as Emma has. How many marbles does Emma have? How many marbles do Amira and Emma have altogether? If you have online parent access, this lesson is based on Textbook 4A, Chapter 4, Lesson 18. <u>SEE: (model below)</u> Click here to see how to use the bus stop method for division. <u>DO:</u> Answer the questions below.	(Lesson 5 resources below) <u>MAKING LINKS:</u> In Year 4, we have been working with numbers up to 10,000. In Year 5, we will be working with numbers up to one million! We are going to remind ourselves about place value. <u>IHINK: (support below)</u> Can you help me with this problem? Sam and Ruby want to buy a new house. They've seen houses of different sizes and different prices but they are not sure which house is the most expensive. Can you help them? <u>SEE: (model below)</u> Watch the lesson video <u>here.</u> <u>DO:</u> Answer the questions below.
Methods, tips, clues & checks	Day 1 resources and answers (below) r resources to support you to T	Day 2 resources and answers (below)	Day 3 resources and answers (below)	Day 4 resources and answers (below)	Day 5 resources and answers (below)



<b>THINK:</b> If you have online parent access, this lesson is based on Textbook	<b>SEE: MAKE LINKS HERE AND WATCH THE LESSON VIDEO HERE:</b> <b>METHOD 1 - PARTITIONING</b> To share 68 sweets equally into 2 boxes, we need to divide 68 by 2:				
4A, Chapter 4, Lesson 12					
Ravi brought 68 bags of sweets to the class end of Year 4	$68 \div 2$ . To help us, we can partition $68$ into $60$ and $8$ . This will make it easier				
party. He wanted to share them equally into 2 boxes. How many bags of sweets will fit into each box?	to divide as we can divide each part separately before adding them back together.				
	68         60       8             Step 1: Divide tens 60 ÷ 2 = 30         Step 2: Divide ones 8 ÷ 2 = 4         Step 3: Add the quotients 30 + 4 = 34         68 ÷ 2 = 34.				
DO:					
Part 1: Solve using the partitioning method. a. $88 \div 4$	METHOD 2 – FORMAL WRITTEN METHOD (COMPACT METHOD)				
<b>5.</b> 64 ÷ 2	Here is a reminder of the key vocabulary you will need to use when				
<b>c.</b> 96 ÷ 3	completing division calculations:				
<b>d.</b> 42 ÷ 2					
	Quotient - The word for answer (only used in division).				
e. 66 ÷ 6 Part 2: Solve using the compact method.	Quotient - The word for answer (only used in division).				
e. 66 ÷ 6 Part 2: Solve using the compact method. a. 96 ÷ 8	(only used in division).				
e. 66 ÷ 6 Part 2: Solve using the compact method. a. 96 ÷ 8 b. 98 ÷ 7	T O (only used in division).				
e. 66 ÷ 6 Part 2: Solve using the compact method. a. 96 ÷ 8 b. 98 ÷ 7 c. 64 ÷ 4	T O (only used in division). 3 4 Divisor - the number we				
<ul> <li>a. 66 ÷ 6</li> <li>Part 2: Solve using the compact method.</li> <li>a. 96 ÷ 8</li> <li>b. 98 ÷ 7</li> <li>c. 64 ÷ 4</li> <li>d. 91 ÷ 7</li> </ul>	T O (only used in division). Divisor - the number we are dividing by. 2 6 8				
e. 66 ÷ 6 Part 2: Solve using the compact method. a. 96 ÷ 8 b. 98 ÷ 7 c. 64 ÷ 4 d. 91 ÷ 7	T O (only used in division). 3 4 Divisor - the number we				
<ul> <li>a. 42 ÷ 2</li> <li>a. 66 ÷ 6</li> <li>Part 2: Solve using the compact method.</li> <li>a. 96 ÷ 8</li> <li>b. 98 ÷ 7</li> <li>c. 64 ÷ 4</li> <li>d. 91 ÷ 7</li> <li>e. 81 ÷ 3</li> <li>Use the support frames below to help you.</li> </ul>	T O (only used in division). (only used in division). 3 4 2 6 8 Divisor - the number we are dividing by. Dividend - the number we				



## With the compact method, you must ask yourself: "Can I take groups of 2 from each place?" We are taking groups of 2 because that is the divisor in this problem.











Use these division frames to help you solve these division calculations. Remember to re-watch the video if you need to!



#### Day 2 Resources

**<u>THINK</u>**: If you have online parent access, this lesson is based on Textbook 4A, Chapter 4, Lesson 13.

## Ruby has 696 stickers. She wants to share them equally between Sam, Hannah and Elliott. How many stickers will Sam, Hannah and Elliott each receive?



## <u>DO</u>:

Use both strategies to solve these division equations.

- **a.** 448 ÷ 2
- **b.** 996 ÷ 3
- **c.** 486 ÷ 2
- **d.** 884 ÷ 4
- **e.** 862 ÷ 2
- **f.** 969 ÷ 3
- **g.** 484 ÷ 4
- **h.** 884 ÷ 2
- **i**. 696 ÷ 3
- **j.** 848 ÷ 4

Use the support frames below to help you.

#### SEE VIDEO HERE: METHOD 1 – PARTITIONING

To help Ruby share 696 stickers equally between Sam, Hannah and Elliott, she needs to divide 696 by 3. Her calculation will be:

 $696 \div 3$ . Just like yesterday, we can partition 696 into 600, 90 and 6 because this will make it easier to divide each part separately before adding the quotients back together.



## METHOD 2 - FORMAL WRITTEN METHOD (COMPACT METHOD)

Here is a reminder of the key vocabulary that you will need to use when completing division calculations:





## With the compact method, you must ask yourself: "Can I take groups of 3 from each place?" We are taking groups of 3 because that is the divisor in this problem.















#### Day 2 DO Resources:

Use these frames for a, b, c, d and e to remind you how to use the compact method of division.



Now have a go at solving f, g, h, i and j by yourself. Remember to set out your calculations just like this, and draw your counters to help you take equal groups.



#### Day 3 Resources

**<u>THINK</u>**: If you have online parent access, this lesson is based on Textbook 4A, Chapter 2, Lesson 15.

## A baker made 2750 chocolate cookies and 1638 vanilla cookies. He sold 3195 cookies altogether. How many did he have left?



<u>DO</u>:

Solve these word problems involving addition and subtraction. Look carefully at the bar models below to help you visualise the problem then use a formal written method to solve. Look out for the hints and tips which will help you.

**a.** Out of 4820 fans watching a football match, 1884 are men, 1798 are women and the rest are children. How many children were at the match? Try subtracting the number of men and the number of women from the total number of people at the match to find the number of children.

**b.** The snack stall at the football match took £3450. £890 was spent on drinks, £1650 was spent on hot food and the rest was spent on cold food. How much was spent on cold food? Try subtracting the amount spent on drinks and the amount spent on hot food from the total amount taken at the football match. This will help you find out how much was spent on cold food.

c. On Saturday, 3018 people attended a funfair. 850 more people attended the funfair on Saturday than attended it on Sunday. Altogether, how many people attended the funfair over the two days? Use the bar model to see if you need to add or subtract to find the number of people who attended on Sunday. Then try adding the totals together to find out how many people attended over the two days.

d. There were 8000 books for sale at the school book fair. 2419 books were sold on the first day and 2398 books were sold on the second day. How many books were left at the end of the second day? Try subtracting 2419 books and then try subtracting 2398 books.

## <u>SEE: VIDEOS HERE – scroll down for the Year 4 addition and</u> subtraction videos.

We can represent the first part of the problem as a bar model. This will help us to see what we need to do first:



We can see from the bar model that we need to add the number of chocolate cookies to the number of vanilla cookies to find the total number of cookies that the baker made.



We can see that the baker made 4388 cookies in total. Now, we need to figure out the next part of the problem. The baker sold 3195 cookies altogether. Again, we can visualise this problem on a bar model.



We can see that now we need to subtract the number of cookies sold from the total number of cookies made.



Now we can see that the baker had 1193 cookies left.



#### Day 3 Resources:





Use this frame to help you add and subtract accurately.

Don't forget, you may have to rename digits!

## **ADDITION:**

- Add ones
- Add tens •
- Add hundreds •
- Add thousands •

#### SUBTRACTION:

- Greatest number on top!
- Subtract ones
- Subtract tens •
- Subtract hundreds •
- Subtract thousands. •



#### Day 4 Resources

**<u>THINK</u>**: If you have online parent access, this lesson is based on Textbook 4A, Chapter 4, Lesson 18.

## Amira has 264 marbles. She has six times as many marbles as Emma. How many marbles does Emma have? How many marbles do Amira and Emma have altogether?



## <u>DO</u>:

Solve these word problems involving multiplication and division. Look carefully at the bar models below to help you visualise the problem then use a formal written method to solve. Look out for the hints and tips which will help you.

**a.** A 44cm ribbon is cut into two pieces so that one piece is 3 times as long as the other. What is the length of the shorter piece? Try dividing 44cm by 4 to find the length of the shorter piece. Look at the bar model to see why you need to divide by 4.

**b.** There are 156 sheep on a farm. The farm has three times as many cows as sheep. How many cows are on the farm? Try multiplying 156 by 3.

**c.** A farmer picked 173 apples on Monday. On Tuesday, he picked three times as many apples as he did on Monday. How many apples did the farmer pick altogether on the two days? Try multiplying 173 by 3 then add your answer to the 173 apples that the famer picked on Monday.

**d.** There are five times as many boys as girls in a school. Together the school has 810 pupils. How many boys are there? Try dividing 810 pupils by 6. Look at the bar model to help you see why. When you have your answer, multiply it by 5 to find the total number of boys.



First, we need to find out how many marbles Emma has. We know that Amira has 264 marbles and she has six times as many as Emma. We need to find out what one part of Amira's bar model is worth because then we can find out how much Emma's part is worth.

Amira has 264 marbles so we need to divide this amount by 6 as she has 6 times as many marbles as Emma.

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When we divide 264 by 6, we can see that there are equal groups of 44. Therefore, Emma has 44 marbles.

<u>Watch this video</u> to see how to use the bus stop method of division to solve this problem.

Now we know that Emma's part is worth 44 marbles, we need to calculate how many marbles Amira and Emma have altogether. We need to multiply 44 by 7 because between them, Emma and Amira's bar models are made up of 7 parts altogether.

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We can see that Emma and Amira had 308 marbles altogether.



#### Day 4 Resources.

Use these bar models to help you visualise the problems. Read the questions carefully – did you notice the hints and tips for solving the problems accurately?







Use this frame to help you divide.



Use this frame to help you multiply.

Use this frame to help you add or subtract.







#### Day 5 Resources

#### THINK:

Sam and Ruby want to buy a new house. They've seen three houses that they like, but they are not sure which house is the most expensive. Can you help them?







£561.500

£572,750

£581.425

Part 1: Use the place value chart below. What is the value of the

digit 4 in each of these numbers?

**a.** 376, 984

DO:

**b.** 642, 311

c. 834, 263

**d.** 417, 677

e. 109, 540

**f.** 583, 428

## Part 2: Write these amounts in numbers.

a. Four hundred and thirty three thousand, six hundred and twenty one.

**b.** Two hundred and sixty two thousand, four hundred and ninety eiaht.

c. Five hundred and eighty one thousand, three hundred and seventy six.

**d.** One hundred thousand, five hundred and nine,

e. Eight hundred thousand, eight hundred.

### **SEE: VIDEO HERE**

We can use a place value chart to help Sam and Ruby find out which of the three houses are the most expensive. We can see that each of the numbers is a six digit number, so our place value chart will need to have six places. Sam and Ruby use this place value chart to help, by writing the digits from the prices on to their chart. They start with House 1.

	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	1		
	100,000	10,000	1000	100	10	· · · ·			
	5	7	2	7	5	$\cap$			
	J	/	Z	/	J	U			
l									
Fi	ve hundred	and seven	ty two thous	and sev	en hundrer	and fifty p	ound		
	Five hundred and seventy two thousand , seven hundred and fifty pounds								
	£ 572 , 750								

They do the same for House 2.

ſ	Hundred Thousands 100,000	Ten Thousands 10,000	Thousands 1000	Hundreds 100	Tens 10	Ones 1		
	5	8	1	4	2	5		
Five hundred and eighty one thousand , four hundred and twenty five pounds $\pounds 581$ , 425								

Finally, they use their place value chart to find out how much House 3 is.







Sam and Ruby can check which is the most expensive house by comparing the digits.

They start in the **hundred thousands** place because this is the highest value. As all the digits in the **hundred thousands** place are all 5, they look at the next highest value which is the **ten thousands** place.

They can see that House 2 has the highest value digit in the **ten thousands** place.

Therefore, Sam and Ruby can see that House 2 is the most expensive.

You might have noticed that the six digit numbers have commas in them. This is to help Ruby and Sam read them accurately. A comma is used after every three places:

#### Five hundred and seventy two thousand , seven hundred and fifty

£572 , 750

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
100,000	10,000	1000	100	10	1
<b>–</b>	-	$\mathbf{a}$	7	_	$\sim$
5		-7		5	
Ŭ	•	-	,	Ŭ	Ŭ

By using their place value chart to find out the value of each digit in the six digit number, Ruby and Sam are able to see that House 2 is the most expensive and House 3 is the least expensive. Which one do you think they should buy?



#### Day 5 Resources

Use this place value chart to find the value of the digit 4 in each of the numbers.

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
100,000	10,000	1000	100	10	1



# **ANSWERS:**

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Part 1:	Part 1:	Make sure you have	Make sure you have	Part 1 :
<b>a.</b> 22	<b>a.</b> 224	used a formal written	used a formal written	<b>a.</b> 4
<b>b.</b> 32	<b>b.</b> 332	method to help you	method to help you	<b>b.</b> 40,000 or forty
<b>c.</b> 32	<b>c.</b> 243	solve today's problems.	solve today's problems.	thousand.
<b>d.</b> 21	<b>d.</b> 221			<b>c.</b> 4000 or four
<b>e.</b> 11	<b>e</b> . 431	a. 1138 were children.	<b>a.</b> The shorter piece is	thousand.
	<b>f.</b> 323	<b>b.</b> £910 was spent on	11cm in length.	<b>d.</b> 400,000 or four
Part 2:	<b>g.</b> 121	cold food.	<b>b.</b> There are 468 cows	hundred thousand.
<b>a.</b> 12	<b>h.</b> 442	<b>c.</b> 5186 people	on the farm.	<b>e.</b> 40 or forty.
<b>b.</b> 14	<b>i.</b> 232	attended the funfair	<b>c.</b> The farmer picked	f. 400 or four hundred.
<b>c.</b> 16	<b>j.</b> 212	over the two days.	692 apples on both	
<b>d.</b> 13	<b>3</b>	d. 3183 books were left	days.	Part 2 :
<b>e.</b> 27		at the end of the	<b>d.</b> There are 675 boys in	a. 433, 621
		second day.	the school.	b. 262, 498
				c. 581, 376
				d. 100,509
				e. 800,800
				0.000,000

