Year 4 maths – Summer 2 Week 6 beginning: 06.07.20

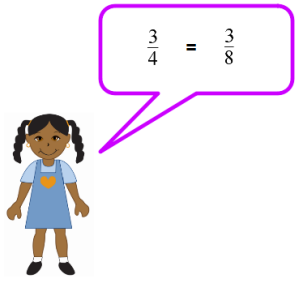
Theme	Fractions Lesson 1 of 2 Finding Equivalent Fractions	Fractions Lesson 2 of 2 Simplifying Fractions	Formal Methods Lesson 1 of 5 Addition and Subtraction	Formal Methods Lesson 2 of 5 Multiplication	Formal Methods Lesson 3 of 5 Multiplication
Factual fluency (to aid fluency)	**Practise the 7 times table here – Step 1B In Sequence**	**Practise the 9 times table here.**	**Practise the 12 times table here (select 12 times table Y4)**	**Complete Level 4, Multiplication, Mixed Tables to x12.**	**Practise times tables up to 12.**
Problem/ activity of the day **Remember, just like in class, you can still show the depth of your knowledge** LINK	**(Lesson 1 resources below)** **MAKING LINKS:** In Year 4 we have learnt that a fraction is a number that is used to represent equal parts of a whole number. Equivalent fractions are fractions which have the same value even though they look different. You can make links to our previous learning here. **THINK: (support below)** A Year 4 class are investigating equivalent fractions. Melanie says: I know that $\frac{3}{4}$ is equivalent to $\frac{3}{8}$ because the numerators are the same. Is Melanie correct? *If you have online parent access, this lesson is based on textbook 4A, chapter 6, lesson 4.* **SEE: (model below)** You can see how to solve this problem here. **DO:** Answer the questions below.	**(Lesson 2 resources below)** **MAKING LINKS:** Yesterday we reminded ourselves about fractions and how to find equivalent fractions. Today, we are going to use our knowledge of equivalent fractions to simplify fractions. **THINK: (support below)** My friend says that $\frac{18}{30}$ is a larger fraction than $\frac{3}{5}$ because the numbers are larger. Is he correct? Is it true that $\frac{18}{30}$ is larger than $\frac{3}{5}$? Is it possible that they could be equivalent fractions? **SEE: (model below)** You can see how to solve this problem here. **DO:** Answer the questions below.	**(Lesson 3 resources below)** **MAKING LINKS:** We learnt how to use a formal written method for addition and subtraction using four digit numbers earlier in Year 4. Today, we are going to practise this. **THINK (support below):** Lucy and Jack were saving money to go on holiday. Lucy saved £4256 and Jack saved £1987. How much did they save altogether? Lucy and Jack decided to go to Florida. The holiday cost £4552. How much money did they have left over after they paid for their holiday? *If you have online parent access, this lesson is based on textbook 4A, chapter 2, lessons 4 and 12.* **SEE: (model below)** Click here and scroll down to the Year 4 addition and subtraction videos to remind yourself how to use these operations successfully. **DO:** Answer the questions below.	**(Lesson 4 resources below)** **MAKING LINKS:** We have been working hard to learn our times tables facts to 12 and this year, we challenged ourselves to compete in a times tables tournament across the Q1E trust. Today we are going to remind ourselves how to multiply using a formal written method. **THINK (support below):** New Town Primary School has 7 classes. Each class has 29 children. How many children attend New Town Primary School? *If you have online parent access, this lesson is based on textbook 4A, chapter 4, lesson 6.* **SEE: (model below)** Click here and select Learning Support videos from the Home Learning tab at the top. Scroll down to remind yourself how to use the expanded method for multiplication. **DO:** Use the expanded method for multiplication to calculate the answers to the questions.	**(Lesson 5 resources below)** **MAKING LINKS:** Yesterday, we learnt how to multiply two digit numbers by one digit using a variety of methods. Today, we are going to multiply three digit numbers by one digit using the expanded method for multiplication. **THINK: (support below)** The music teacher at New Town Primary School wants to buy new musical instruments to use in her music lessons. She decides to buy 5 violins. What is the total cost? *If you have online parent access, this lesson is based on textbook 4A, chapter 4, lesson 9.* **SEE: (model below)** You can remind yourself how to use the expanded method for multiplication here. **DO:** Answer the questions below.
Methods, tips, clues & checks	**Day 1 resources and answers (below)**	**Day 2 resources and answers (below)**	**Day 3 resources and answers (below)**	**Day 4 resources and answers (below)**	**Day 5 resources and answers (below)**

See below for resources to support you to THINK-SEE-DO

Day 1 Resources:

THINK: *If you have online parent access, this lesson is based on textbook 4A, chapter 6, lesson 4.*

A Year 4 class are investigating equivalent fractions. Melanie says: "I know that $\frac{3}{4}$ is the same as $\frac{3}{8}$ because the numerators are the same." Is Melanie correct?



DO:

Use multiplication or division facts to find these equivalent fractions:

a. $\frac{2}{4} = \frac{\square}{12} = \frac{1}{\square}$

b. $\frac{3}{4} = \frac{\square}{16} = \frac{15}{\square}$

c. $\frac{1}{6} = \frac{\square}{12} = \frac{4}{\square}$

d. $\frac{2}{6} = \frac{\square}{3} = \frac{3}{\square}$

e. $\frac{5}{6} = \frac{\square}{18} = \frac{25}{\square}$

f. $\frac{1}{7} = \frac{\square}{21} = \frac{2}{\square}$

g. $\frac{3}{7} = \frac{\square}{28} = \frac{9}{\square}$

h. $\frac{6}{7} = \frac{\square}{49} = \frac{30}{\square}$

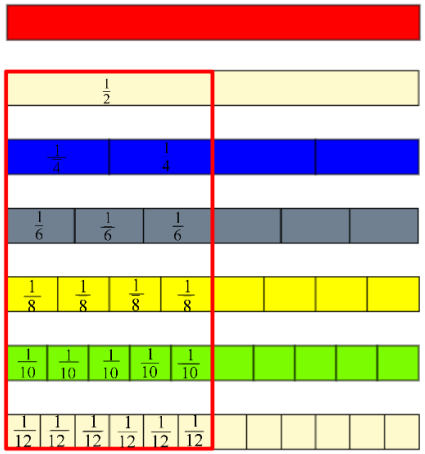
Deepening:

How many ways can you show two eighths?

SEE: MAKING LINKS VIDEO HERE

Watch this video to help you SEE how to solve today's problem.

Equivalent fractions are fractions that have different numerators and denominators but have the **same value**. They take up the same amount of space of the whole but the numbers look different.

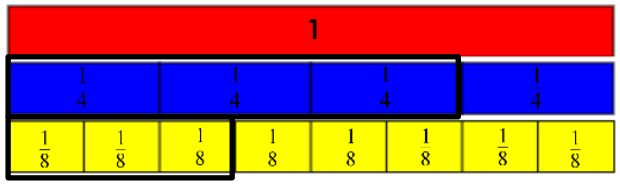


We can use a fractions wall to help us find equivalent fractions or we can use our knowledge of multiplication and division facts to help us.

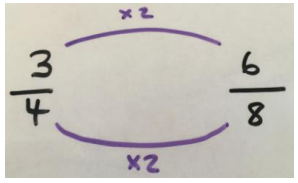
We can make equivalent fractions by multiplying or dividing the numerator and the denominator by the **same amount**.

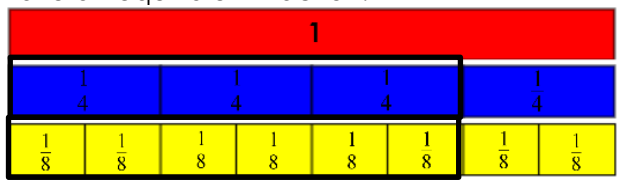
$\frac{3}{4}$ and $\frac{3}{8}$ are **not** equivalent just because they have the same numerators!

This model shows Melanie's fractions:



We can see that $\frac{3}{4}$ and $\frac{3}{8}$ are not equivalent, because these fractions do not have the same value. We can see that three eighths have a smaller value than three quarters. If I multiplied the numerator and the denominator of $\frac{3}{4}$ by 2, I would make an equivalent fraction:

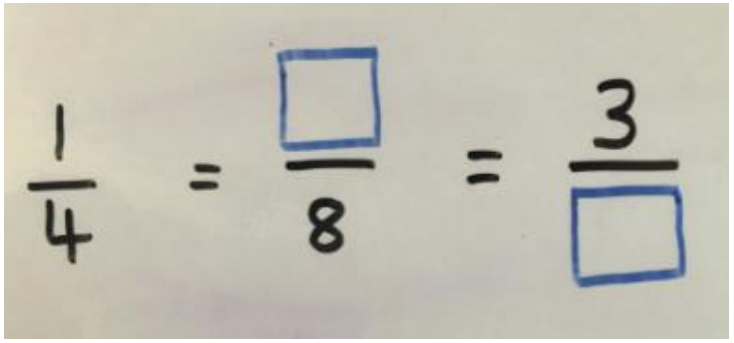




SEE continued on the next page.

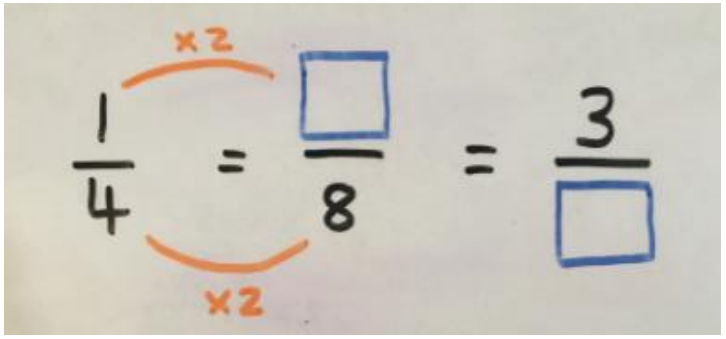
Day 1 Resources SEE Continued:

How can I find these equivalent fractions?

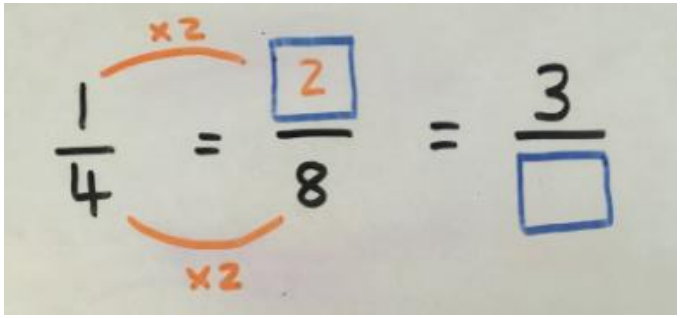


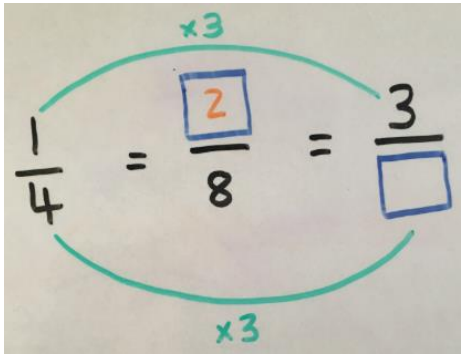
Look at $\frac{1}{4}$. How can I find an equivalent fraction? I can see that the denominator is 4. If I look at the next fraction in the sequence, I can see that the denominator is 8. What do I need to multiply 4 by to get 8?

4 x ? = 8
4 x 2 = 8



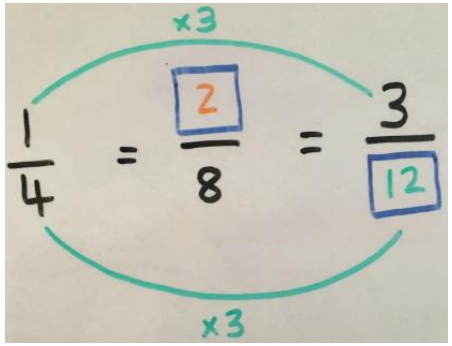
Remember! If we multiply the denominator by 2, we MUST do the same to the numerator.





Look at the numerators in this example. I can see that the numerator in the first fraction is 1 and the numerator in the third fraction is 3. I know that I need to multiply 1 by 3. I also know that what I do to the numerator, I MUST do to the denominator, and therefore, I need to multiply the denominator in the first fraction (4) by 3.

4 x 3 = 12



Day 2 Resources

THINK:

My friend says that $\frac{18}{30}$ is a larger fraction than $\frac{3}{5}$ because the numbers are larger. Is he correct? Is it true that $\frac{18}{30}$ is a larger fraction than $\frac{3}{5}$? Is it possible that they could be equivalent fractions?

DO:

Simplify these fractions using the strategy we have learnt today.

a. $\frac{2}{4}$

b. $\frac{35}{40}$

c. $\frac{3}{6}$

d. $\frac{18}{20}$

e. $\frac{4}{36}$

f. $\frac{12}{36}$

g. $\frac{5}{35}$

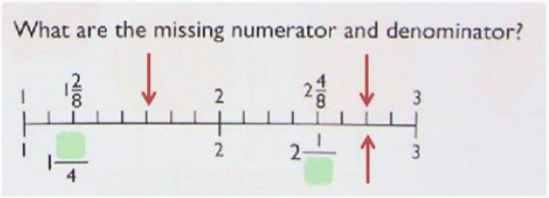
h. $\frac{3}{30}$

i. $\frac{44}{48}$

j. $\frac{25}{60}$

Deepening:

1. Fill in the green boxes
2. What fraction would you write where the red arrows are? Can they be written in two ways?

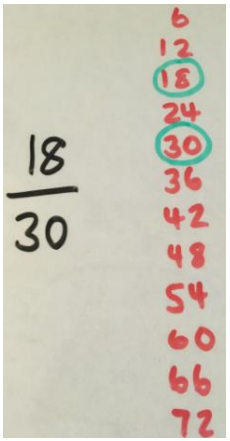


SEE: VIDEO HERE

It would be easy to assume that $\frac{18}{30}$ is the larger fraction because the numbers are greater than those in the fraction $\frac{3}{5}$ but to find out if my friend is correct, we need to simplify the fraction with the greater numbers so we can compare accurately.

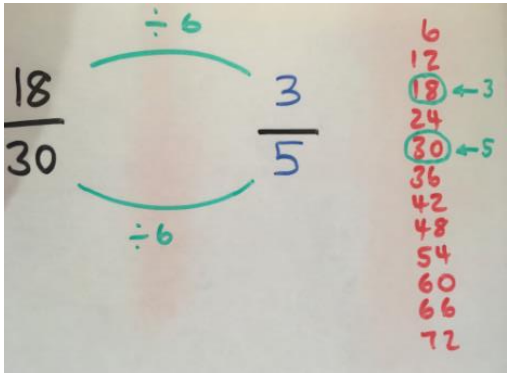
Simplifying fractions means **finding an equivalent fraction** where the numbers are as **small as possible**. In other words, we need to simplify the larger-looking fraction by making the numbers in that fraction as small as possible.

Look at this fraction. What do you notice about the numbers that are in the fraction?



The numbers in this fraction both appear in the six times table!

This tells me that I need to divide **both** the numerator and the denominator by 6 to simplify the fraction. Remember – we must do the same to both the numerator and the denominator.



Writing multiples of 6 along the side of my calculation will help me to divide by 6 successfully. I can see that 18 is the third multiple in the six times table so my simplified numerator will be 3. I can also see that 30 is the fifth multiple in the six times table so my simplified denominator will be 5.

So I can see that my friend is not correct because these fractions are equivalent!

Day 3 Resources

THINK: *If you have online parent access, this lesson is based on textbook 4A, chapter 2, lessons 4 and 12.*

Lucy and Jack were saving money to go on holiday. Lucy saved £4256 and Jack saved £1987. How much did they save altogether?

Lucy and Jack decided to go to Florida. The holiday cost £4552. How much money did they have left over after they paid for their holiday?

DO:

1.Use a formal written method to solve:

a. 1452 + 1769
b. 1746 + 2684
c. 2986 + 3058
d. 3745 + 1467
e. 3354 + 4857
f. 3617 – 2328
g. 5487 – 1399
h. 6842 – 3298
i. 7921 – 2348
j. 7624 – 4339

2. Yasmin and Javinder collected football stickers. Yasmin collected 3289 stickers and Javinder collected 5796 stickers. How many stickers did they collect altogether? Show using a bar model and solve using a formal written method.

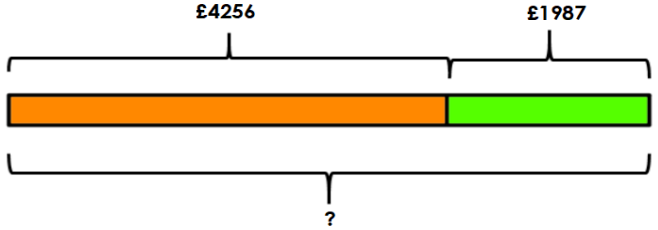
3. Callum wanted to collect the football stickers too. Yasmin and Javinder gave Callum 2500 stickers to help him out. How many stickers did Yasmin and Javinder have left over? Show using a bar model and solve using a formal written method.

Deepening:

You have to use eight of the nine digits 1, 2, 3, 4, 5, 6, 7, 8 ,9 each time to make two 4-digit numbers. Find two numbers that have the smallest possible difference. How many different solutions are there?

SEE: VIDEOS HERE – scroll down for the Year 4 addition and 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:



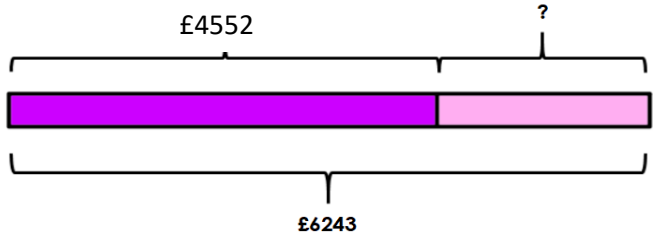
We need to add Lucy and Jack's savings together to find out how much they saved.

	TH	H	T	O
	1	1	1	
+ £	4	2	5	6
£	1	9	8	7
£	6	2	4	3

Remember to rename! Make sure you clearly show the renamed digit so you don't forget to include it as part of the calculation.

Lucy and Jack saved £6243 altogether.

The holiday to Florida cost £4552. How much money did Lucy and Jack have left over after they paid for their holiday? We can represent this part of the problem with a bar model too!



We need to subtract the cost of the holiday from the total amount of savings.

	TH	H	T	O
	5	11		
- £	~~6~~	~~2~~	14	3
£	4	5	5	2
	1	6	9	1

Remember to rename! Make sure you clearly show the renamed digit so you don't forget to include it as part of the calculation.

Lucy and Jack had £1691 left over.

Day 4 Resources

THINK: *If you have online parent access, this lesson is based on textbook 4A, chapter 4, lesson 6.*

New Town Primary School has 7 classes. Each class has 29 children. How many children attend New Town Primary School?

DO:

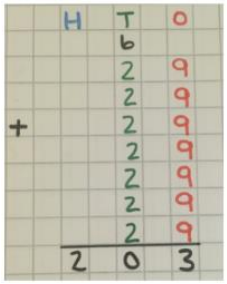
Find the total amount using the expanded method for multiplication.

a. 28 x 7
b. 59 x 6
c. 74 x 8
d. 92 x 5
e. 43 x 4
f. 87 x 7
g. 36 x 9
h. 47 x 8
i. 29 x 6
j. 74 x 3

Deepening:

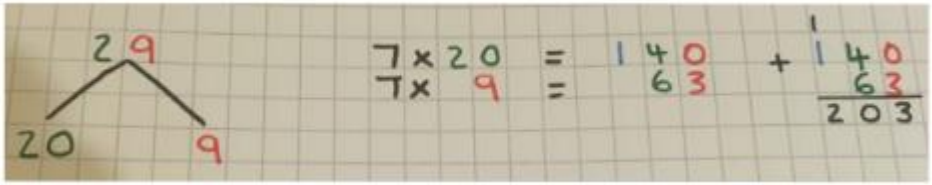
Use your knowledge of multiplication to find possible pairs of numbers to make each calculation correct.

SEE:

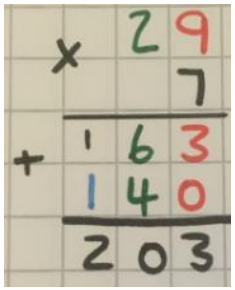


I could use repeated addition to solve today's problem. I could add 29 seven times but I'm not sure this is the most efficient method.

I could use partitioning to help me solve the problem. I have partitioned 29 into tens and ones. Then, I have multiplied the tens by 7 and the ones by 7, because there are 7 classes in the school. Now I have completed the multiplication, I add together the totals using a formal written method.



I could use a formal written method for multiplication. This is the expanded method. I think this method is the most efficient method I could use today:



- Step 1: Multiply the ones (7x9 = 63)
- Step 2: Multiply the tens (7x20 = 140)
- Step 3: Add the totals together (140+63 = 203)

Click here and click on Learning Support videos. Scroll down the page until you reach the Column Multiplication video. This will help to remind you how to use this method.

Day 5 Resources

THINK: *If you have online parent access, this lesson is based on textbook 4A, chapter 4, lesson 9.*

The music teacher at New Town Primary School wants to buy new musical instruments to use in her music lessons. She decides to buy 5 violins. What is the total cost of 5 violins?

DO: **You will need to include a thousands place in your calculations.**

1. Find the total cost using the expanded method for multiplication.

a. 2 cellos
b. 3 clarinets
c. 4 drum kits
d. 5 keyboards
e. 6 guitars.

2. Solve using the expanded method for multiplication.

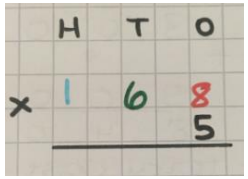
a. 246 x 3
b. 849 x 4
c. 687 x 9
d. 684 x 6
e. 263 x 8

Deepening:

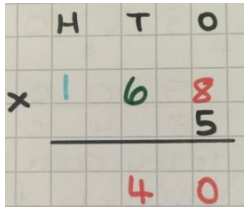
Teddy and his dad were having a reading competition. In one month, Teddy read 814 pages. His dad read four times as many pages as Teddy. How many pages did they read altogether? How many fewer pages did Teddy read? Show your thinking with a bar model and a formal written method.

SEE: **VIDEO HERE to remind yourself of the method we are using today.**

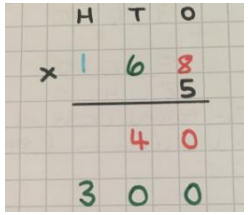
If I know that 1 violin costs £168, how can I work out the total cost of 5 violins?



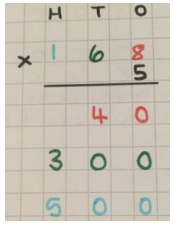
Step 1
Set up your calculation like this.
Remember to use the H, T and O headings to help you keep the digits in the correct place.



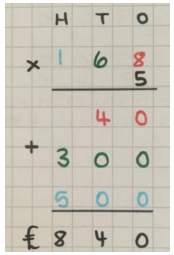
Step 2
Multiply the ones.
5 x 8 = 40
Place the 4 in the tens place so it shows 4 tens or 40 and place the 0 in the ones place because there are 0 ones.



Step 3
Multiply the tens.
5 x 6 tens (or 60) = 300
Place the 3 in the hundreds place to show that you now have 300. Remember to place the zeros in the tens and ones places as a place holder.



Step 4
Multiply the hundreds.
5 x 1 hundred (or 100) = 500
Place the 5 in the hundreds and don't forget your place holders.



Step 5
Add the products together to find the total cost of 5 violins.

ANSWERS:

DAY 1

a. $\frac{2}{4} = \frac{6}{12} = \frac{1}{2}$

b. $\frac{3}{4} = \frac{12}{16} = \frac{15}{20}$

c. $\frac{1}{6} = \frac{2}{12} = \frac{4}{24}$

d. $\frac{2}{6} = \frac{1}{3} = \frac{3}{9}$

e. $\frac{5}{6} = \frac{15}{18} = \frac{25}{30}$

f. $\frac{1}{7} = \frac{3}{21} = \frac{2}{14}$

g. $\frac{3}{7} = \frac{12}{28} = \frac{9}{21}$

h. $\frac{6}{7} = \frac{42}{49} = \frac{30}{35}$

Deepening:

Some of your fractions might include:

$\frac{2}{8} = \frac{1}{4} = \frac{4}{16} = \frac{8}{32} = \frac{10}{40} = \frac{12}{48}$

$\frac{14}{56} = \frac{16}{64} = \frac{18}{72}$

DAY 2

a. $\frac{2}{4} = \frac{1}{2}$

b. $\frac{35}{40} = \frac{7}{8}$

c. $\frac{3}{6} = \frac{1}{2}$

d. $\frac{18}{20} = \frac{9}{10}$

e. $\frac{4}{36} = \frac{1}{9}$

f. $\frac{12}{36} = \frac{1}{3}$

g. $\frac{5}{35} = \frac{1}{7}$

h. $\frac{3}{30} = \frac{1}{10}$

i. $\frac{44}{48} = \frac{11}{12}$

j. $\frac{25}{60} = \frac{5}{12}$

Deepening:

Green boxes: $1\frac{1}{4}$ and $2\frac{1}{2}$

First red arrow: $1\frac{5}{8}$ or $\frac{13}{8}$

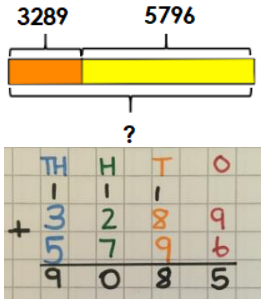
Second red arrows: $2\frac{6}{8}$ or $2\frac{3}{4}$ or $\frac{22}{8}$ or $\frac{11}{4}$

DAY 3

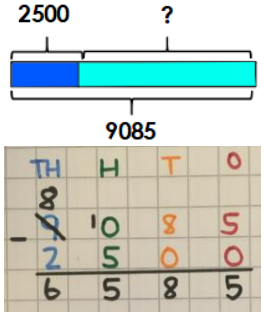
Question 1

a. 3221 b. 4430
c. 6044 d. 5212
e. 8211 f. 1289
g. 4088 h. 3544
i. 5573 j. 3285

Question 2



Question 3



Deepening:

6123 – 5987 and 5123 – 4987 both = 136.

DAY 4

a. 28 x 7 = 196
b. 59 x 6 = 354
c. 74 x 8 = 592
d. 92 x 5 = 460
e. 43 x 4 = 172
f. 87 x 7 = 609
g. 36 x 9 = 324
h. 47 x 8 = 376
i. 29 x 6 = 174
j. 74 x 3 = 222

Deepening:

1	6
2	3
3	2
6	1

1	28
2	14
4	7
7	4
14	2
28	1

DAY 5

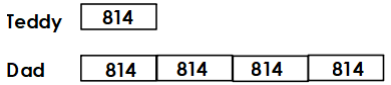
Question 1

a. 2 x £537 = £1074
b. 3 x £415 = £1245
c. 4 x £852 = £3408
d. 5 x £439 = £2195
e. 6 x £289 = £1734

Question 2

a. 246 x 3 = 738
b. 849 x 4 = 3396
c. 687 x 9 = 6183
d. 684 x 6 = 4104
e. 263 x 8 = 2104

Deepening:



814 x 5 = 4070

Teddy and Dad read 4070 pages altogether.

814 x 3 = 2442

Teddy read 2442 fewer pages than Dad.