

# Year 6 Maths

Week beginning 21<sup>st</sup> September 2020

# Lesson 1: Long Multiplication

- 10 minutes of Times Table Rocksters
- Knowing your tables is **ESSENTIAL** for almost all the maths we learn in Y6

# To be able to multiply up to a four-digit number by a two-digit number

## Success Criteria:

I can use a times tables grid;

I know my times tables up to 12 x 12;

I can set out my columns to ensure the correct digits are being multiplied;

I remember to use zero (0) as a place holder where appropriate.

## Talking time:

Complete the following using the column method.

Me:  
3,456 x 23 =

		3	4	5	6
	x			2	3
	1	0	1 3	1 6	1 8
+	6	9	1 1	1 2	0
	7	9	4	8	8

We:  
2,673 x 13 =

You:  
3,297 x 32 =

# To be able to multiply up to a four-digit number by a two-digit number

## Talking time:

Complete the following using the

Me:

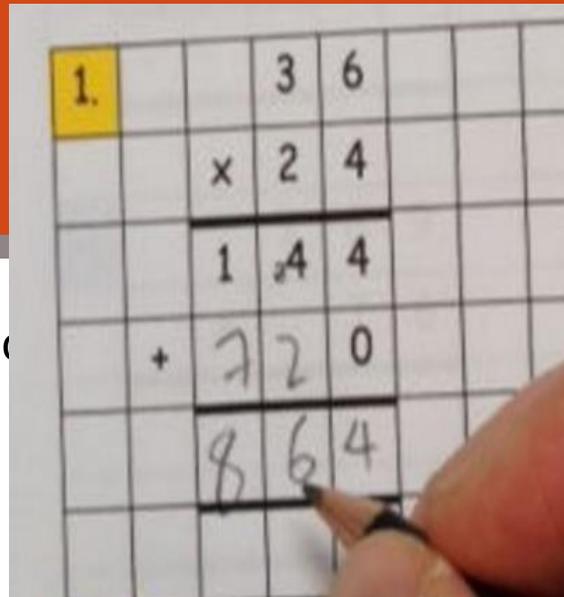
$$3,456 \times 23 = 79,488$$

We:

$$2,673 \times 13 = 34,749$$

You:

$$3,297 \times 32 = 105,504$$



### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

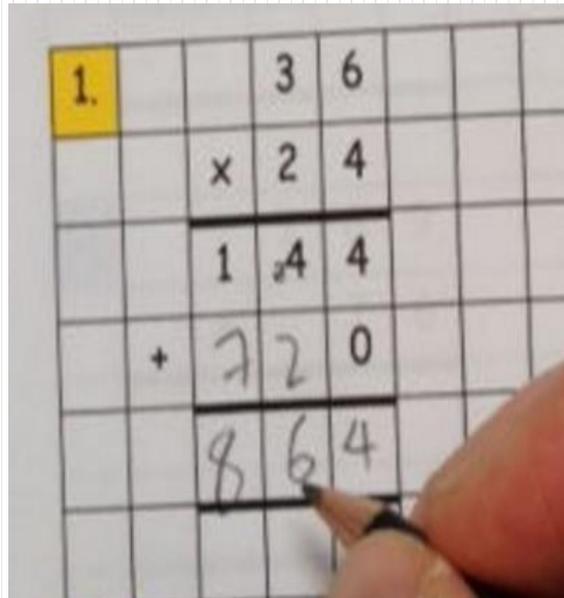
I can set out my columns to ensure the correct digits are being multiplied;

I remember to use zero (0) as a place holder where appropriate.

# To be able to multiply up to a four-digit number by a two-digit number

**Activity 1:** Complete the following using the column method.

- a)  $147 \times 9 =$
- b)  $254 \times 7 =$
- c)  $273 \times 11 =$
- d)  $374 \times 13 =$
- e)  $1,067 \times 8 =$
- f)  $2,635 \times 6 =$
- g)  $1,543 \times 11 =$
- h)  $2,374 \times 13 =$
- i)  $4,537 \times 27 =$



## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

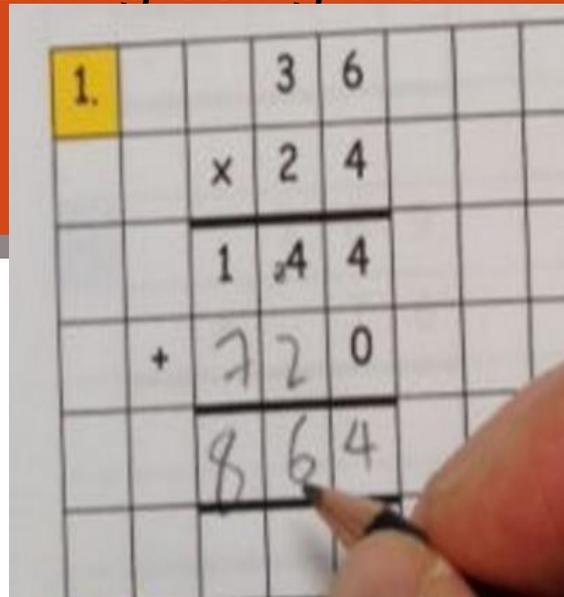
I can set out my columns to ensure the correct digits are being multiplied;

I remember to use zero (0) as a place holder where appropriate.

# To be able to multiply up to a four-digit number by a two-digit number

**Activity 1:** Complete the following using the column method.

- a)  $147 \times 9 = 1,323$
- b)  $254 \times 7 = 1,778$
- c)  $273 \times 11 = 3,003$
- d)  $374 \times 13 = 4,862$
- e)  $1,067 \times 8 = 8,536$
- f)  $2,635 \times 6 = 15,810$
- g)  $1,543 \times 11 = 16,973$
- h)  $2,374 \times 13 = 30,862$
- i)  $4,537 \times 27 = 122,499$



## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can set out my columns to ensure the correct digits are being multiplied;

I remember to use zero (0) as a place holder where appropriate.

# To be able to multiply up to a four-digit number by a two-digit number

## Activity 2: Complete the following using the column method.

- Mike makes 13 posts on Facebook, each post gets 1,023 likes. How many likes has Mike received in total?
- Teddy has uploaded 27 videos in the past month. Each video has received 2,547 views. How many views has Teddy had in total?
- Katie has uploaded 33 cover photos in total on her Facebook page. Each cover photo has been seen just once by her 4,563 friends.  
What is Katie's total number of cover photo views?
- Bob has posted 47 status updates in the past month. Each one has been liked 6,371 times. How many likes has Bob received?
- Joe has 59 photo albums on his Facebook page. Each photo album contains 9,732 photographs. How many photographs has Joe uploaded to Facebook in total?

### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can set out my columns to ensure the correct digits are being multiplied;

I remember to use zero (0) as a place holder where appropriate.

# To be able to multiply up to a four-digit number by a two-digit number

## Activity 2: Complete the following using the column method

- a) Mike makes 13 posts on Facebook, each post gets 1,023 likes. How many likes has Mike received in total? **13,299 likes**
- b) Teddy has uploaded 27 videos in the past month. Each video has received 2,547 views. How many views has Teddy had in total? **68,769 views**
- c) Katie has uploaded 33 cover photos in total on her Facebook page. Each cover photo has been seen just once by her 4,563 friends. What is Katie's total number of cover photo views? **150,579 photo views**
- d) Bob has posted 47 status updates in the past month. Each one has been liked 6,371 times. How many likes has Bob received? **299,437 likes**
- e) Joe has 59 photo albums on his Facebook page. Each photo album contains 9,732 photographs. How many photographs has Joe uploaded to Facebook in total? **574,188 photos**

### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can set out my columns to ensure the correct digits are being multiplied;

I remember to use zero (0) as a place holder where appropriate.

# To be able to multiply up to a four-digit number by a two-digit number

## Evaluation:

### True or False?

- a)  $6,321 \times 17$  is the same as  $17 \times 6,321$
- b)  $36 \times 5 = 35 \times 6$
- c) I can find the answer to  $3,300 \times 27$ , if I know the answer to  $3,300 \times 30$

*Answer. Prove. Explain.*

### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can set out my columns to ensure the correct digits are being multiplied;

I remember to use zero (0) as a place holder where appropriate.

# To be able to multiply up to a four-digit number by a two-digit number

## Evaluation:

### True or False?

- a)  $6,321 \times 17$  is the same as  $17 \times 6,321$

True, as multiplication is commutative, meaning it does not matter which side of the multiplication symbol each factor is on, the product will be the same.

- b)  $36 \times 5 = 35 \times 6$

False.  $36 \times 5 = 180$ ;  $35 \times 6 = 210$ .

- c) I can find the answer to  $3,300 \times 27$ , if I know the answer to  $3,300 \times 30$

True. If you multiply  $3,300$  by  $30$ , you can divide the product by  $10$  to get  $3,300 \times 3$  and subtract that from  $3,300 \times 30$  to arrive at the product for  $3,300 \times 27$ .

### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can set out my columns to ensure the correct digits are being multiplied;

I remember to use zero (0) as a place holder where appropriate.

# Lesson 2: Short Division

- 10 minutes of Times Table Rocksters
- Knowing your tables is **ESSENTIAL** for almost all the maths we learn in Y6

# To be able to complete short division calculations

## Vocabulary:

What do the following words mean? Look them up and write an explanation or label a division question with these words to show you know what they are.

divisor  
dividend  
quotient  
remainder

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I remember to divide the highest value digit first;

I know the largest possible remainder is one less than the divisor.

# To be able to complete short division calculations

## Vocabulary:

What do the following words mean?

divisor →  $6 \overline{) 200}$  → quotient

$- 180$  → dividend

$2$  → remainder

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I remember to divide the highest value digit first;

I know the largest possible remainder is one less than the divisor.

Can you think of a division calculation and tell your partner which word refers to each part of your division calculation?

# To be able to complete short division calculations

Talking time:

Using the bus stop method and leaving a simple remainder, complete the following:

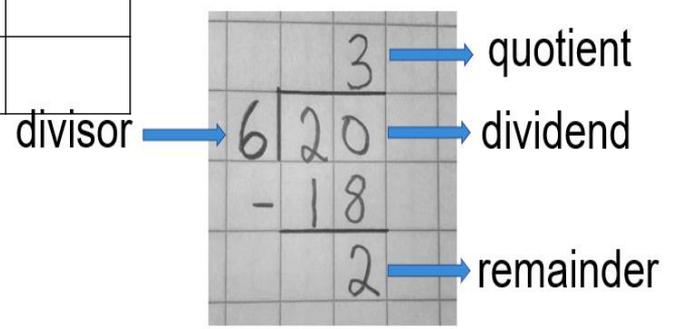
Me:  $263 \div 4 =$

You:  $325 \div 3 =$

		6	4	r3
4	2	6	3	
-	2	4	↓	
		2	3	
	-	2	0	
			3	

**Success Criteria:**

- I can use a times tables grid;
- I know my times tables up to 12 x 12;
- I remember to divide the highest value digit first;
- I know the largest possible remainder



# To be able to complete short division calculations

## Activity 1:

Using the bus stop method and leaving a simple remainder, complete the following:

a)  $147 \div 2 =$

b)  $254 \div 3 =$

c)  $273 \div 5 =$

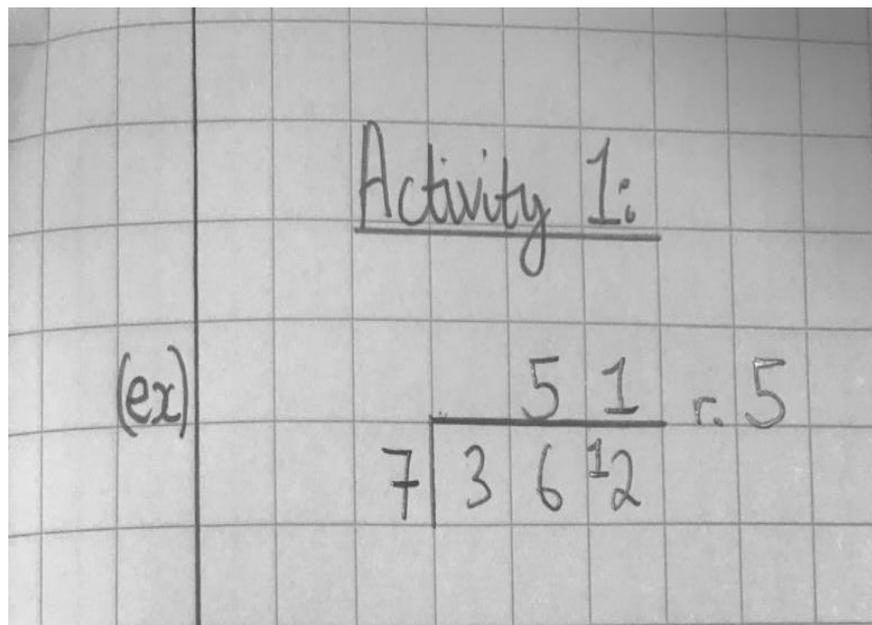
d)  $374 \div 10 =$

e)  $1,067 \div 4 =$

f)  $2,635 \div 6 =$

g)  $1,543 \div 9 =$

h)  $2,374 \div 7 =$



## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I remember to divide the highest value digit first;

I know the largest possible remainder is one less than the divisor.

# To be able to complete short division calculations

## Activity 1:

Using the bus stop method and leaving a simple remainder, complete the following:

a)  $147 \div 2 = 73 \text{ r.1}$

b)  $254 \div 3 = 84 \text{ r.2}$

c)  $273 \div 5 = 54 \text{ r.3}$

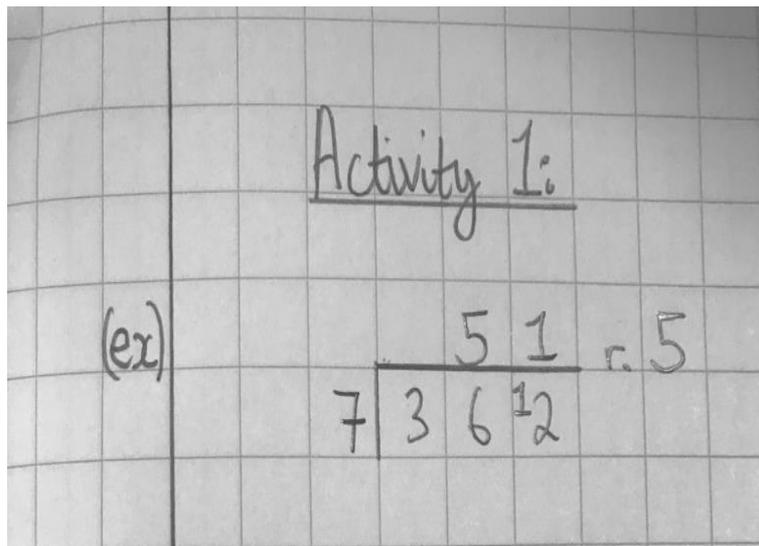
d)  $374 \div 10 = 37 \text{ r.4}$

e)  $1,067 \div 4 = 266 \text{ r.3}$

f)  $2,635 \div 6 = 439 \text{ r.1}$

g)  $1,543 \div 9 = 171 \text{ r.4}$

h)  $2,374 \div 7 = 339 \text{ r.1}$



## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I remember to divide the highest value digit first;

I know the largest possible remainder is one less than the divisor.

# To be able to complete short division calculations

## Activity 2:

- a) John has been working for Coca-Cola. They've given him £275 a day to spend on Facebook ads, split equally between three brands: Fanta, Coke and Sprite. How much does he spend on each brand?
- b) Teddy has 327 photos and wants to share them equally amongst four Facebook photo albums. How many photos are in each album?
- c) Sarah has 493 Bitcoin. She wishes to share them evenly amongst five friends. How many Bitcoin does each friend receive?
- d) Sarah still has another 674 Bitcoin and wishes to split them fairly between seven cousins. How many Bitcoin does each cousin get?
- e) Tomas has 693 Facebook ad credits and wishes to split them fairly amongst his eleven favourite clients. How many ad credits does each client receive?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I remember to divide the highest value digit first;

I know the largest possible remainder is one less than the divisor.

# To be able to complete short division calculations

## Activity 2:

- a) John has been working for Coca-Cola. They've given him £275 a day to spend on Facebook ads, split equally between three brands: Fanta, Coke and Sprite. How much does he spend on each brand? **£91 each, r. £2**
- b) Teddy has 327 photos and wants to share them equally amongst four Facebook photo albums. How many photos are in each album? **81 photos, r.3**
- c) Sarah has 493 Bitcoin. She wishes to share them evenly amongst five friends. How many Bitcoin does each friend receive? **98 Bitcoin, r.3**
- d) Sarah still has another 674 Bitcoin and wishes to split them fairly between seven cousins. How many Bitcoin does each cousin get? **96 Bitcoin, r.2**
- e) Tomas has 693 Facebook ad credits and wishes to split them fairly amongst his eleven favourite clients. How many ad credits does each client receive? **63 ad credits each**

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I remember to divide the highest value digit first;

I know the largest possible remainder is one less than the divisor.

# To be able to complete short division calculations

## Evaluation:

Tyrone tried to share as many of his 347 Bitcoin as he could equally amongst 3 friends.

Each friend received 114 Bitcoin.  
Tyrone had 5 Bitcoin leftover as a remainder.

Where has Tyrone gone wrong?

*Answer. Prove. Explain.*



## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I remember to divide the highest value digit first;

I know the largest possible remainder is one less than the divisor.

# To be able to complete short division calculations

## Evaluation:

Tyrone tried to share as many of his 347 Bitcoin as he could equally amongst 3 friends.

Each friend received 114 Bitcoin.  
Tyrone had 5 Bitcoin leftover as a remainder.

Where has Tyrone gone wrong?

**Tyrone is wrong, because the largest possible remainder is one less than the divisor.**

**He has shared amongst three friends, so his divisor would be 3. So, the largest possible remainder is 2. Therefore, each friend should have received 115 Bitcoin, with 2 Bitcoin being Tyrone's final remainder.**



## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I remember to divide the highest value digit first;

I know the largest possible remainder is one less than the divisor.

# Lesson 3:

## Division Calculations using Known Factors

- 10 minutes of Times Table Rocksters
- Knowing your tables is **ESSENTIAL** for almost all the maths we learn in Y6

# To be able to solve division calculations using known factors

## Starter:

What is a factor?

Write a definition into your exercise book.

(Think about the number 12, if that helps!)

**A factor of a whole number is a smaller whole number which can be multiplied with another whole number to produce the original whole number.**

**For example, 12 has the factors 1, 2, 3, 4, 6, and 12, because  $1 \times 12 = 12$ ,  $2 \times 6 = 12$ , and  $3 \times 4 = 12$**

### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$8 \times \_ = 8$$

## Success Criteria:

I can use a times tables grid;

I know my times tables up to 12 x 12;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$8 \times 1 = 8$$

Can you think of other factor pairs with 8 as the multiple?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$8 \times 1 = 8$$

Can you think of other factor pairs with 8 as the multiple?

$$2 \times 4 = 8$$

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$5 \times \_ = 10$$

Can you think of other factor pairs?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$5 \times 2 = 10$$

Can you think of other factor pairs?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$5 \times 2 = 10$$

Can you think of other factor pairs?

$$1 \times 10 = 10$$

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$\_ \times 2 = 16$$

Can you think of other factor pairs?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$8 \times 2 = 16$$

Can you think of other factor pairs?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$8 \times 2 = 16$$

Can you think of other factor pairs?

$$1 \times 16 = 16$$

$$4 \times 4 = 16$$

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$\_ \times 10 = 40$$

Can you think of other factor pairs?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$4 \times 10 = 40$$

Can you think of other factor pairs?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Factor Finder!

$$4 \times 10 = 40$$

Can you think of other factor pairs?

$$2 \times 20 = 40$$

$$5 \times 8 = 40$$

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

Talking time :

Complete the following using the known factor method.

Me:  $728 \div 14 =$

You:  $325 \div 25 =$

I will use 2 and 7

$$728 \div 7 = 104$$

$$364 \div 2 = 52$$

I did this mentally, but you can use the 'bus stop' to check you are right.

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

## Activity 1:

Complete the following using the known factor method.

a)  $620 \div 20 =$

b)  $425 \div 25 =$

c)  $1,022 \div 14 =$

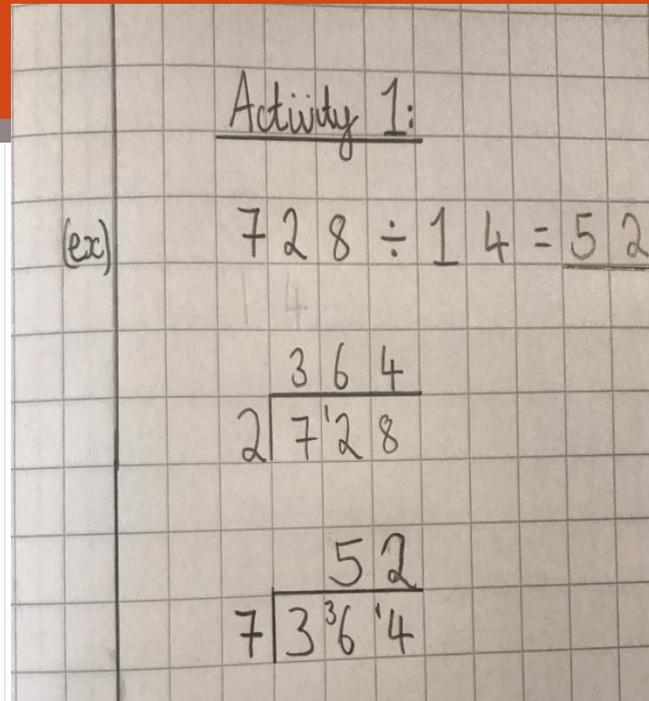
d)  $990 \div 45 =$

e)  $399 \div 21 =$

f)  $3,402 \div 63 =$

g)  $2,632 \div 56 =$

h)  $2,244 \div 132 =$



### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

## Activity 1:

Complete the following using the known factor method.

a)  $620 \div 20 = 31$

b)  $425 \div 25 = 17$

c)  $1,022 \div 14 = 73$

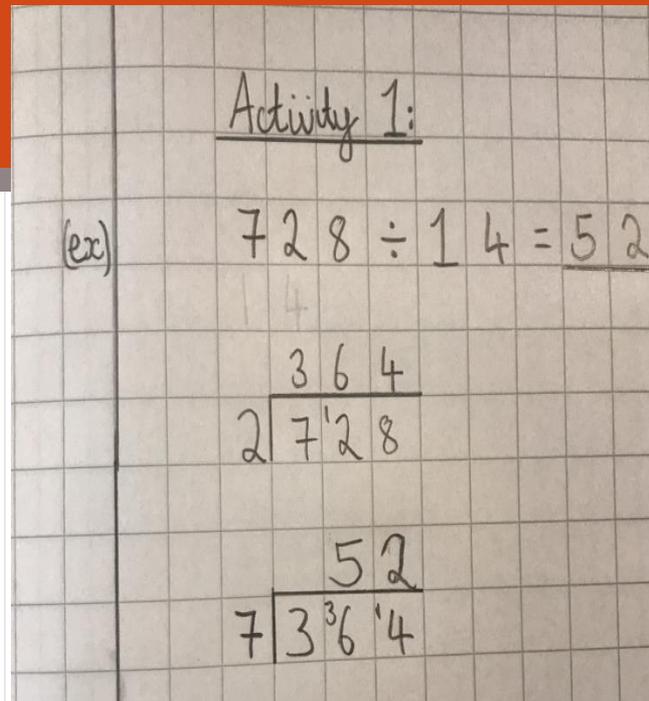
d)  $990 \div 45 = 22$

e)  $399 \div 21 = 19$

f)  $3,402 \div 63 = 54$

g)  $2,632 \div 56 = 47$

h)  $2,244 \div 132 = 17$



### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

## Activity 2:

Complete the following using the known factor method.

- a) Caleb has received 1,008 Bitcoin in the last month. He wishes to share them evenly amongst 18 Bitcoin wallets. How much goes in each wallet?
- b) Clarissa managed to mine 1,683 Bitcoin in three months. She wishes to place them in equally within her 99 wallets. How many Bitcoin will be in each of her wallets?
- c) Jasmine has 4,788 Bitcoin. She wishes to share them fairly amongst 84 relatives. How many Bitcoin does each relative receive?
- d) India has earned 4,851 Bitcoin from her previous 77 programming gigs. What is Jasmine's mean contract value per gig?
- e) Rebekah has stolen 5,628 Bitcoin. She wishes to hide them evenly amongst 84 wallets. How many Bitcoin does she stash in each wallet?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

## Activity 2:

Complete the following using the known factor method.

- a) Caleb has received 1,008 Bitcoin in the last month. He wishes to share them evenly amongst 18 Bitcoin wallets. How much goes in each wallet? **56 coins**
- b) Clarissa managed to mine 1,683 Bitcoin in three months. She wishes to place them in equally within her 99 wallets. How many Bitcoin will be in each of her wallets? **17 coins**
- c) Jasmine has 4,788 Bitcoin. She wishes to share them fairly amongst 84 relatives. How many Bitcoin does each relative receive? **57 coins**
- d) India has earned 4,851 Bitcoin from her previous 77 programming gigs. What is Jasmine's mean contract value per gig? **63 coins**
- e) Rebekah has stolen 5,628 Bitcoin. She wishes to hide them evenly amongst 84 wallets. How many Bitcoin does she stash in each wallet? **67 coins**

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# To be able to solve division calculations using known factors

## Evaluation:

### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

Patrick tries to share 315 Bitcoin fairly amongst 15 friends.

He decides to divide the Bitcoin total first by 5, then dividing his first quotient by 10.

He can't seem to share them equally without a remainder.

What went wrong?

*Answer. Prove. Explain.*

# To be able to solve division calculations using known factors

## Evaluation:

Patrick tries to share 315 Bitcoin fairly amongst 15 friends.  
He decides to divide the Bitcoin total first by 5, then dividing his first quotient by 10.  
He can't seem to share them equally without a remainder.  
What went wrong?

*Answer. Prove. Explain.*

He has partitioned 15 into 5 and 10, rather than finding a factor pair, which would be 3 and 5. Ultimately, if he divided 315 by 5, he would get 63, then he should have divided 63 by 3, giving each of his 15 friends 21 coins each.

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to find factors;

I remember to divide my first quotient by the second factor.

# Lesson 4: Long Division

- 10 minutes of Times Table Rocksters
- Knowing your tables is **ESSENTIAL** for almost all the maths we learn in Y6

# To be able to solve division calculations using skeleton tables

Talking time:

Can you remember what a **prime number** is?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to identify prime numbers;

I can create my own skeleton table.

# To be able to solve division calculations using skeleton tables

## Talking time:

Can anyone remember what a prime number is?

In mathematics, a **prime number** is a whole number greater than 1 that cannot be divided exactly by any whole number except itself and the number 1, for example 17.

Why might the people who created Transformers have called their most powerful Transformer 'Optimus Prime'?

## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to identify prime numbers;

I can create my own skeleton table.



# To be able to solve division calculations using skeleton tables

Talking time:

Can anyone remember what a prime number is?

In mathematics, a **prime number** is a whole number greater than 1 that cannot be divided exactly by any whole number except itself and the number 1, for example 17.

Why might the people who created Transformers have called their most powerful Transformer 'Optimus Prime'?

Optimus is the Latin word for the best and prime means indivisible (undividable) and something at its strongest.

## Success Criteria:

I can use a times tables grid;

I know my times tables up to 12 x 12;

I can use my times tables knowledge to identify prime numbers;

I can create my own skeleton table.



# To be able to solve division calculations using skeleton tables

## Activity 1:

What strategies could we use to locate all the prime numbers between 1 and 100 as quickly as possible?

You might want to print this out and use your tables knowledge.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

### Success Criteria:

I can use a times tables grid;

I know my times tables up to 12 x 12;

I can use my times tables knowledge to identify prime numbers;

I can create my own skeleton table.

# To be able to solve division calculations using skeleton tables

## Activity 1:

What strategies could we use to locate all the prime numbers between 1 and 100 as quickly as possible?  
 Cross out multiples of 2, 3, 4, 5, 6, 7, 8, 9 & 10 then you are left with the prime numbers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

**Success Criteria:**

- I can use a times tables grid;
- I know my times tables up to 12 x 12;
- I can use my times tables knowledge to identify prime numbers;
- I can create my own skeleton table.

# To be able to solve division calculations using skeleton tables

**Talking time:**

Complete the following using the skeleton table method.

Me:  $1449 \div 23 =$

	0	0	6	3				1 -	23
23	1	4	4	9				2 -	46
-	1	3	8	↓				3 -	69
	0	0	6	9				4 -	92
		-	6	9				5 -	115
				0				6 -	138
								7 -	161

**Success Criteria:**

- I can use a times tables grid;
- I know my times tables up to 12 x 12;
- I can use my times tables knowledge to identify prime numbers;
- I can create my own skeleton table.

# To be able to solve division calculations using skeleton tables

Activity 1:

Complete the following using the skeleton table method.

a)  $253 \div 11 =$

b)  $594 \div 11 =$

c)  $871 \div 13 =$

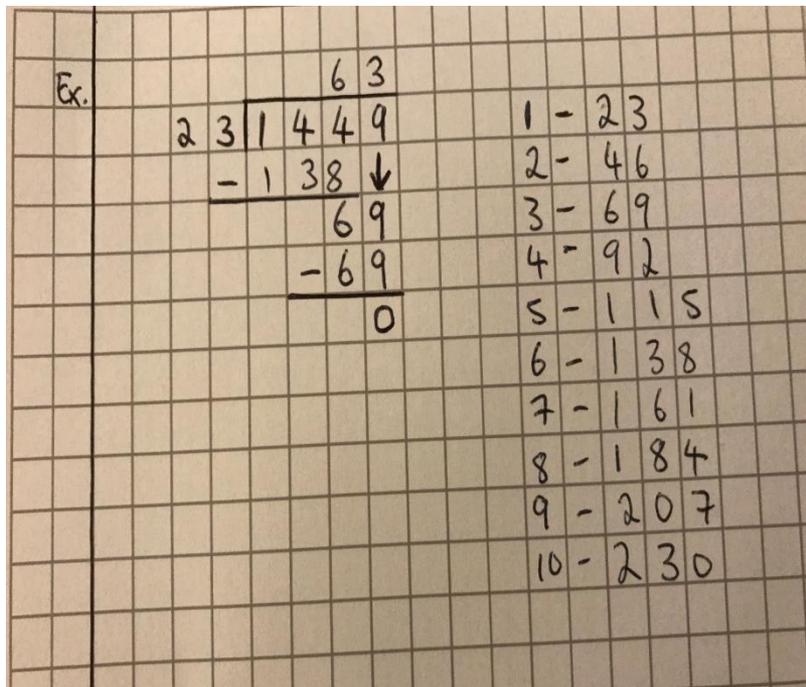
d)  $2,457 \div 13 =$

e)  $833 \div 17 =$

f)  $1,064 \div 19 =$

g)  $1,449 \div 23 =$

h)  $2,523 \div 29 =$



## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to identify prime numbers;

I can create my own skeleton table.

# To be able to solve division calculations using skeleton tables

Activity 1:

Complete the following using the skeleton table method.

a)  $253 \div 11 = 23$

b)  $594 \div 11 = 54$

c)  $871 \div 13 = 67$

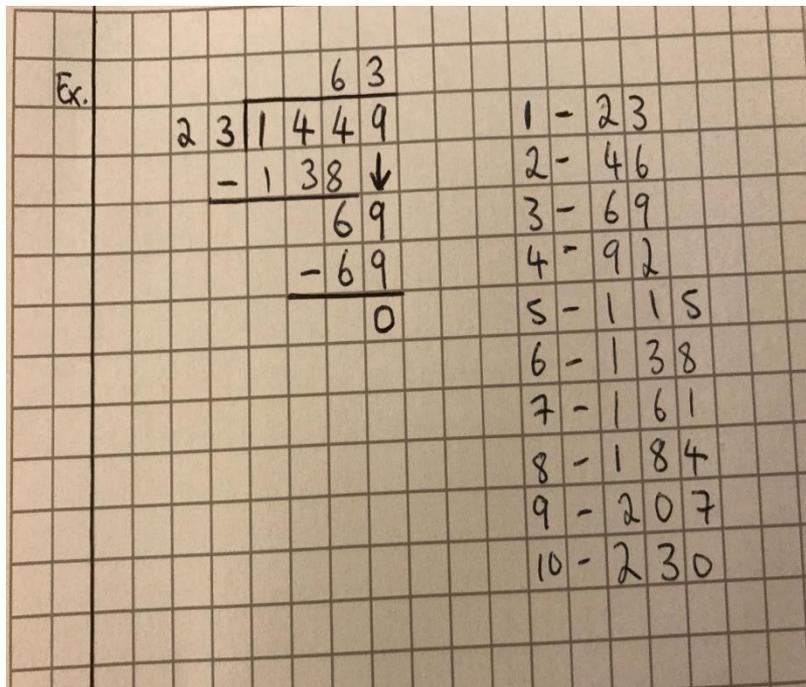
d)  $2,457 \div 13 = 189$

e)  $833 \div 17 = 49$

f)  $1,064 \div 19 = 56$

g)  $1,449 \div 23 = 63$

h)  $2,523 \div 29 = 87$



## Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to identify prime numbers;

I can create my own skeleton table.

# To be able to solve division calculations using skeleton tables

## Activity 2:

Complete the following using the skeleton table method.

- Eli has uploaded 13 new videos in the last month. In total he has received 1,131 video views. What is the mean view count for each of the past month's videos?
- Lily has uploaded 17 videos over the past year. Her total subscriber count has gone up by 1,921 since last year. On average, how many subscribers has each video attracted?
- Olivia has uploaded 29 vlogs. She has received 1,305 video likes in total. What's the mean average of likes per vlog?
- Jamal has earned 2,077 Bitcoin in ad revenue from his previous 31 vlogs. What is Jamal's mean ad revenue earnings per vlog?
- Eunice has 2,714 Bitcoin to promote her latest product. She wishes to split her Bitcoin equally amongst 59 YouTube influencers. How many Bitcoin will each influencer receive?

### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to identify prime numbers;

I can create my own skeleton table.

# To be able to solve division calculations using skeleton tables

## Activity 2:

Complete the following using the skeleton table method.

- Eli has uploaded 13 new videos in the last month. In total he has received 1,131 video views. What is the mean view count for each of the past month's videos? **87 views per video**
- Lily has uploaded 17 videos over the past year. Her total subscriber count has gone up by 1,921 since last year. On average, how many subscribers has each video attracted? **113 subscribers per video**
- Olivia has uploaded 29 vlogs. She has received 1,305 video likes in total. What's the mean average of likes per vlog? **45 likes per vlog**
- Jamal has earned 2,077 Bitcoin in ad revenue from his previous 31 vlogs. What is Jamal's mean ad revenue earnings per vlog? **67 coins**
- Eunice has 2,714 Bitcoin to promote her latest product. She wishes to split her Bitcoin equally amongst 59 YouTube influencers. How many Bitcoin will each influencer receive? **46 coins per influencer**

### Success Criteria:

I can use a times tables grid;

I know my times tables up to  $12 \times 12$ ;

I can use my times tables knowledge to identify prime numbers;

I can create my own skeleton table.

# To be able to solve division calculations using skeleton tables

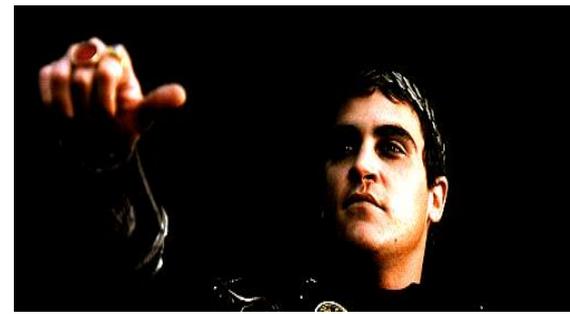
## Evaluation:

Using the table below, if:

MM = 2,000

MCXI = 1,111

MCMLVIII = 1,958



A gladiator has won MCCCXI denarii (Roman coins) from XXIII competitions.

Find the average amount of denarii the gladiator earns per win.

Express in Roman numerals and as a number.

**Success Criteria:**

- I can use a times tables grid;
- I know my times tables up to 12 x 12;
- I can use my times tables knowledge to identify prime numbers;
- I can create my own skeleton table.

	1	2	3	4	5	6	7	8	9
Ones	I	II	III	IV	V	VI	VII	VIII	IX
Tens	X	XX	XXX	XL	L	LX	LXX	LXXX	XC
Hundreds	C	CC	CCC	CD	D	DC	DCC	DCCC	MC
Thousands	M	MM	MMM	IV	V	VI	VII	VIII	IX

# To be able to solve division calculations using skeleton tables

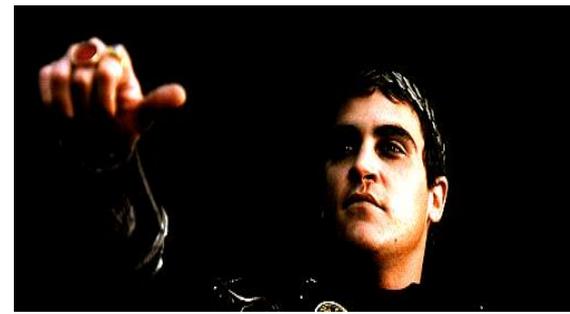
## Evaluation:

Using the table below, if:

MM = 2,000

MCXI = 1,111

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A gladiator has won MCCCXI denarii (Roman coins) from XXIII competitions.

Find the average amount of denarii the gladiator earns per win.

Express in Roman numerals and as a number.

**Answer: LVII or 57**

**Success Criteria:**

- I can use a times tables grid;
- I know my times tables up to 12 x 12;
- I can use my times tables knowledge to identify prime numbers;
- I can create my own skeleton table.

	1	2	3	4	5	6	7	8	9
Ones	I	II	III	IV	V	VI	VII	VIII	IX
Tens	X	XX	XXX	XL	L	LX	LXX	LXXX	XC
Hundreds	C	CC	CCC	CD	D	DC	DCC	DCCC	MC
Thousands	M	MM	MMM	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u>	<u>VIII</u>	<u>IX</u>

# Lesson 5:

## Problem Solving and Reasoning

- 10 minutes of Times Table Rocksters

### **PROBLEM:**

Year 6 are calculating  $7,848 \div 24$

The children decide which factor pairs to use. Here are some of their suggestions:

2 and 12   1 and 24                  4 and 6   10 and 14

Which will not give them the correct answer? Why?

Use the correct factor pairs to calculate the answer.

Is the answer the same each time?

Which factor pair would be the least efficient to use? Why?

### REMEMBER TO **PEE** ON YOUR WORK

P = Point (the answer to the question)

E = Evidence (show your working out)

E = explain how you know you are right in a sentence or two.