
# Maths

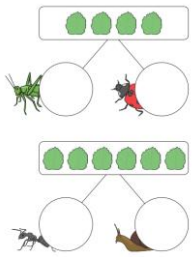
## Calculation Policy

## *Division*

2024

**EYFS:**

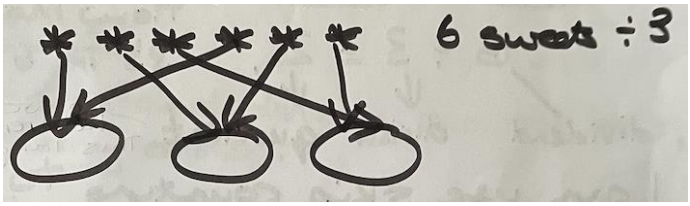
I can show how quantities can be distributed equally



**Year One:**

- I can divide by sharing objects equally

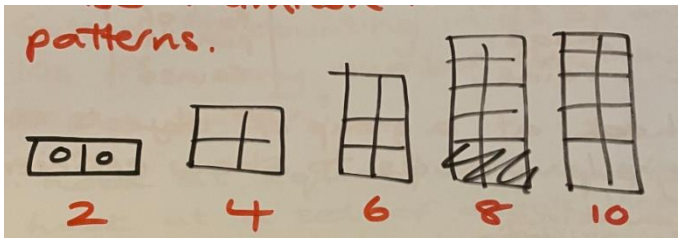
***Look at dividing being the repeated subtraction of 1 (sorting into groups)***



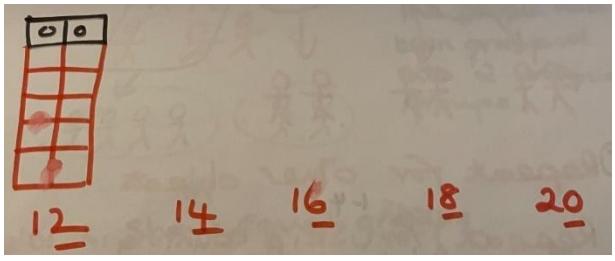

***Discuss equal groups (linking back to multiplication)***

- I can skip count in 2s

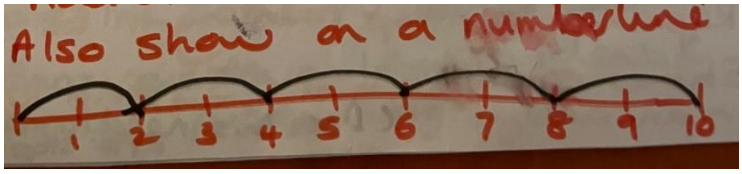
*Use Numicon to look at patterns.*



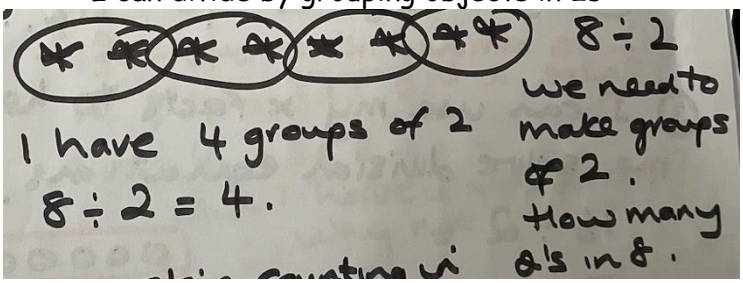

*Show by adding the ten tile, the pattern continues.*




- I can skip count in 2s on a numberline




- I can divide by grouping objects in 2s




***Link to skip counting from multiplication***

- I can skip count in 10s

***See previous methods***

- I can skip count in 10s on a number line

***See previous methods***

- I can divide by grouping objects in 10s

***Use previous method***

- I can skip count in 5s

***See previous methods***

- I can skip count in 5s on a number line

***See previous methods***

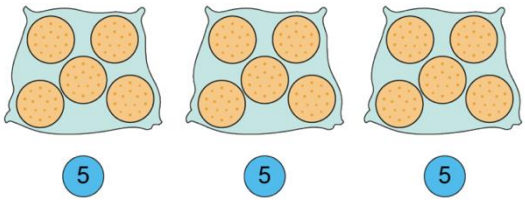
- I can divide by grouping objects in 5s

***Use previous method***

**Year Two:**

- I understand what an equal group is
- I understand what an unequal group is
- I can divide by sharing objects equally
- I know divide by grouping the total into equal groups

1. Objects (counters etc)




gure 14: 3 bags of 5 biscuits alongside three 5-value counters

**Language focus**

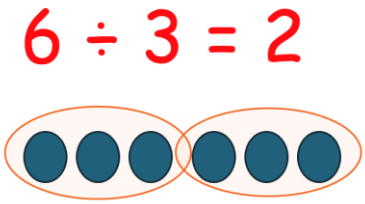
"The 15 represents the total number of biscuits."

"The 5 represents the number of biscuits in each bag."

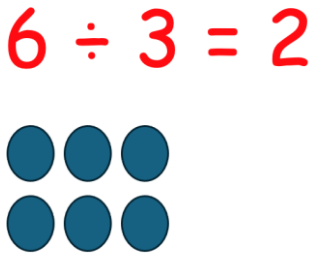
"The 3 represents the number of bags."

"15 divided into groups of 5 is equal to 3."

2. Images

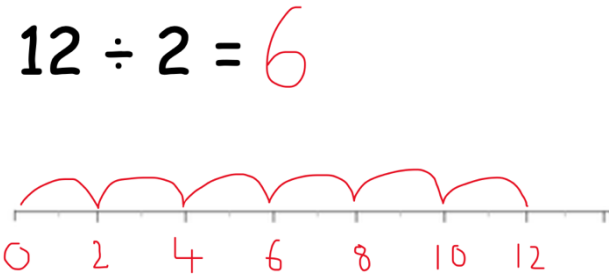



3. Arrays




I can use skip counting when dividing

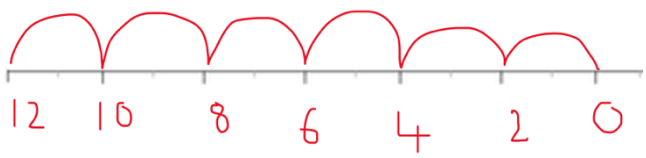
1. Number line (Forwards)




*12 is divided into groups of 2. There are 6 equal groups.*

2. Number line (Backwards)

$12 \div 2 = 6$



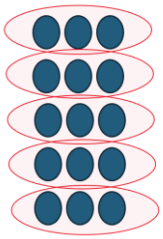

- I can recall multiplication facts for 2, 5 and 10
- I can use multiplication facts to solve division questions

1. Objects

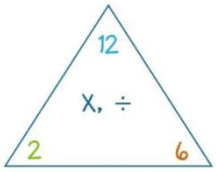
2. Arrays

$3 \times 5 = 15$

$15 \div 3 = 5$



3. Fact families




$2 \times 6 = 12$
$6 \times 2 = 12$
$12 \div 2 = 6$
$12 \div 6 = 2$

4. Creating links

$16 \div 2 =$

I know 8 x 2 = 16
So, I know 16 ÷ 2 = 8

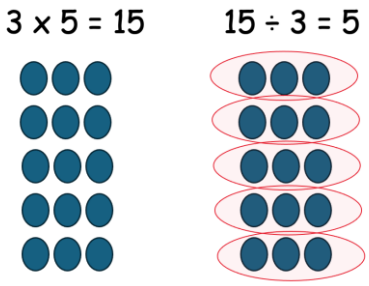
**Year Three:**

- I can use multiplication facts to solve division questions (2, 5 and 10)

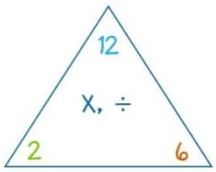
- I can recall division facts for 3, 6, 4 and 8
- I can use multiplication facts to solve division questions (3, 6, 4 and 8)

1. Objects

2. Arrays




3. Fact families

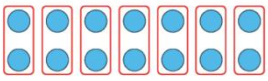
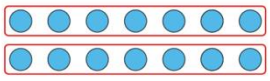
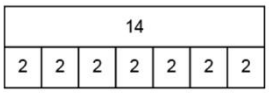
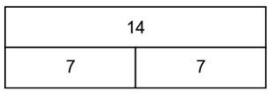



2 X 6 = 12
6 X 2 = 12
12 ÷ 2 = 6
12 ÷ 2 = 6

4. Creating links

16 ÷ 2 =

I know 8 x 2 = 16
So, I know 16 ÷ 2 = 8

| Quotitive division | Partitive division |
|---|---|
| I need 14 ping-pong balls. There are 2 ping-pong balls in a pack. How many packs do I need? | £14 is shared between 2 children. How much money does each child get? |
|  |  |
| 14 ÷ 2 = 7 | 14 ÷ 2 = 7 |
|   |   |
| **Figure 27: using an array and bar model to show that 14 divided into groups of 2 is equal to 7** | **Figure 28: using an array and bar model to show that 14 shared between 2 is equal to 7** |
| **Language focus**<br>"7 times 2 is 14, so 14 divided by 2 is 7."<br>"14 divided into groups of 2 is equal to 7." | **Language focus**<br>"7 times 2 is 14, so 14 divided by 2 is 7."<br>"£14 shared between 2 is equal to £7 each." |
| I need 7 packs of ping-pong balls. | Each child gets £7. |

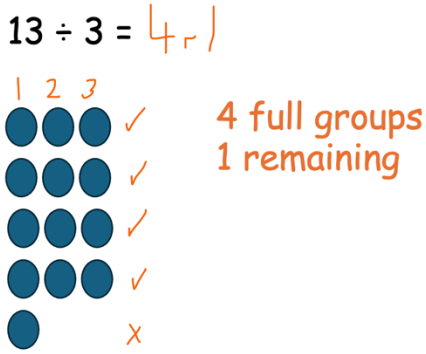
- I know division is the inverse of multiplication
- I can understand that division cannot be done in any order
- I can apply known facts to scaled problems

1. ***6 ÷ 3 = 2***
   ***60 ÷ 3 = 20***

2. ***Missing box questions***
   ***____ x 10 = 30*** ***30 ÷ 10 = _____***

- I understand what an equal group is
- I understand what an unequal group is
- I know that a remainder is more than a multiple of what you are dividing by

1. Arrays




2. Patterns

***Look at patterns:***

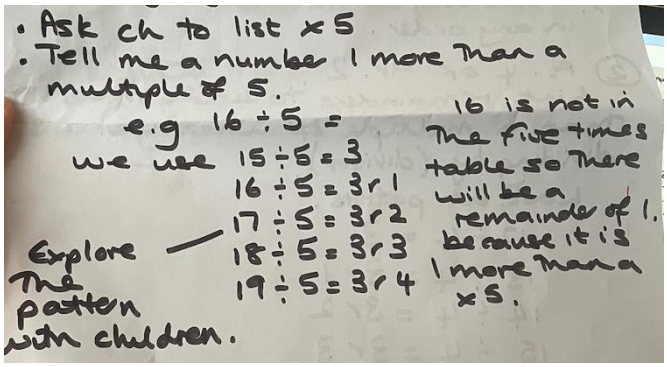
***12 ÷ 4 = 3***

***13 ÷ 4 = 3 r 1***

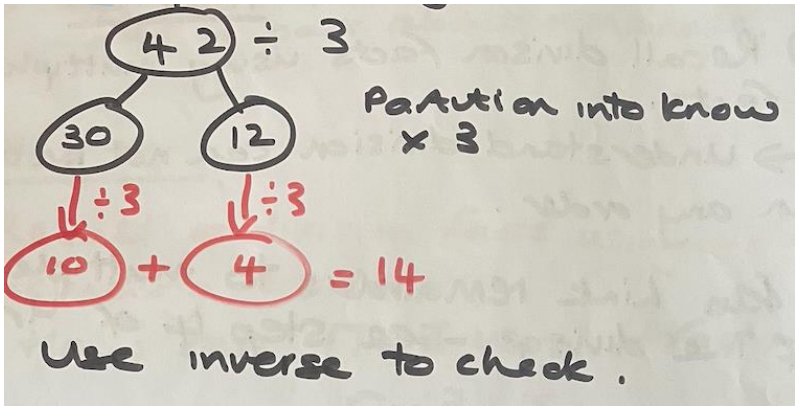
***14 ÷ 4 = 3 r 2***

***15 ÷ 4 = 3 r 3***

***Can I have a remainder of 4? Why not?***

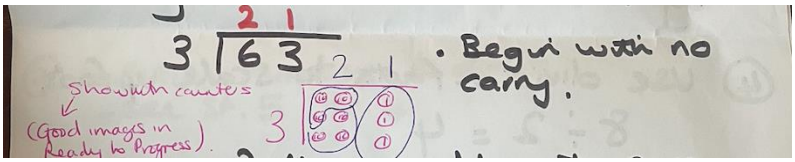


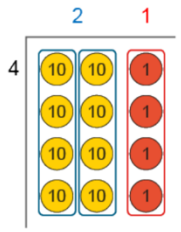
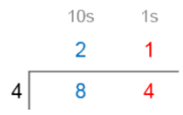

- I can link halving to dividing by 2
- I can use partitioning to aid division




I can divide a 2 digit number by a 1 digit number without carrying

| | |
|---|---|
| 84 ÷ 4 = 21 | $4\overline{)84}$ → 21 |
| dividend ÷ divisor = quotient | $\text{divisor}\overline{)\text{dividend}}$ → quotient |




| Short division with place-value counters | Short division |
|---|---|
|   8 tens ÷ 4 = 2 tens<br>4 ones ÷ 4 = 1 one |   |
| **Figure 29: dividing 84 by 4 using short division with place-value counters** | **Figure 30: dividing 84 by 4 using short division with place-value headings** |

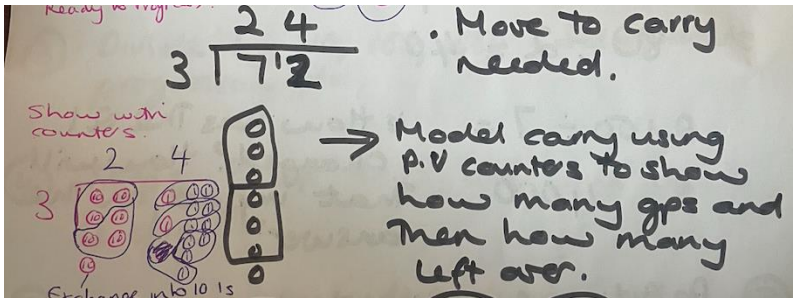
**Language focus**

"8 tens divided by 4 is equal to 2 tens: write 2 in the tens column."

"4 ones divided by 4 is equal to 1 one: write 1 in the ones column."

https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/ - good resources and teaching tools on here

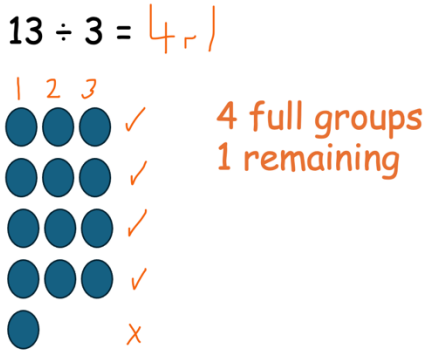
I can divide a 2 digit number by a 1 digit number with carrying




**Year Four:**

- I can use multiplication facts to solve division questions (3, 6, 4 and 8)
- I can use multiplication facts to solve division questions (7, 9, 11 and 12)
- I know division is the inverse of multiplication
- I can understand that division cannot be done in any order
- I know that a remainder is more than a multiple of what you are dividing by

1. Arrays




2. Patterns

***Look at patterns:***

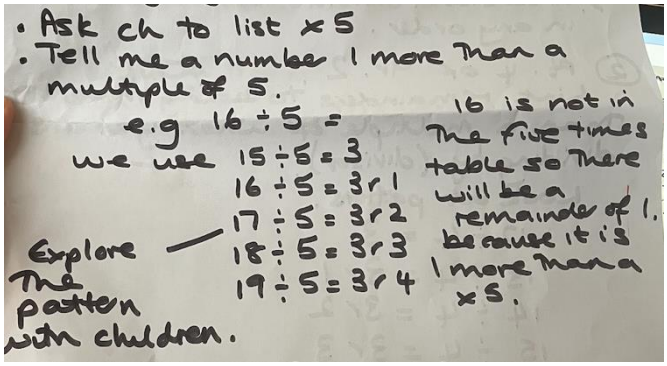
***12 ÷ 4 = 3***

***13 ÷ 4 = 3 r 1***

***14 ÷ 4 = 3 r 2***

***15 ÷ 4 = 3 r 3***

***Can I have a remainder of 4? Why not?***

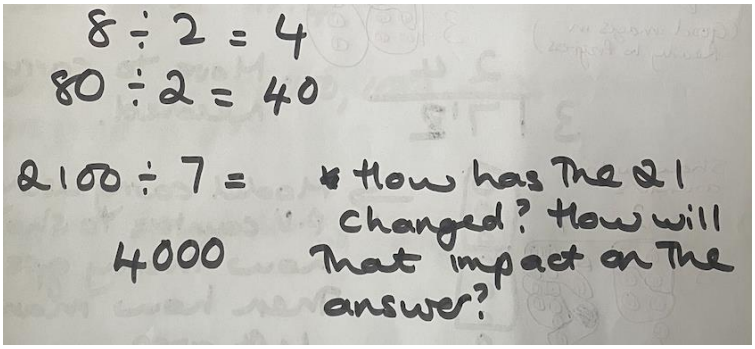


- I can link remainders to multiples of the divisor
- I can understand the effect of dividing by 0 and 1
- I can apply known facts to scaled problems

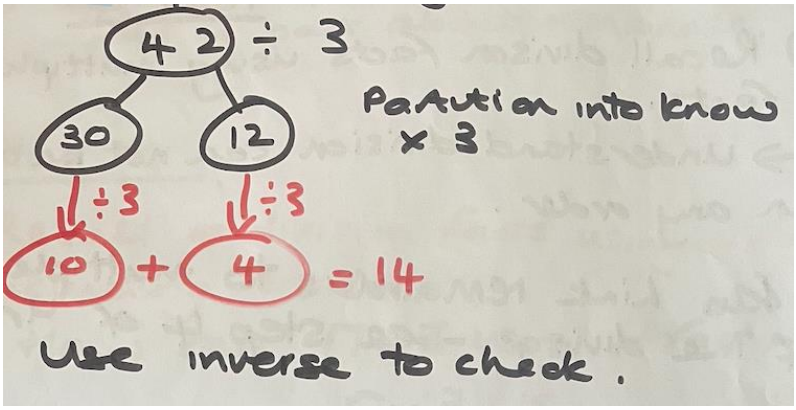
3. *6 ÷ 3 = 2*
   *60 ÷ 3 = 20*

4. *Missing box questions*
   *____ x 10 = 30*  *30 ÷ 10 = _____*

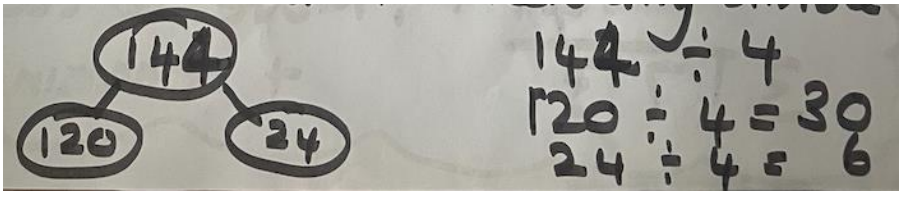
- I can use division facts to scale up facts




- I can use partitioning to aid division

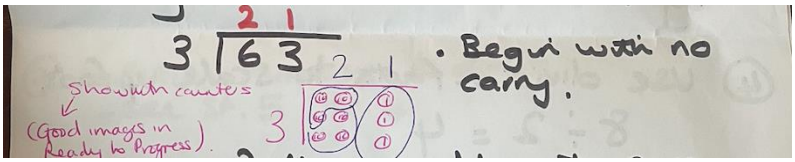



- I can partition numbers into known multiples of the divisor



I can divide a 2 digit number by a 1 digit number without carrying

| | |
|---|---|
| 84 ÷ 4 = 21 | $4\overline{)84}$ → 2 1 |
| dividend ÷ divisor = quotient | $\text{divisor}\overline{)\text{dividend}}$ → quotient |




| Short division with place-value counters | Short division |
|---|---|
| 2 1<br>4 \| 10 10 1<br>10 10 1<br>10 10 1<br>10 10 1<br>8 tens ÷ 4 = 2 tens<br>4 ones ÷ 4 = 1 one | 10s 1s<br>2 1<br>4 \| 8 4 |
| Figure 29: dividing 84 by 4 using short division with place-value counters | Figure 30: dividing 84 by 4 using short division with place-value headings |

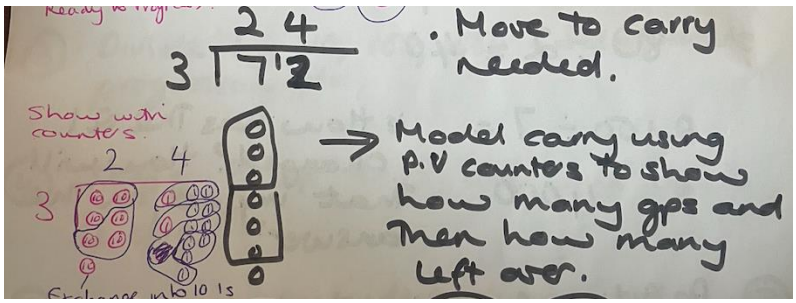
**Language focus**

"8 tens divided by 4 is equal to 2 tens: write 2 in the tens column."

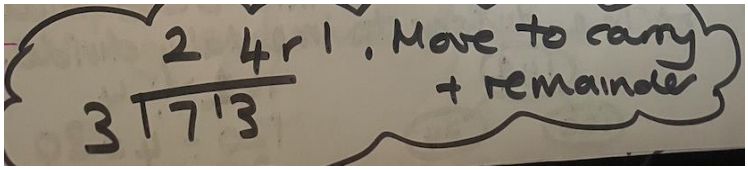
"4 ones divided by 4 is equal to 1 one: write 1 in the ones column."

https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/ - good resources and teaching tools on here

I can divide a 2 digit number by a 1 digit number with carrying



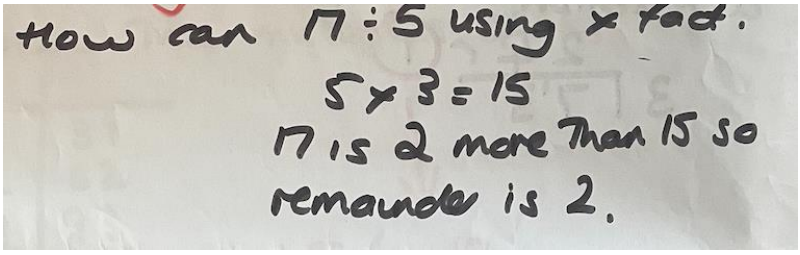

I can divide a 2 digit number by a 1 digit number using remainders



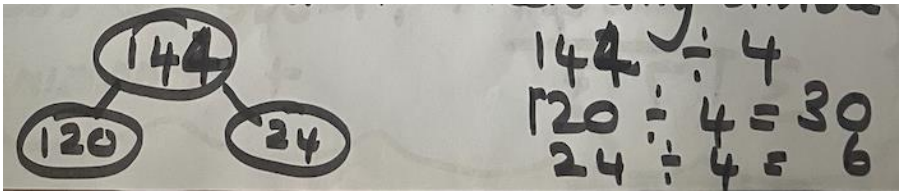
**Year Five:**

- I can use multiplication facts to solve division questions (3, 6, 4 and 8)
- I know division is the inverse of multiplication
- I can understand that division cannot be done in any order
- I know that a remainder is more than a multiple of what you are dividing by

- I can recall division facts using multiplication facts including remainders

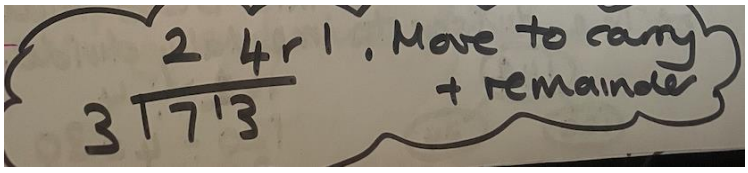



- I can partition numbers into known multiples of the divisor




- I can use partitioning to aid division including remainders

- I can divide a 2 digit number by a 1 digit number using remainders




- I can divide a 3 digit number by 1 digit number without remainders

- I can divide a 3 digit number by 1 digit number with remainders

$$\begin{array}{r} 1\ 5\ 3 \\ 4\overline{)\,6^{2}1^{1}2} \end{array}$$

**Figure 31: dividing 612 by 4 using short division**

| | |
|---|---|
| 6 hundreds ÷ 4 | = 1 hundred remainder 2 hundreds |
| 2 hundreds | = 20 tens |
| plus 1 more ten | = 21 tens |
| 21 tens ÷ 4 | = 5 tens remainder 1 ten |
| 1 ten | = 10 ones |
| plus 2 more ones | = 12 ones |
| 12 ones ÷ 4 | = 3 ones |

- I can divide a 4 digit number by 1 digit number without remainders
- I can divide a 4 digit number by 1 digit number with remainders

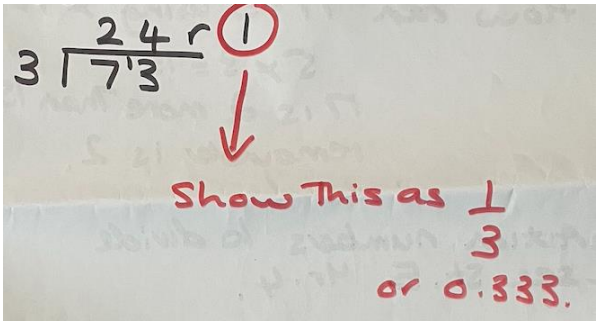
**Year Six:**

- I know that a remainder is more than a multiple of what you are dividing by
- I can recall division facts using multiplication facts including remainders
- I can recall division facts using multiplication facts including remainders for increasingly larger numbers
- I can divide a 3 digit number by 1 digit number without remainders
- I can divide a 3 digit number by 1 digit number with remainders


**Figure 31: dividing 612 by 4 using short division**

6 hundreds ÷ 4 = 1 hundred remainder 2 hundreds
2 hundreds = 20 tens
plus 1 more ten = 21 tens
21 tens ÷ 4 = 5 tens remainder 1 ten
1 ten = 10 ones
plus 2 more ones = 12 ones
12 ones ÷ 4 = 3 ones

- I can divide a 4 digit number by 1 digit number without remainders
- I can divide a 4 digit number by 1 digit number with remainders
- I can interpret remainders as a fraction

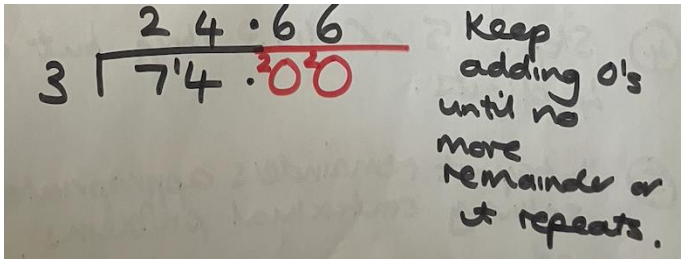



- I can interpret remainders as a decimal

142 ÷ 4 = 35·5 r2

2/4 = 1/2 = 0.5

$$4\overline{)142.0} = 035.5$$



- I can use division to determine unfamiliar fractions as a decimal

$$\frac{1}{8} = 1 \div 8$$

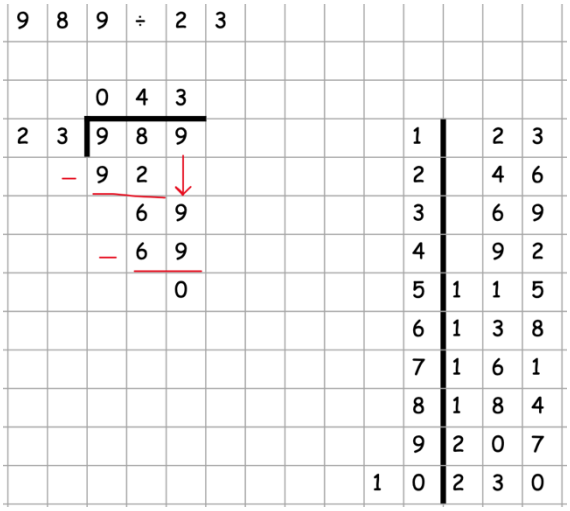
$$8 \overline{)\ 1 \cdot {}^{1}0\,{}^{2}0\,{}^{4}0} \quad 0 \cdot 1\ 2\ 5$$

$$\frac{1}{8} = 0{\cdot}125$$

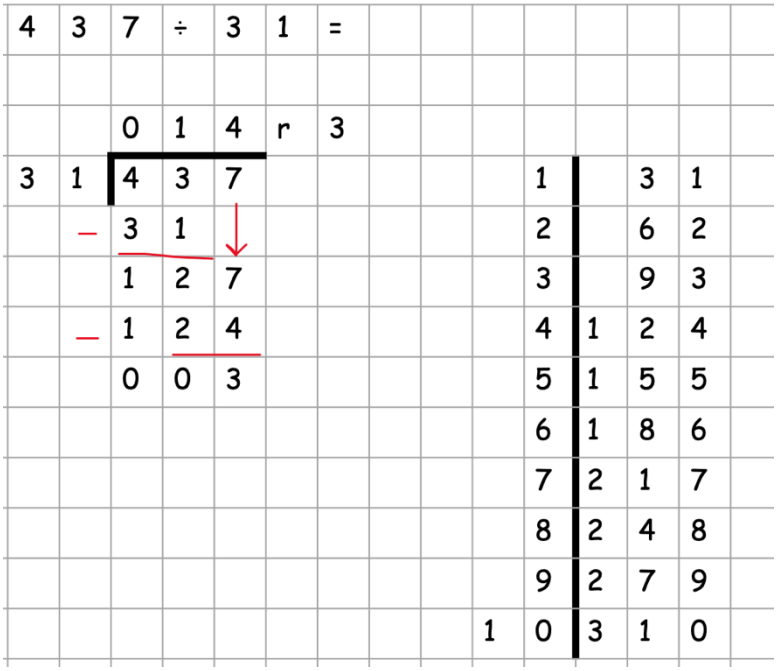
- I can use rounding to interpret the remainder where appropriate in a contextual problem

- I can use long division to divide a 3 digit number by a 2 digit number without remainders

1. Write the multiples of 23
2. Divide the hundreds → 9 ÷ 23 = 0
3. Look at the hundreds and tens together → 98 ÷ 23 = 4
4. Take away the multiple of 23 → 98 – 92 = 6
5. Pull down the ones (9) → 69
6. Divide → 69 ÷ 23 = 3
7. Write down remainders (important for when there is a remainder here)



- I can use long division to divide a 3 digit number by a 2 digit number with remainders




- I can use long division to divide a 4 digit number by a 2 digit number without remainders

- I can use long division to divide a 4 digit number by a 2 digit number with remainders

- I can apply knowledge of remainders as a fraction or decimal to long division

- I can solve contextual problems and display the remainder appropriately