

YEAR 4

Division

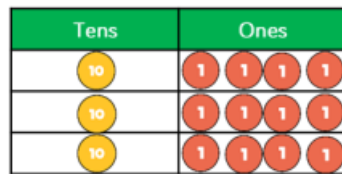
Vocabulary: divide, divided by, divisible by, divided into, share between, groups of, factor, factor pair, multiple, times as (big, long, wide ...etc), for every, equals, remainder, quotient, divisor, inverse

Concrete

Divide a 2 digit number by a 1 digit number

Start with simple partitioning ($36 \div 3$) then:

$$42 \div 3$$



$$= 14$$

1 ten has been exchanged for 10 ones.

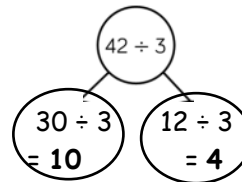
Extend to include remainders.

Pictorial

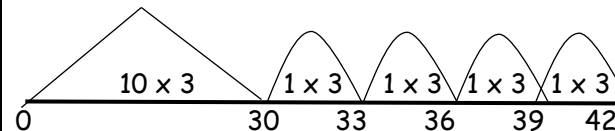
Divide a 2 digit number by a 1 digit number

Start with simple partitioning ($36 \div 3$) then:

$$42 \div 3$$



OR



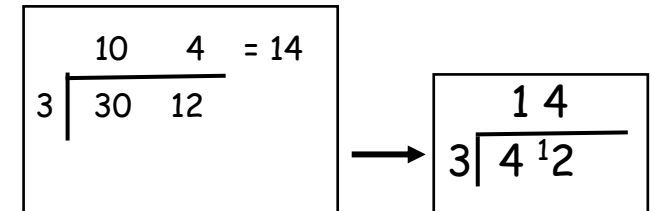
$$10 + 4 = 14 \text{ (moving on to jumps of } 4 \times 3 \text{)}$$

Abstract

Divide a 2 digit number by a 1 digit number

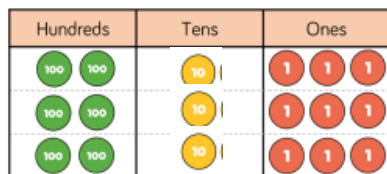
Start with simple partitioning ($36 \div 3$) then:

$$42 \div 3$$

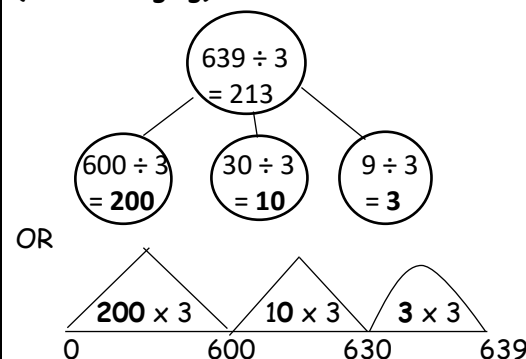


Divide a 3 digit number by a 1 digit number
(no exchanging)

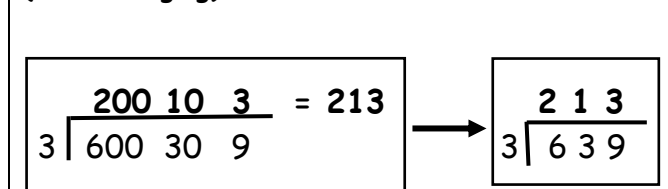
$$639 \div 3$$



Divide a 3 digit number by a 1 digit number
(no exchanging) $639 \div 3$



Divide a 3 digit number by a 1 digit number
(no exchanging) $639 \div 3$



Mental Methods

Number facts:

Count on and back in multiples of 6, 7, 9, 25 and 1000.

0 7 14 21 28 ...

300 275 250 225 200 ...

Learn the multiplication facts to 12×12 and use place value to derive related facts.

$6 \times 7 = 42$ $70 \times 6 = 420$

$42 \div 6 = 7$ $420 \div 6 = 70$

How many sixes in 54?

Divide 63 by 7

350 divided by 5

$108 \div 12$, what is the quotient?

Inverse:

Write the related number sentences

$6 \times 7 = 42$ $7 \times 6 = 42$

$42 \div 7 = 6$ $42 \div 6 = 7$

Doubling and halving

Derive corresponding halves of doubles of multiples of 50 to 1000 and multiples of 1000.

Half of 150 is ____ $700 \div 2 = \underline{\hspace{1cm}}$ $6000 \div 2 = \underline{\hspace{1cm}}$

$600 \div 4$ (halve & halve again)

Half of 600 is 300, half of 300 is **150**

$112 \div 8$ (halve, halve and halve again)

Half of 112 = 56, half of 56 = 28, half of 28 = **14**

Using known facts and place value:

If $6 \div 2 = 3$

Then:

$60 \div 20 = 3$, $600 \div 3 = 200$ etc.

Using factors

Recognise and use factor pairs

List the factor pairs of 32

$500 \div 20$ (Divide 500 by 10 then divide by 2)

$90 \div 6$ (Divide 90 by 3 then divide by 2)

Partitioning:

Continue to partition 2 and 3 digit numbers in different ways:

$762 = 700 + 60 + 2$

$762 = 600 + 120 + 42$ etc

Without crossing the tens boundary:

$78 \div 6 = 13$

Partition in to multiples of the divisor

$60 \div 6 = 10$; $18 \div 6 = 3$

$10 + 3 = 13$

Crossing the tens boundary:

$185 \div 5 = 37$

$150 \div 5 = 30$; $35 \div 5 = 7$

$30 + 7 = 37$

With remainders: $187 \div 5$

(using jottings - see above)