Written Calculation Guidance

Division

At Joseph Turner Primary School, we are always striving to raise standard sand support our children in their learning. In order to do this, we have devised this calculation guidance to ensure there is a progression of skills from mental methods to formal written methods.

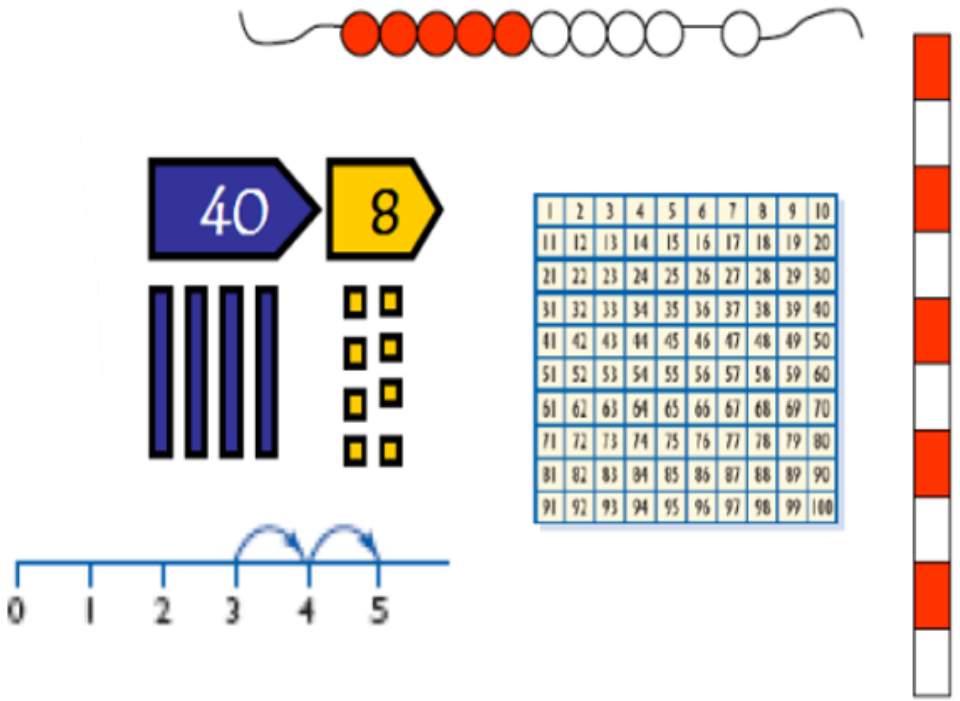
As all children learn at different paces, no year groups have been assigned to each specific method as adaptations will be made to suit each learner.

Mental Skills

- Recognise the size and position of numbers
- Count back in different steps 2s, 5s, 10s
- Halve numbers to 20
- Recognise division as repeated subtraction
- Quick recall of division facts
- Use known facts to derive associated facts
- Divide by 10, 100, 1000 and understand the effect

Models, Image and Apparatus

- Counting apparatus
- Arrays
- Number tracks
- Numbered number lines
- Marks but unnumbered number lines
- Empty number lines
- Models and images charts



Key Vocabulary

- Dividend
- Divisor
- Lots of
- Groups of
- Share
- Group
- Halve
- Half
- Divide
- Division
- Divided by
- Remainder
- Factor
- Quotient
- Divisible

Progression of methods

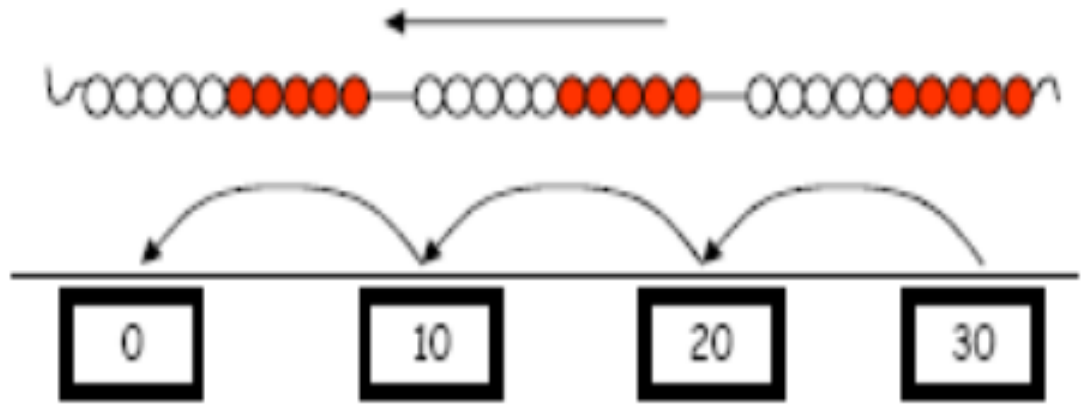
To be able
to group items

Can you put all
of the balls together?

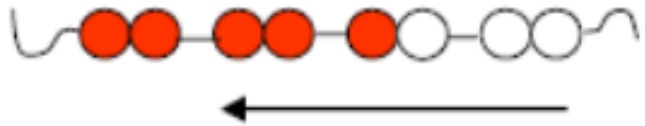
Solving practical problems by sharing into equal groups

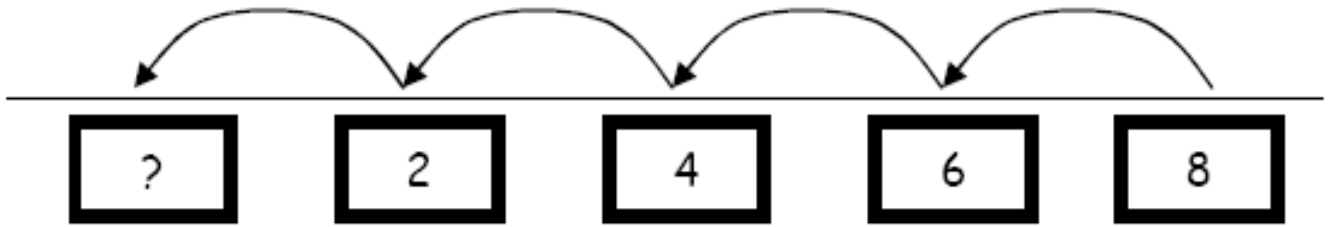
If I give every bear a bowl of porridge, how many bowls will I need?

Count back in tens

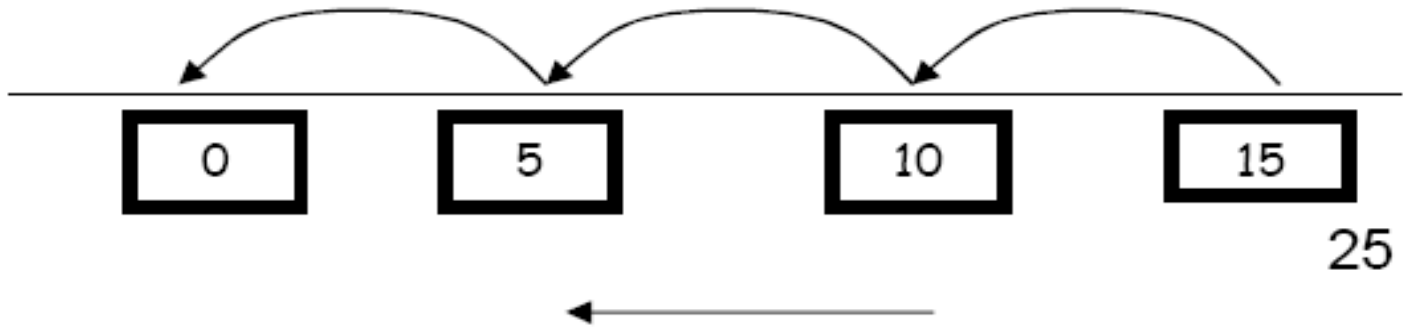


Count back in twos

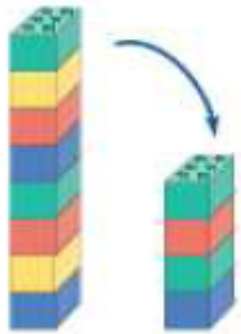




Count back in fives

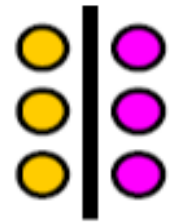


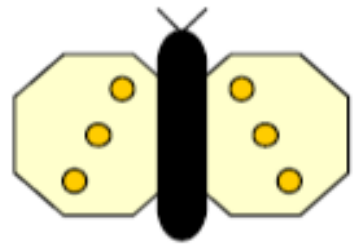
Know halves of numbers up to 20



half of 8 is 4

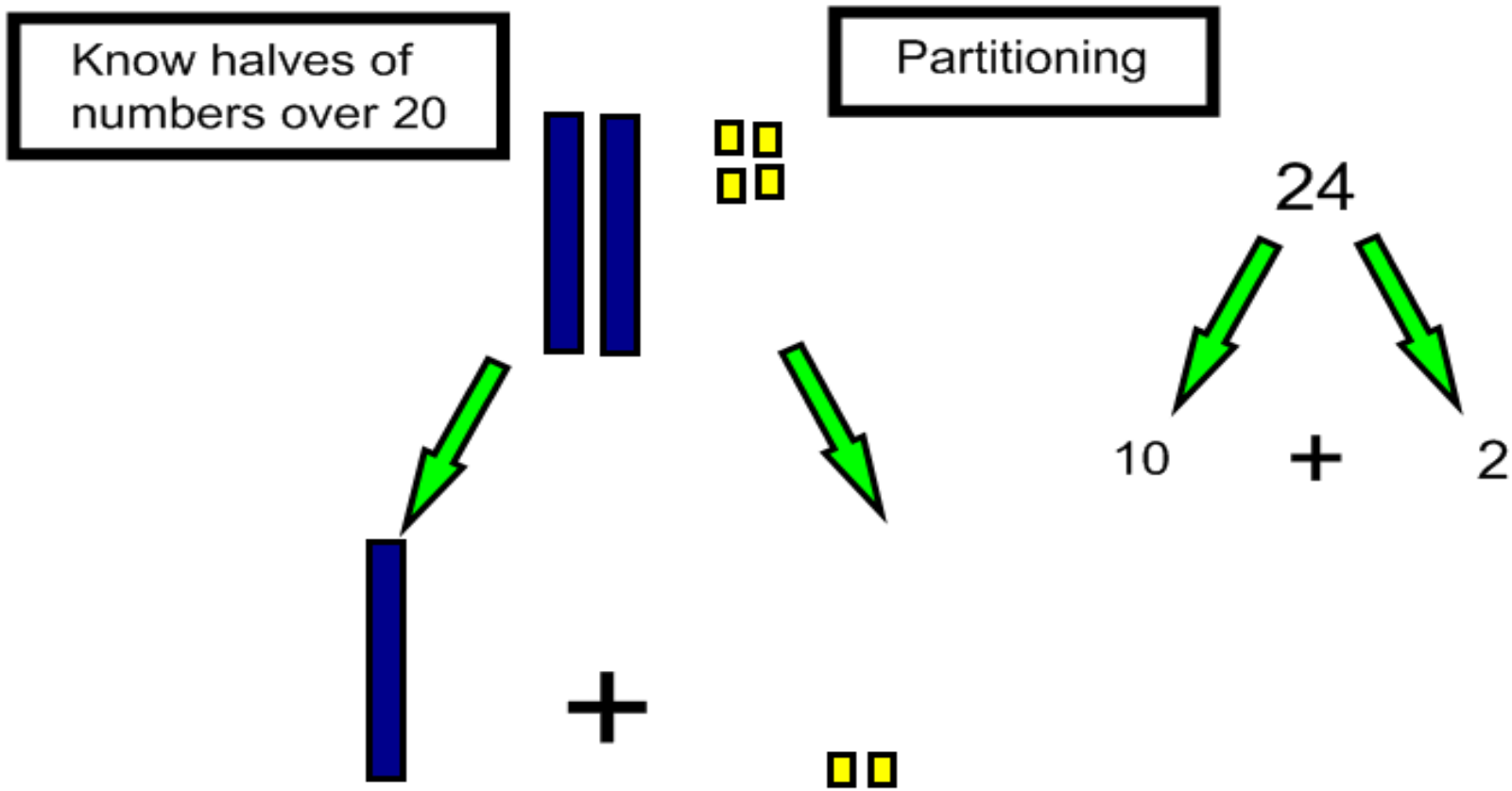
8 ÷ 2 = 4





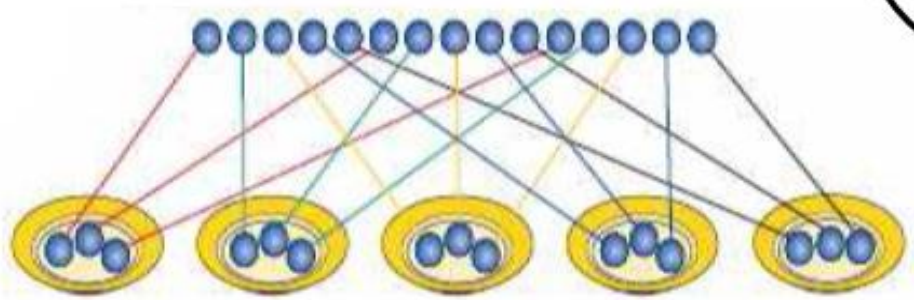
Half of 6 is 3

½ of 6 = 3


Know halves of numbers over 20
Partitioning
24
10
+
2
+

To understand division as sharing

15 divided by 5 = 3



'Dotty' diagrams can be used too...

To use known multiplication facts to work out corresponding division facts

3 x 4 = 12

So... 12÷4 = 3

And... 12÷3 = 4

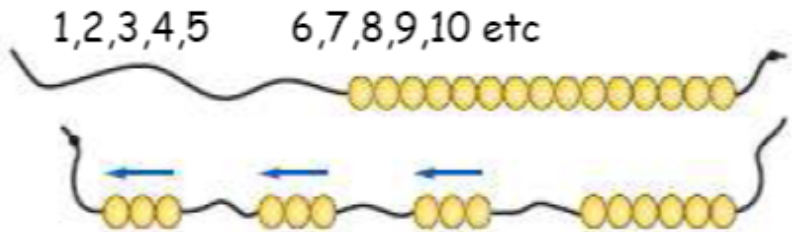
2 x 10 = 20

So... 20÷2 = 10

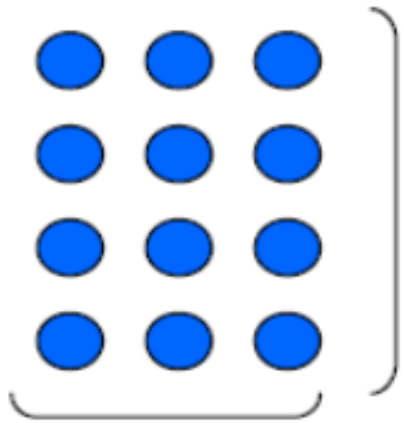
And... 20÷10 = 2

To understand division as grouping

1,2,3,4,5 6,7,8,9,10 etc



Reinforce division as grouping through the use of arrays



12 divided into groups of 4 gives 3 groups

$12 \div 4 = 3$

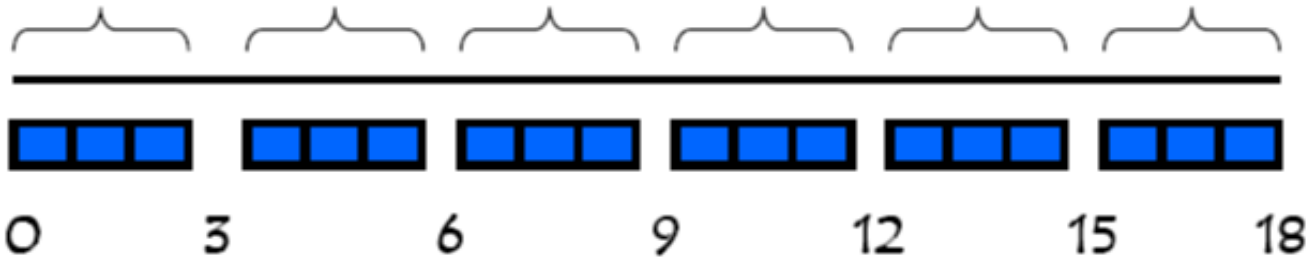
12 divided into groups of 3 gives 4 groups

$12 \div 3 = 4$

To represent 'groups' for division on a number line using apparatus along side.

18 divided into groups of 3

$18 \div 3 = 6$



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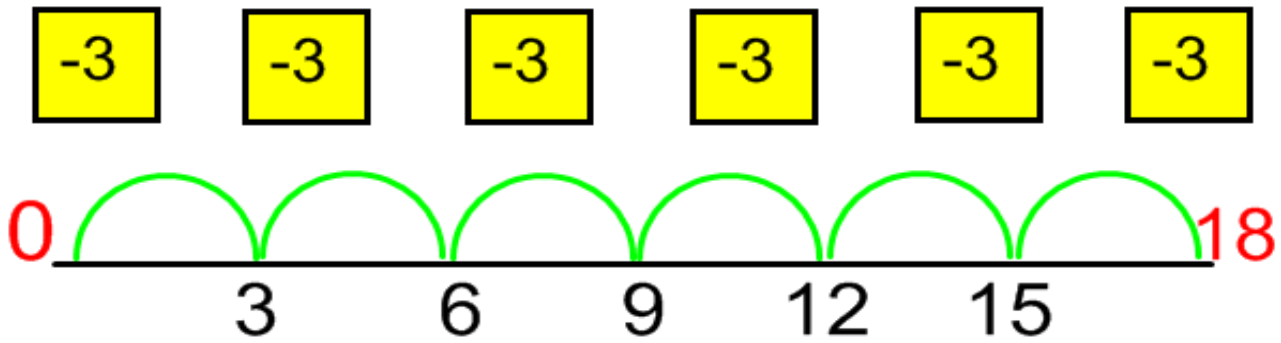
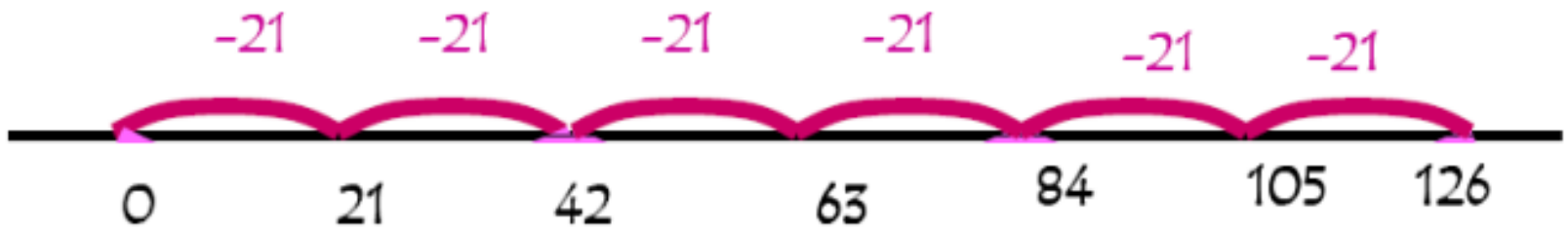


To represent 'groups' for division on a number line using TU divisor.

$126 \div 21 = 6$



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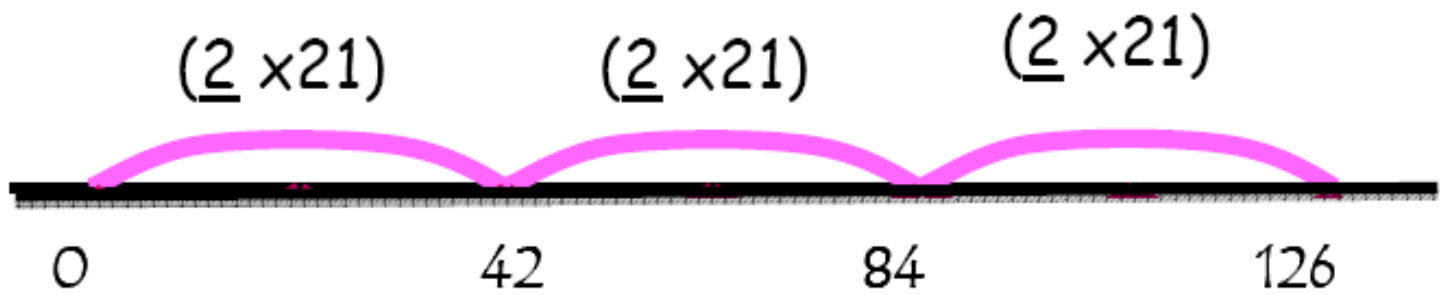
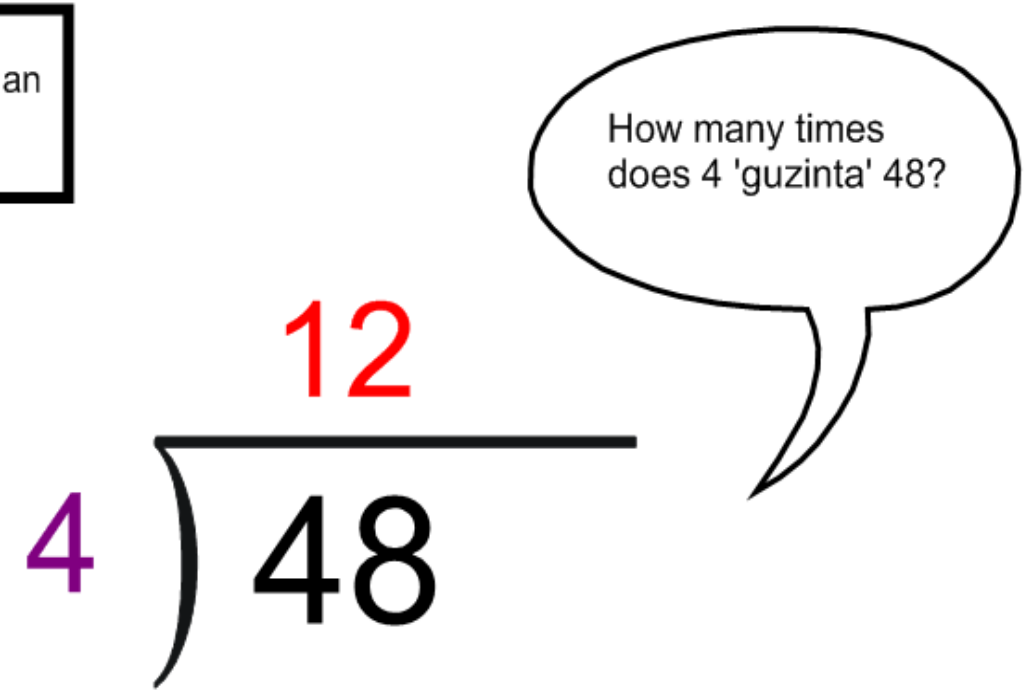
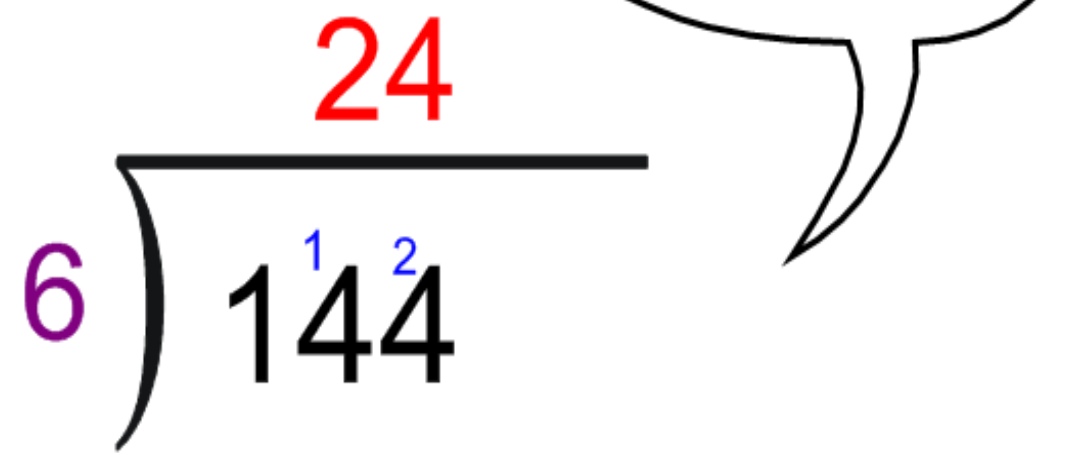


To use 'guzintas' as an efficient method

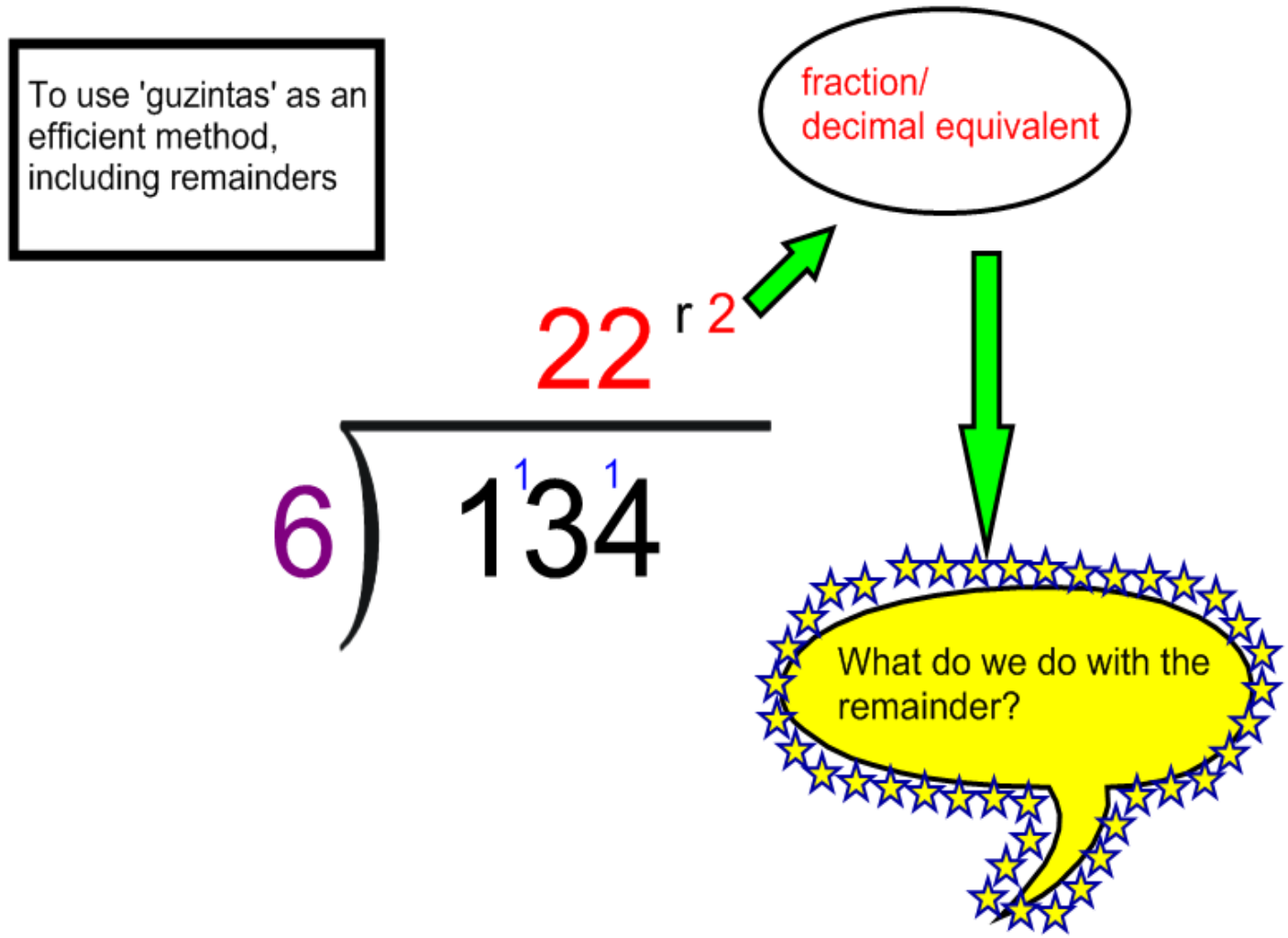


To use 'guzintas' as an efficient method with carrying

How many times does 6 'guzinta' 144?



To use 'guzintas' as an efficient method, including remainders



432 ÷ 15 becomes

			2	**8**	**r 12**
1	**5**	**4**	**3**	**2**	
		3	**0**	**0**	
		1	**3**	**2**	
		1	**2**	**0**	
			1	**2**	

Answer: 28 remainder 12

432 ÷ 15 becomes

			2	**8**	
1	**5**	**4**	**3**	**2**	
		3	**0**	**0**	15×20
		1	**3**	**2**	
		1	**2**	**0**	15×8
			1	**2**	

$$\frac{\not{12}}{\not{15}} = \frac{4}{5}$$

Answer: $28\,\frac{4}{5}$