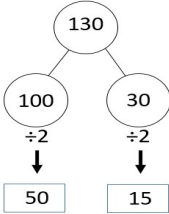
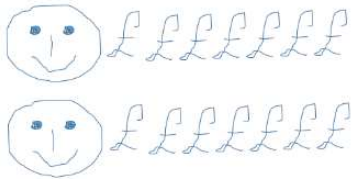
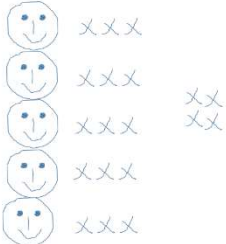
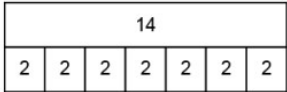
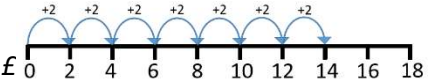
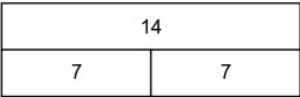
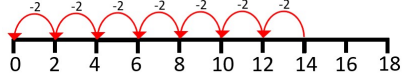
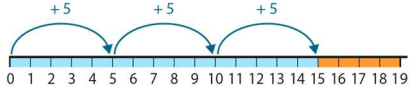
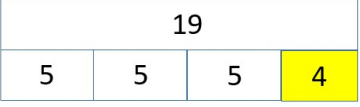


Calculation Policy

Year 3 Division

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year 3	Halve any multiple of 10 up to 200, e.g. halve 170  Recall and use division facts for the 3, 4 and 8 x tables, use halving to derive division by 2, 4 and 8 Calculate and write mathematical statements for division using related x tables facts, including for TU ÷ U mentally Develop efficient mental methods using facts e.g $6 \div 3 = 2$ and $2 \times 6 = 12$ to derive related facts $60 \div 3 = 20$ and $20 \times 3 = 60$	Apply division facts for 2, 4, 8, 5, 10 and 3 in both contexts of grouping and sharing <i>I need 14 ping-pong balls. There are 2 ping-pong balls in a pack. How many packs do I need?</i>  <i>£14 is shared between 2 children. How much money does each child get?</i>  Division with remainders <i>19 cars shared between 5 children</i> 	Apply division facts for 2, 4, 8, 5, 10 and 3 in both contexts of grouping and sharing <i>I need 14 ping-pong balls. There are 2 ping-pong balls in a pack. How many packs do I need?</i>  <i>£14 is shared between 2 children. How much money does each child get?</i>  Division with remainders <i>19 cars shared between 5 children</i> 	Apply division facts for 2, 4, 8, 5, 10 and 3 in both contexts of grouping and sharing <i>I need 14 ping-pong balls...</i> $14 \div 2 = 7$   <i>How much money does each child get?</i> $14 \div 2 = 7$   Division with remainders <i>19 cars shared between 5 children</i>   $19 \div 5 = 3r4$	Divide Share equally, one each, two each..., Grouping equal groups, how many lots of, groups of... half of halved symbol ÷ Remainder Left over Repeated subtraction dividend	100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value Disks Cuisenaire Base hundreds tens and ones Arrow Cards Gattegno chart Place Value Grid

Divide TO and HTO numbers by 10, understand the effect of $\div 10$ e.g. $700 \div 10$,

100s	10s	1s
4	5	0
$\div 10$	4	5

Also use the Gattegno Chart to help

Identify remainders when dividing by 2, 5 or 10

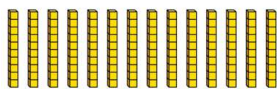
Know the vocabulary for division equations see below

dividend $\downarrow$ quotient $\downarrow$

$$20 \div 4 = 5$$

divisor

Related Calculations



$$14 \div 2 = 7 \quad 140 \div 2 = 70$$

Also use the Gattegno Chart to help

10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000
1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9

2 digit divided by 1 digit no exchange or remainders

£69 is shared between 3 children.
How much money does each child get?

	10s	1s
	10 10	1 1 1
	10 10	1 1 1
	10 10	1 1 1

2 digit divided by 1 digit with no exchange but remainders

£65 is shared between 3 children.
How much money does each child get?

	10s	1s
	10 10	1
	10 10	1
	10 10	1

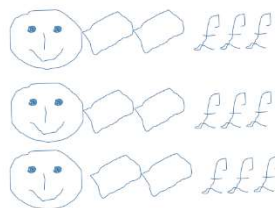


Related Calculations

$4 \times 30 = 120$ – draw it

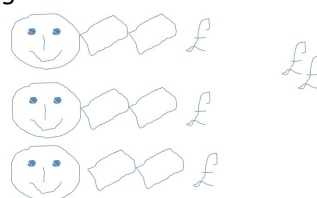
2 2 digit divided by 1 digit no exchange or remainders

£69 is shared between 3 children.
How much money does each child get?



2 digit divided by 1 digit with no exchange but remainders

£65 is shared between 3 children.
How much money does each child get?



Related Calculations

$$14 \div 2 = 7$$

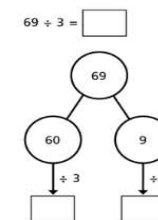
$$140 \div 2 = 70$$

14
7 7
140
70 70

2 digit divided by 1 digit no exchange or remainders

£69 is shared between 3 ...

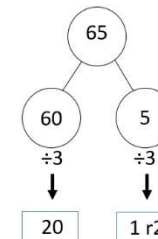
$$69 \div 3 = 33$$



Can also count back on numberlines (repeated subtraction) or count on. See above.

2 digit divided by 1 digit with no exchange but remainders

£65 is shared between 3...
 $65 \div 3 = 23 \text{ r } 2$



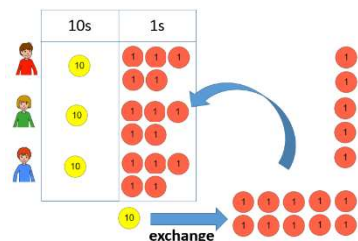
divisor

quotient

a tenth of the size

2 digit divided by 1 digit with exchange but no remainders

£45 is shared between 3 children.
How much money does each child get?



2 digit divided by 1 digit with exchange but no remainders

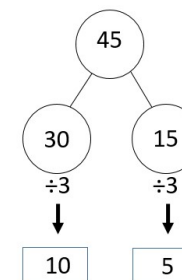
£45 is shared between 3 children.
How much money does each child get?

Can be drawn – please see above example

2 digit divided by 1 digit with exchange but no remainders

£45 is shared between 3...

$$45 \div 3 = 15$$



2 digit divided by 1 digit with exchange with remainders

Please see above worked examples – exactly the same principle, with a remainder and the need for exchanging tens for ones.

2 digit divided by 1 digit with exchange with remainders

Please see above worked examples – exactly the same principle, with a remainder and the need for exchanging tens for ones.

2 digit divided by 1 digit with exchange with remainders

Please see above worked examples – exactly the same principle, with a remainder and the need for exchanging tens for ones.

Solve problems in context deciding which method to use and why, including

missing number problems

measuring and money context

correspondence problems in which m objects are connected to n objects eg 12 sweets shared equally between 4 children; 40 cakes shared equally between 8.

Use practical methods and jottings, including remainders

Useful IWB links
for
manipulatives

<https://www.coolmath4kids.com/manipulatives/base-ten-blocks>
<https://mathsbot.com/manipulatives/placeValueCounters>
<https://mathsbot.com/manipulatives/bar>
<https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/>
<https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/>
<http://www.ictgames.com/mobilePage/tenFrame/index.html>