

Division



Nov 15 - 09:58

Early Division

Practical activities

Understanding language 'grouping' and 'sharing'

Jan 30-05:05

$$15 \div 3 =$$

can mean 15 shared between 3 - (sharing)

or

How many lots of 3 are there in 15? - (grouping)

Using knowledge of times tables

Use a number line (grouping):

0 3 6 9 12 15

$$15 \div 3 =$$

Nov 15 - 09:53

Early Chunking- 'repeated subtraction'

$$72 \div 5 =$$

$$\begin{array}{r} 72 \\ - 50 \\ \hline 22 \end{array} \quad 10 \times 5$$

$$\begin{array}{r} 72 \\ - 50 \\ \hline 22 \end{array} \quad 10 \times 5$$

$$\begin{array}{r} 22 \\ - 20 \\ \hline 2 \end{array} \quad 4 \times 5$$

How many are left? 2

Count up the lots of 5 14

The answer is 14 remainder 2

$$72 \div 5 = 14 \text{ r } 2$$

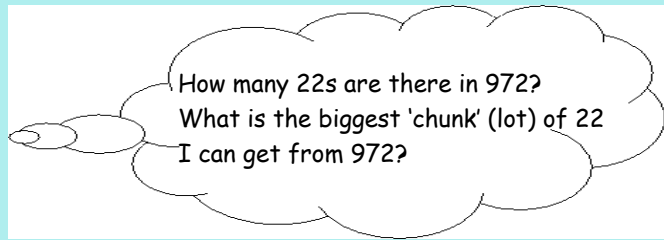
How many lots of five are there in 72?
What do I know from my 5 times table?
I know 10 lots of 5 are 50, so I can take off
10 lots of 5:

How many lots of 5 are there in 22?
I know 4 lots of 5 are 20, so I can
take off 4 lots of 5.

Nov 15 - 09:59

$972 \div 22 =$

$$\begin{array}{r}
 44 \text{ r } 4 \\
 22 \overline{)972} \\
 \underline{880} \quad (40 \times 22) \\
 92 \\
 \underline{88} \quad (4 \times 22) \\
 4 \text{ the remainder}
 \end{array}$$



Chunking using larger numbers (long division)

$$\begin{array}{r}
 44 \text{ r } 4 \\
 22 \overline{)972} \\
 \underline{880} \quad 40 \times 22 \quad (10 \times 22 = 220. \text{ So } 4 \text{ lots of } 220=880) \\
 92 \\
 \underline{88} \quad 4 \times 22 \quad (4 \times 22 = 88) \\
 4 \text{ (remainder)}
 \end{array}$$

count up the 'chunks' or multiples of 22

The answer is 27

$972 \div 36 = 27$

Nov 15 - 10:14

432 school children are going on an outing. If each bus takes 15 passengers, how many buses will be needed?

$$\begin{array}{r}
 432 \\
 \underline{-300} \quad (20 \text{ buses } \times 15) \\
 132 \\
 \underline{-90} \quad (6 \text{ buses } \times 15) \\
 42 \\
 \underline{-30} \quad (2 \text{ buses } \times 15) \\
 12 \quad (\text{people left})
 \end{array}$$

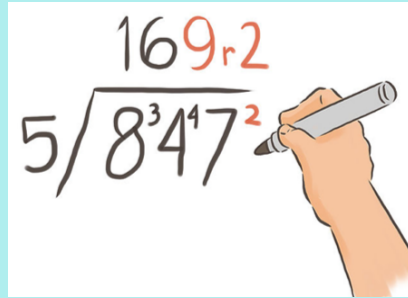
Applying to worded problems

So we need 29 buses or 28 buses and some cars!

Mar 2-13:00

Short Division

'Short' division of HTU ÷ U can be introduced as an alternative, more compact recording. No chunking is involved since the links are to partitioning, not repeated subtraction.



Remember the rule: When you say no..... put a zero.

Show example: $625 \div 3 =$

Nov 12-13:53

Long Division

$$\begin{array}{r}
 0175 \text{ r } 11 \\
 14 \overline{)2461} \\
 \underline{14} \\
 106 \\
 \underline{98} \\
 81 \\
 \underline{70} \\
 11
 \end{array}$$

The diagram shows a long division problem. The divisor is 14 and the dividend is 2461. The quotient is 0175 with a remainder of 11. Red arrows point downwards from the 14 in the quotient to the 14 in the dividend, from the 106 in the quotient to the 106 in the dividend, and from the 98 in the quotient to the 98 in the dividend. A green arrow points upwards from the 11 in the dividend to the 11 in the remainder.

Nov 18-10:15