Division Strategies

Dividing by 10

Use place value to work out how to divide in 10s

674 ÷ 10 = ?

If you divide a number by 10, the digits move one place value to the right.

Hundreds	Tens	Ones	Tenths	Hundredths
6	7	4.		

Hundreds	Tens	Ones	Tenths	Hundredths
	6	7.	4	

674 ÷ 10 = 67.4

If you divide a number by 100, the digits will move two places to the right.

Hundreds	Tens	Ones	Tenths	Hundredths
6	7	4.		

Hundreds	Tens	Ones	Tenths	Hundredths
		6.	7	4

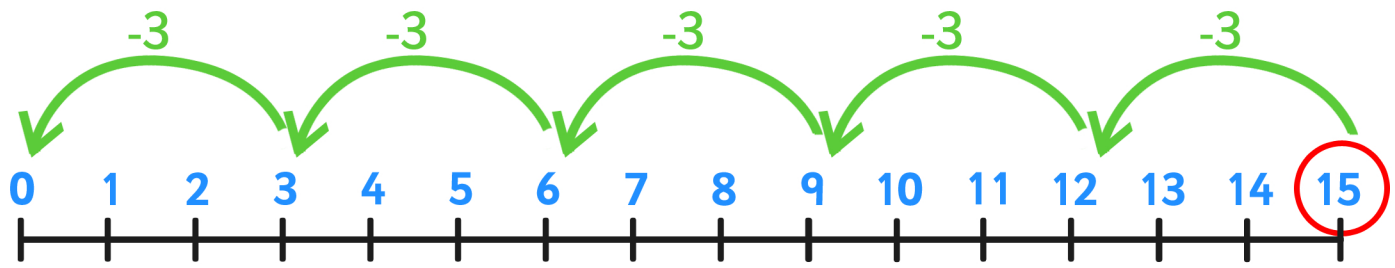
674 ÷ 100 = 6.74

Division Strategies

Repeated Subtraction

You can use repeated subtraction to see how many times a smaller number goes into a bigger one.

$$15 \div 3 = ?$$



The number of times you can take 3 from 15 is 5.

$$15 - 3 - 3 - 3 - 3 - 3 = 0$$

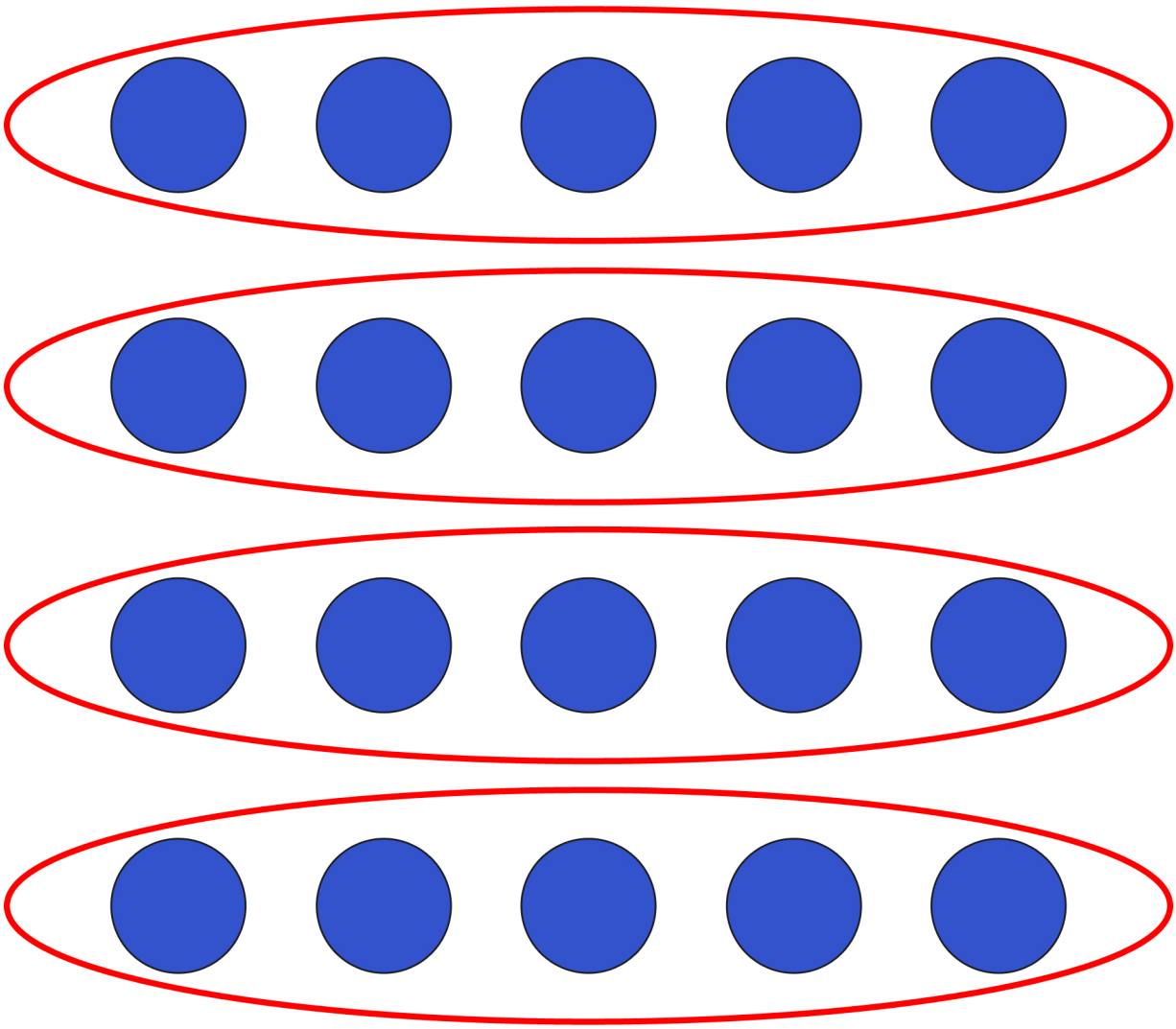
$$15 \div 3 = 5$$

Division Strategies

Grouping

$$20 \div 5 = 4$$

20 divided by 5 gives 4 groups.



Grouping using arrays.

Division Strategies

Repeated Addition

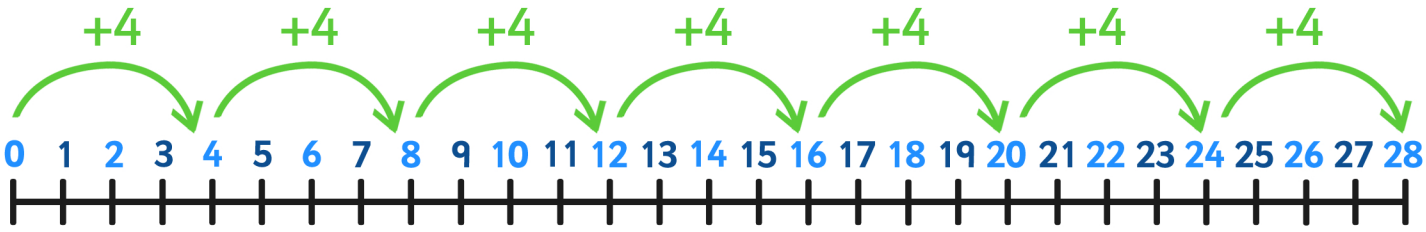
$$28 \div 4 = 7$$

Draw a number line starting at 0.

Count on in 4s until you reach 28.

Count how many hops it took.

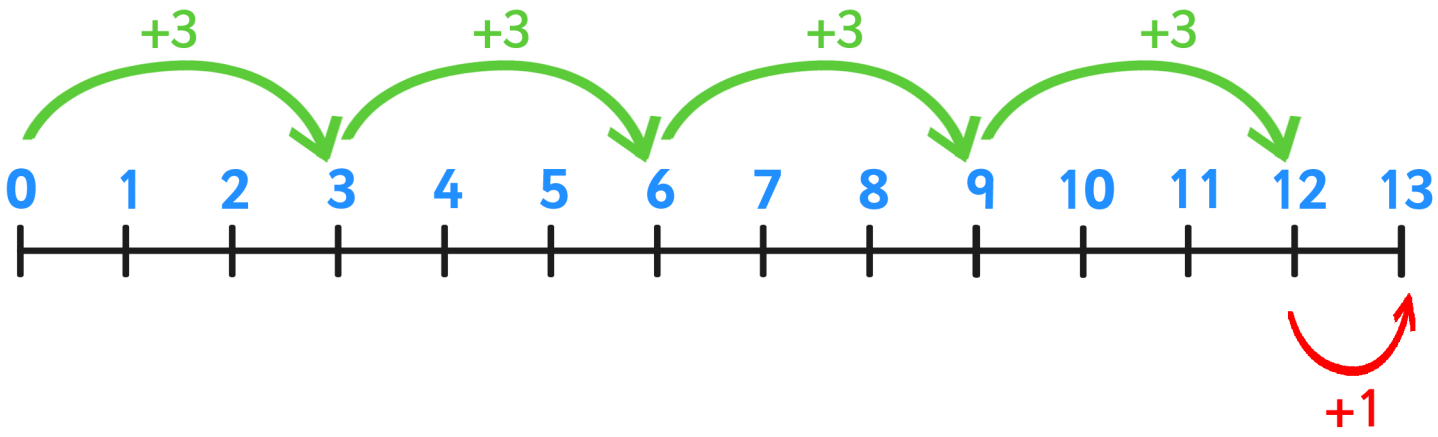
28 divided by 4 is 7.



Division Strategies

Repeated Addition
(with remainders)

$$13 \div 3 = 4 \text{ r} 1$$



Draw a number line starting at 0.

Count on in 3s getting as close to 13 as you can.

Count your hops to get the answer.

Any left over is the remainder.

Partitioning

$84 \div 4$

$80 \div 4 = 20$

$4 \div 4 = 1$

$20 + 1 = 21$

Partition the number into tens and ones.

Divide the tens and ones.

Combine your totals.

$84 \div 4 = 21$

Division Strategies

Inverse

Use multiplication tables to work out a division question.

$$63 \div 9 = ?$$

You can work this out by knowing...

$$7 \times 9 = 63$$

So using the inverse, we know that...

$$63 \div 9 = 7$$

Division Strategies

Halving

Sometimes you can use halving to divide into 2s, 4s, and 8s.

$$120 \div 2 = 60$$

We can use this to divide by 4 by halving twice.

$$120 \div 2 = 60$$

then

$$60 \div 2 = 30$$

so

$$120 \div 4 = 30$$

We can use this to divide by 8 by halving 3 times.

$$120 \div 2 = 60$$

then

$$60 \div 2 = 30$$

then

$$30 \div 2 = 15$$

so

$$120 \div 8 = 15$$

Division Strategies

Short Division

two digit numbers

$$84 \div 6 = ?$$

Partition 84 into tens and ones.

Work out how many 6s divide into 80 so that the answer is a multiple of 10.

In this case the highest multiple of 10 divisible by 6 is 60.

Partition 84 into 60 and 24 then divide each number by six.

Combine your totals.

$$\begin{array}{r} 10 + 4 = 14 \\ \hline 6 \overline{)\,60 + 24} \end{array}$$

This method can be shortened to:

$$\begin{array}{r} 1\ 4 \\ \hline 6 \overline{)\,8^{2}4} \end{array}$$

Division Strategies

Short Division

three digit numbers

$$434 \div 7 = ?$$

Work out how many 7s go into 430. (The answer must be a multiple of 10.)

In this case 7 goes into 430 sixty times leaving a remainder of 10.

Add this 10 to the remaining 4 from the original 434 to make 14.

Divide 14 by 7 to get 2.

Combine 60 and 2 to get the answer.

$$7\overline{)430 + 4} = 7\overline{)420 + 14}\ \overline{60 + 2}$$

This method can be shortened to:

$$7\overline{)43^{1}4}\ \overline{62}$$

Division Strategies

Long Division

$399 \div 15 = ?$

$$
\begin{array}{r}
26\ \frac{3}{5} \\
15\overline{)399} \\
\underline{300} \\
99 \\
\underline{90} \\
r9
\end{array}
$$

$\frac{9}{15} = \frac{3}{5}$

First partition the number.

Divide 300 by 15. Write this on the answer line above the correct units.

Divide 99 by 15.

Write any remainders as a fraction as simplified as possible.