

Written Division

Short Division



This method is good for dividing by a one-digit number.

- 1) **Partition** the big number into thousands, hundreds, tens and units. Divide each of these numbers, starting with the **highest** place value. (It's different from adding, subtracting and multiplying.)
- 2) Put the **result** of each division **on top** in the correct place value column.
- 3) Sometimes you need to **exchange**. This example shows you how.

EXAMPLE: What is $1664 \div 8$?

$8 \overline{) 1664}$	\rightarrow	$8 \overline{) 1^2 664}$	\rightarrow	$8 \overline{) 166^2 4}$	\rightarrow	$8 \overline{) 166^2 4^8}$
$1664 = 1000 + 664$ 1 thousand doesn't divide by 8 to give any thousands, so exchange the 1 thousand for 10 hundreds.		You've got 16 in the hundreds place. $1600 \div 8 = 200$ So put 2 on top in the hundreds place.		$64 = 60 + 4$ 6 tens don't divide by 8 to give any tens. Put a 0 on top in the tens place. Exchange the 6 tens for 60 units.		You've now got 64 units. $64 \div 8 = 8$ So put 8 on top in the units place.

So the answer is **208**.

The Remainder is the Bit Left Over

Sometimes one number won't divide perfectly by another. The amount **left over** after the division is called the **remainder**.

EXAMPLE: 10 into 31 goes **3 times with remainder 1** (because $3 \times 10 = 30$)

You can write the remainder as a **number**, a **fraction** or a **decimal**.

So $31 \div 10 = 3 \text{ r } 1 = 3\frac{1}{10} = 3.1$

The number on the bottom of the fraction needs to be the number you were dividing by.

Sometimes you'll need to round the answer to a whole number.

EXAMPLE: Giant worms cost 20p for a bag of 3. Herman has 72p. How many bags of worms can he afford?

ANSWER: You need to know how many 20p's you can get out of 72p. So it's **how many times 20 goes into 72**.

$72 \div 20 = 3 \text{ remainder } 12$. You can't buy bits of a bag, so **ignore** the remainder.

So Herman can buy **3 bags**.

"I can divide a four-digit number by a one-digit number and deal with remainders."

