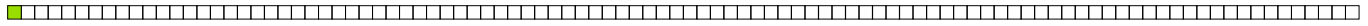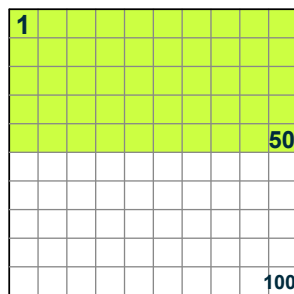# Percentages (%)

When we say "Percent" we are really saying "per 100"

One percent (**1%**) means 1 per 100.
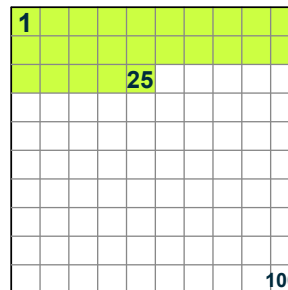
1% of this line is shaded green: it is very small isn't it?
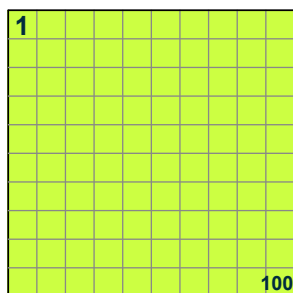
50% means 50 per 100
(50% of this box is green)
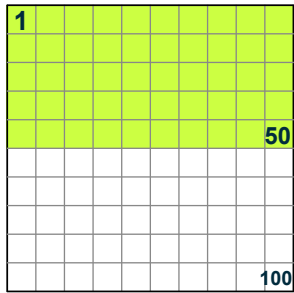
25% means 25 per 100
(25% of this box is green)
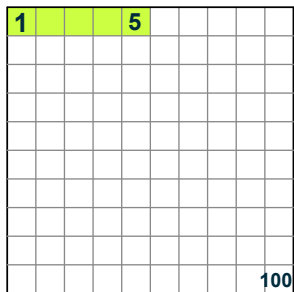
Examples:

100% means all.

Example:

$$100\% \text{ of } \mathbf{80} \text{ is } \frac{100}{100} \times 80 = 80$$

50% means **half**.

Example:

50% of **80** is $\dfrac{50}{100} \times 80 = 40$

5% means $^5/_{100\text{ths}}$.

Example:

5% of **80** is $\dfrac{5}{100} \times 80 = 4$

Using Percent

When 100% = (80) then:

200% = 160

Use the slider and try some different numbers
(What is 40% of 80? What is 10% of 200? What is 90% of 10?)

Because "Percent" means "per 100" think:

"this should be divided by 100"

So **75%** really means $\dfrac{75}{100}$

And **100%** is $\dfrac{100}{100}$, or exactly **1** (100% of any number is just the number, unchanged)

And **200%** is $\dfrac{200}{100}$, or exactly **2** (200% of any number is twice the number)

A **Percent** can also be expressed as a ***Decimal*** or a ***Fraction***

A Half can be written...

As a percentage: 50%
As a decimal: 0.5
As a fraction: $^1/_2$

Read more about this at [Decimals, Fractions and Percentages](#) .

Some Worked Examples

Example: Calculate 25% of 80

$$25\% = \dfrac{25}{100}$$

$$\text{And} \quad \dfrac{25}{100} \times 80 = \mathbf{20}$$

So 25% of 80 is **20**

Example: 15% of 200 apples are bad. How many apples are bad?

$$15\% = \dfrac{15}{100}$$

$$\text{And} \quad \dfrac{15}{100} \times 200 \ = \ 15 \times \dfrac{200}{100}$$

$$= \ 15 \times 2$$
$$= \ \textbf{30 apples}$$

30 apples are bad

Example: if only 10 of the 200 apples are bad, what percent is that?

As a fraction, $\dfrac{10}{200} = 0.05$

As a percentage it is: $\dfrac{10}{200} \times 100 = 5\%$

5% of those apples are bad

Example: A Skateboard is reduced 25% in price in a sale.
The old price was $120.
Find the new price.

First, find 25% of $120:

$$25\% = \frac{25}{100}$$

$$\text{And} \ \ \frac{25}{100} \times \$120 = \textbf{\$30}$$

25% of $120 is $30

So the **reduction** is $30

Take the reduction from the original price

$$\$120 - \$30 = \$90$$

The Price of the Skateboard in the sale is **$90**