What are scales?

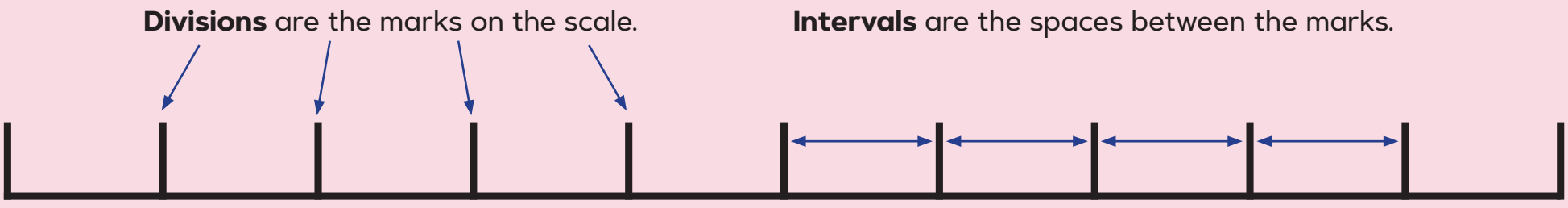
Scales are number lines that are used for measurement. They can be vertical, horizontal or even circular. The number line is split into divisions (marked by a short line) **and** intervals (the space between each division).

Scales in real life

Measuring instruments, such as weighing scales, measuring jugs, oven dials or speedometers, usually display values using a scale. Scales are also used on the axes of graphs.

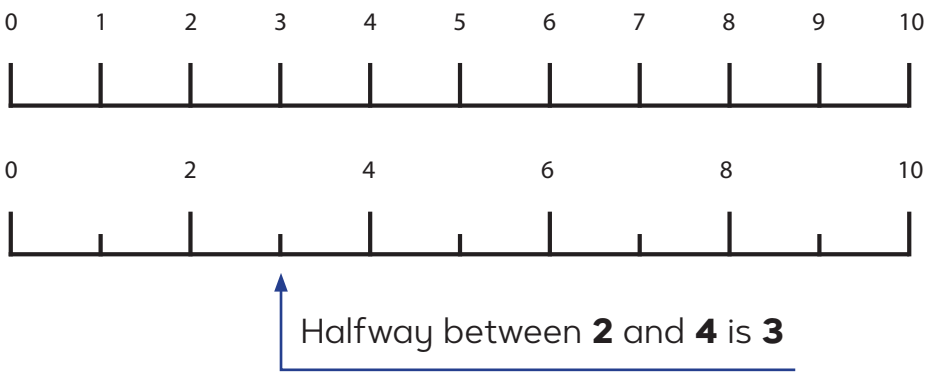
Rewarding Learning

How to read scales



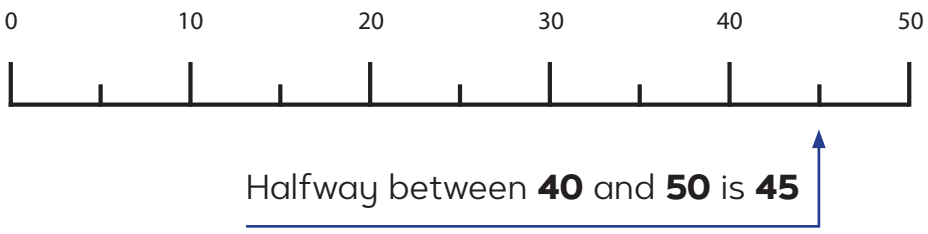
It is important to work out what each interval on the scale is worth.

On simple scales each division is marked with a number and each **interval** is worth 1 unit.

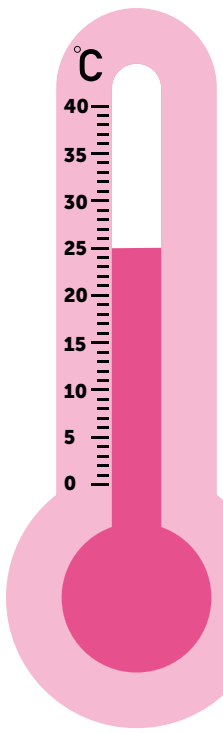


These scales are the same but not all the numbers are marked on the second scale.

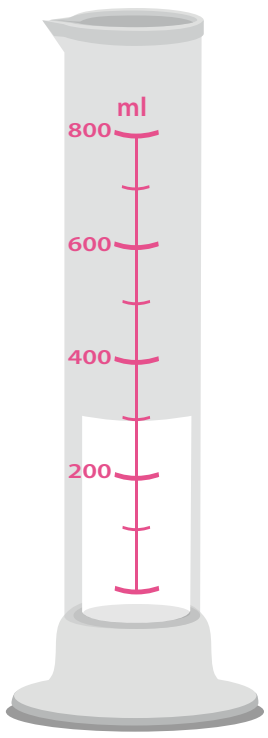
To find the missing numbers work out what is halfway between the numbers marked.



When one division is marked between two numbers, the missing number will be halfway between the numbers marked.



The temperature on the thermometer is 25 °C.



The capacity of liquid in the measuring cylinder is 300 ml because it is halfway between 200 ml and 400 ml.

The mass of the block on the balance scale is 900 g because it is halfway between 800 g and 1000 g.

Level 3

Read simple measuring instruments with an appropriate degree of accuracy.

What are scales?

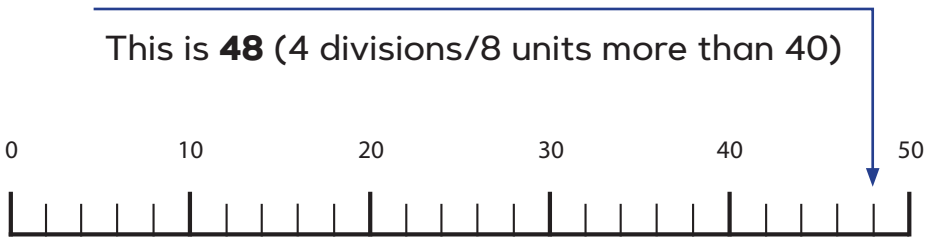
Scales are number lines that are used for measurement. They can be vertical, horizontal or even circular. The number line is split into divisions (marked by a short line) **and** intervals (the space between each division).

Scales in real life

Measuring instruments, such as weighing scales, measuring jugs, oven dials or speedometers, usually display values using a scale. Scales are also used on the axes of graphs.

Rewarding Learning

Often, scales are marked in tens, twenties or hundreds with divisions marked between. To be able to read any marked division **it is important to work out what each interval on the scale is worth**.



This scale is going up in **tens** and there are 4 divisions and **5 intervals** between each number. To work out what each interval is worth, divide 10 by the number of intervals, which is **10 ÷ 5 = 2**

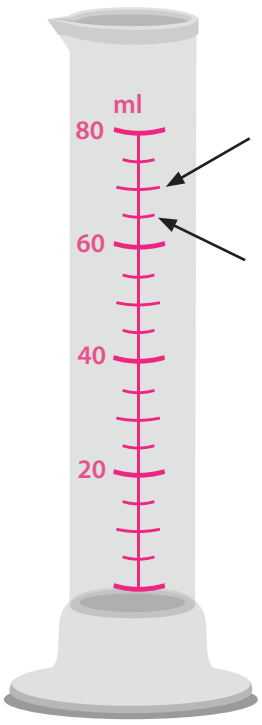
Each division is another 2 units.

These bathroom scales are going up in **tens** and there are **5 intervals** between each number. Therefore, each division is another 2 kg. The weight shown on the scales is halfway between 62 kg and 64 kg. Halfway between 62 kg and 64 kg is 63 kg.

The scale on a measuring cylinder is going up in **twenties** and there are 3 divisions and **4 intervals** between each number. To work out what each interval is worth, divide 20 by the number of intervals, which is **20 ÷ 4 = 5**

Each division is another 5 ml.

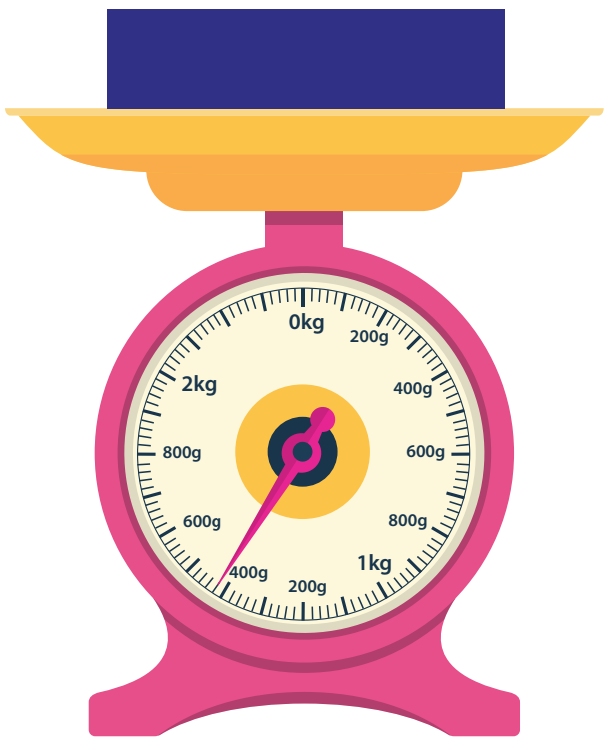
It is also possible to read the scale by finding halfway between the numbers marked and then halfway again.



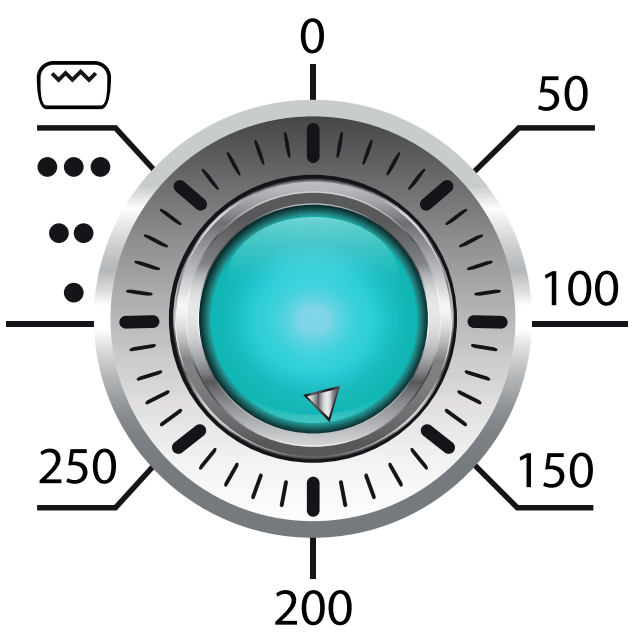
Halfway between 60 ml and 80 ml is **70 ml**.

This is **65 ml** as it is half way between 60 ml and 70 ml.

It is also 1 division, or 5 ml, above 60 ml.



The mass on the scale is 1 kg 420 g because each interval is 20 g.



To set the temperature of the oven to 190 °C the knob should be turned to here. Each interval is 10 °C.

The arrow is pointing to 4.75 kg. Each interval is worth ¼ kg or 0.25 kg.

Level 4

Estimate and measure length, 'weight'/mass, time and temperature, working to an appropriate degree of accuracy.