Pi and Finding the Circumference of a Circle

KS3 MATHS Ages 11-14 ⏰ 4 min read

What Is Pi?

Pi (written as the Greek letter π) is one of the most famous numbers in maths. It's not a whole number or a simple fraction — it's a **special constant** that never changes. Pi equals approximately **3.14159**, but its decimal digits go on forever without repeating!

So where does pi come from? It appears whenever you work with circles. If you take any circle and divide its **circumference** (the distance around it) by its **diameter** (the width straight through the middle), you always get pi. Always!

Think of it like a perfect recipe: no matter how big or small your pizza is, the ratio of how far around it is to how wide it is will always be about 3.14 times. A tiny pizza and a huge pizza both follow the same rule.

Why Does Pi Matter?

Pi is incredible because it connects two measurements that seem totally different: the straight-line width of a circle and the curved distance around it. Ancient mathematicians discovered this relationship thousands of years ago, and it still amazes us today. Without pi, architects couldn't design circular buildings, engineers couldn't make wheels, and we couldn't calculate the orbits of planets!

Finding the Circumference

Now for the practical bit! The **circumference** is simply the perimeter of a circle — imagine wrapping a string around a coin. To calculate it, we use this formula:

Circumference = π × diameter

Or, if you know the **radius** (half the diameter) instead:

Circumference = 2 × π × radius

Let's try an example. Imagine a circle with a diameter of **10 centimetres**. Using our formula: Circumference = 3.14 × 10 = **31.4 centimetres**. That's how far around the

circle is!

Think of it like measuring a circular running track: if you know how wide the track is, pi helps you work out exactly how far runners have to run to complete one lap around it.

Pi in Real Life

Pi isn't just for maths homework. Engineers use it to design tyres, wheels, and water pipes. Astronomers use it to calculate how far planets travel around the Sun. Even your phone's camera lens uses circles and pi to focus light!

Understanding pi and circumference opens the door to understanding the whole world of circles — and circles are everywhere.