Calculating the Area of Triangles and Circles

KS4 MATHEMATICS Ages 11-14 ⏰ 3 min read

What is Area?

Area is the amount of space inside a shape. Imagine you're painting a wall or tiling a floor — you need to know how much paint or tiles to buy. That's what area tells you. It's always measured in **square units**, like square metres or square centimetres.

Think of it like filling a swimming pool with water. The bigger the pool, the more water you need. Area works the same way.

How to Calculate the Area of a Triangle

A triangle has three sides and comes to a point. To find its area, you need two measurements: the **base** (the flat bottom) and the **height** (how tall it is).

The formula is simple: **Area = (base × height) ÷ 2**

Here's an example: if your triangle has a base of **8 centimetres** and a height of **6 centimetres**, multiply **8 × 6 = 48**, then divide by **2** to get **24 square centimetres**.

Think of it like this: two identical triangles fit together perfectly to make a rectangle. So a triangle is half a rectangle! That's why you divide by two.

How to Calculate the Area of a Circle

A circle is round with no corners. To find its area, you only need one measurement: the **radius** (the distance from the centre to the edge).

The formula uses a special number called **pi** (written as π), which equals about **3.14**. The formula is: **Area = π × radius²** (that means radius multiplied by itself)

Here's an example: if your circle has a radius of **5 centimetres**, you'd calculate: **5 × 5 = 25**, then **25 × 3.14 = 78.5 square centimetres**.

Think of it like cutting a circle into lots of tiny pizza slices and rearranging them. Ancient mathematicians discovered that all circles follow the same pattern with pi.

Why Does This Matter?

These calculations are useful everywhere! Architects use them to design buildings, farmers use them to measure fields, and pizza places use them to work out how much topping they need.

Free for educational use