



How to Teach Measurement in Year 3: Measuring the Perimeter of 2D Shapes

“In year 3, children should measure the perimeter of simple 2D shapes.”

National curriculum statement

Within the year 3 curriculum, children will learn what is meant by the term ‘perimeter’ as well as measuring these in simple 2D shapes, beginning with rectangles and squares counting in steps of one. Children should be confident when explaining that perimeter is the total length around all sides of a 2D shape. They should also use and mark squares to calculate simple perimeters, find missing lengths, and calculate perimeters in 2D shapes where images are not drawn to scale.

Key Vocabulary

perimeter, measure, scale, 2D shapes, length, millimetres, centimetres, metres

Common Misconceptions and Errors

Children may incorrectly mark the squares surrounding a shape when calculating the perimeter, counting extra or fewer squares than needed.

Children may measure using the wrong unit, not taking into account the scale of the shape.

Units may be mixed with some sides being annotated in cm and other in mm, meaning children must remember to convert measures to ensure accuracy.

When using a ruler to measure perimeter, rather than pre-measured squared, children should recap (or be reminded of) ruler usage.

Bringing Maths to Life

Look at a range of different objects, estimating the perimeter and ensuring that children are working in the correct unit of measure. For example, the perimeter of an exercise book would be measured in centimetres whereas the perimeter of a football field would be measured using metres.

Practice drawing 2D shapes onto squared paper, beginning with squares and rectangles before calculating their perimeter.

Set children a perimeter challenge, for example, can you design a new playground using the following list of perimeters?

Example Questions to Develop Understanding

- Does it make a difference where you start measuring from?
- How many cm square lengths is the perimeter of the rectangle?
- Can you show the perimeter using a part-whole model?
- What is the missing length?
- The perimeter of my 2D shape is $2\text{cm} + 2\text{cm} + 4\text{cm} + 4\text{cm}$, what shape have I drawn?

Teaching and Learning Points

- Ensure that children understand the term ‘perimeter’ as the measured length around all sides of a 2D shape. Practice drawing simple shapes on a whiteboard to show how you would calculate the perimeter.
- Show children simple measuring skills, ensuring they choose a suitable starting point, only count each side once, and are able to use their ruler correctly to measure if necessary.
- Provide children with a number of squares and rectangles on cm squared paper. Model and practise calculating the perimeter of these simple 2D shapes.
- Point out any misconceptions, such as marking the squares incorrectly, not choosing a suitable starting point or counting too many squares.
- Once children are confident with measuring the perimeter of simple squares and rectangles, challenge them with worded problems such as, **‘My square has sides of 5 cm. What is its perimeter?’** or **‘I have drawn a rectangle with a perimeter of 20 cm. The short sides of my rectangle measure 4 cm. What would a longer side measure?’**
- Introduce children to other simple 2D shapes such as a triangle or rhombus. Discuss how measuring the perimeter may be different to a square or rectangle, model and practise calculating the perimeter of these shapes.