

Perimeter Challenge

Lesson information

Year group: Year 5

Maths focus: Measurement – perimeter

Time: 30–40 mins

Space: Outside or hall

Learning objective

To calculate and create shapes with a given perimeter.

Equipment



50m measuring tape



Skipping ropes /
coloured ropes /
team bands



Beanbags or
floor markers

Set-up

- Split the class into 4 groups and give each group a clear working area.
- Lay the 50m measuring tape out where everyone can access it.
- Each group chooses a skipping rope, a colour rope and team band – then measures it against the tape. These become the group's measuring units.
- Groups use floor spots or beanbags to mark the corners of their shapes.

What to look for

Children can:

- ✓ measure and use a consistent unit accurately
- ✓ calculate perimeter by adding side lengths



Activity 1

1. Give each group a target perimeter for a shape, for example 12m.
2. Groups decide what side lengths they could use.
3. Use their measured rope or band as a guide to mark out each side.
4. Place floor spots or beanbags at the corners.
5. Add the side lengths to check the perimeter.
6. Adjust the shape if needed.
7. Once correct, create a different shape with the same perimeter.

Example: A rectangle with sides 4m, 2m, 4m and 2m has a perimeter of 12m.
 $4 + 2 + 4 + 2 = 12\text{m}$



Questions to ask

- How do you know your perimeter is correct?
- Can you change the shape but keep the same perimeter?
- How has your measuring unit helped you mark the distances?



Activity 2: Add a challenge

- **Same perimeter, different shape:**
Create two different shapes with the same perimeter.
- **Missing side:**
Give children the total perimeter and three side lengths. For example: Perimeter = 18m, Sides = 5m, 4m, 5m and _____. What is the missing side?
- **Design challenge:**
Create a rectangle with a perimeter of 20m. Can you find more than one possible rectangle?



Activity 3

Ask:

- A rectangle has sides of 6m and 4m. What is its perimeter?
- A square has sides of 5m. What is its perimeter?
- A shape has a perimeter of 24m. Three sides total 18m. What is the missing side?
- Can two different shapes have the same perimeter?



Teacher tip:

The ropes and bands may be slightly different lengths, so measure the one your group is using first. Keep using the same measuring unit for that shape.