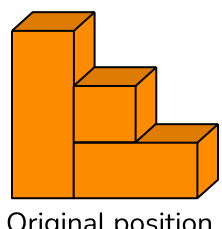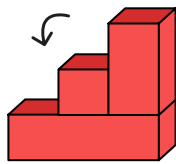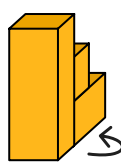# Rotating 3D Shapes

In **Rotating 3D shapes** questions, you will be asked to choose the image that is a rotation of a particular 3D shape.

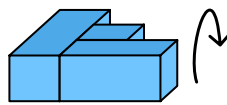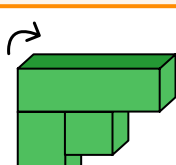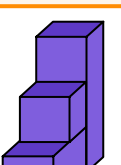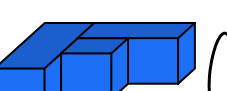Original position

90° anticlockwise

90° to the right

90° backwards

I'm feeling dizzy!

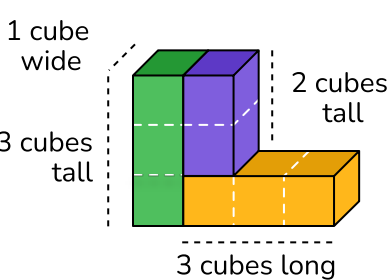90° clockwise

90° to the left

90° forwards

Method

1 Look closely at the **identifying features** of the main 3D shape.
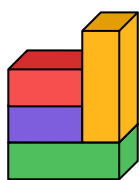
Think about NAPS!
- **Number:** How many blocks are there in total?
- **Angles:** Are any blocks perpendicular to each other? Are any blocks parallel to each other?
- **Position:** Which blocks are next to each other?
- **Size:** How long, tall or wide is each block?
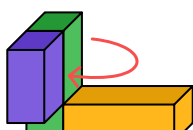
1 cube wide
3 cubes tall
2 cubes tall
3 cubes long

- **Number:** There are three blocks.
- **Angles & Position:** The upright blocks are parallel to each other, and the green and yellow blocks are perpendicular to each other.
- **Size:** See diagram.

2 Work through the answer options **one by one** and **rule out** any answer options that do not match the features you identified.
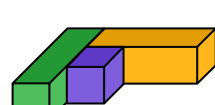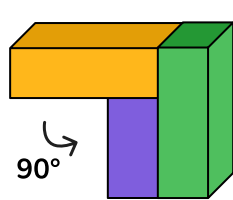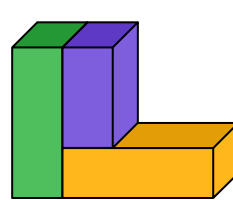
Number	Angle	Position	Size

3 You should be left with one option that shows an exact **rotation** of the original 3D shape!
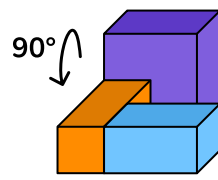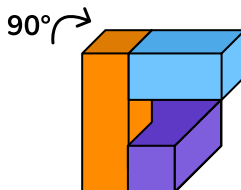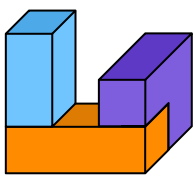
90°

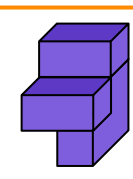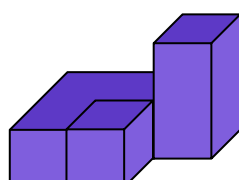**Remember!** All of the blocks should have been rotated the same way.

Top Tips

3D shapes can be rotated **more than once!** They can be rotated in one direction and then in another direction to get the answer.
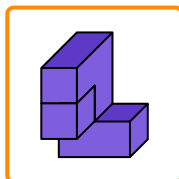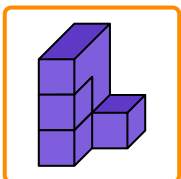
90°

90°

Example Question

Which of the options below is a rotation of this 3D shape?
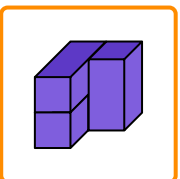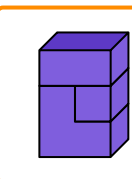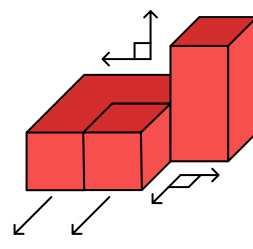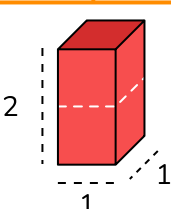
A   B   C   D   E

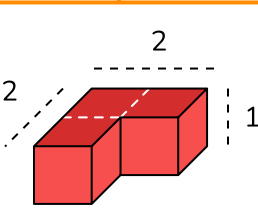**1** Identify the main **features of the 3D shape**.

- **Number:** There are three blocks in total.
- **Angle:** See diagram.
- **Position:** The cube is tucked inside the L-shape. The cuboid extends from one face of the L-shape.
- **Size:** There is a 2x1 cuboid (block 1), a 2x2 L-shape (block 2) and a 1x1 cube (block 3).
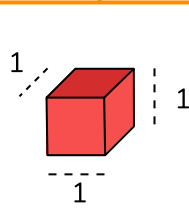
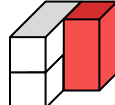| Block 1	Block 2	Block 3
2 ... 1	2 ... 2 ... 1	1 ... 1 ... 1

2 Use **NAPS** - number, angle, position, size - to **rule out answer options**.

We can rule out...
- **A** because block 3 has been replaced by a **longer** block.
- **C** because there are **four** blocks instead of three.
- **E** because block 1 is **positioned incorrectly**.

D is a **red herring!** It looks like it could be the correct answer, but if you look closely you can see that block 1 has not been rotated!

B is the correct answer! It is a 90° clockwise rotation of the 3D shape.

90°