Assessment guidance: For pupils to meet this criterion, they need to demonstrate mastery of the structures. Correct calculation of the solutions to calculations is not required (this is assessed in **1NF–1**).

Where a question requires pupils to explain their reasoning, this should be done verbally.

1G–1 Recognise common 2D and 3D shapes

Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.

1G–1 Teaching guidance

Pupils need a lot of experience in exploring and discussing common 2D and 3D shapes. In the process, they should learn to recognise and name, at a minimum:

- rectangles (including squares), circles, and triangles
- cuboids (including cubes), cylinders, spheres and pyramids

Pupils need to be able to recognise common shapes when they are presented in a variety of orientations and sizes and relative proportions, including large shapes outside the classroom (such as a rectangle marked on the playground or a circle on a netball court). Pupils should be able to describe, using informal language (for example, “long and thin”), the differences between non-similar examples of the same shapes, and recognise that these are still examples of the given shape.

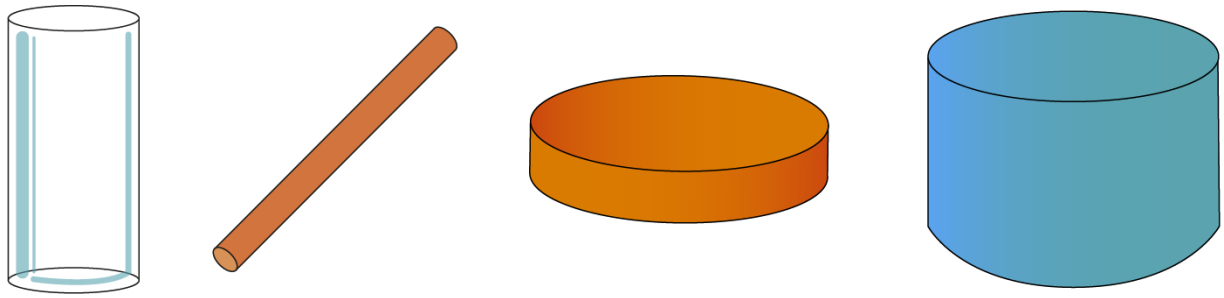

Figure 35: non-similar cylinders

Pupils should practise distinguishing a given named shape type from plausible distractors. These activities should involve exploring shapes (for example, shapes cut from card) rather than only looking at pictures.

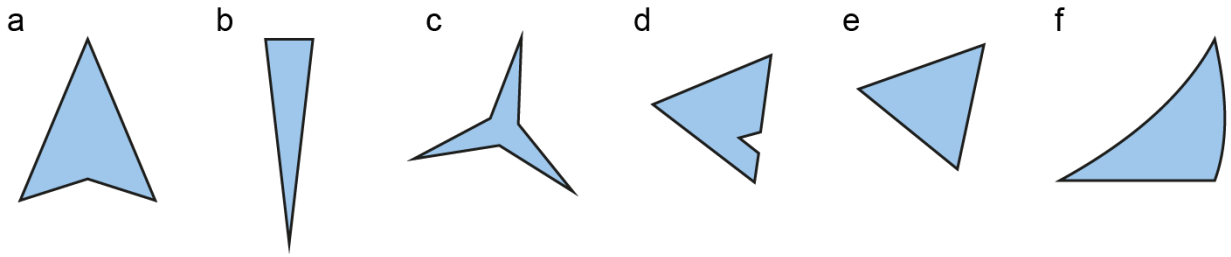

Figure 36: distinguishing triangles from plausible distractors

Language focus

Shape a: “This is not a triangle because it has 4 sides.”

Shape b or e: “This is a triangle because it has 3 straight sides.”

Shape c or d: “This is not a triangle because it has 6 sides.”

Shape f: “This is not a triangle because some sides are curved.”

Making connections

Categorising examples and non-examples (for example, determining which shapes are triangles and which are not) is an important mathematical skill. Pupils should be developing this skill here and in other contexts, such as in 1AS–1, where they categorise numbers according to whether they are even or not even.

1G–1 Example assessment questions

1. Task: Lay out a selection of 3D shapes, then ask “Can you find 3 different cuboids?”
2. Task: Lay out a selection of 2D shapes that include triangles and plausible distractors, and other 2D shapes, then instruct pupils to choose 3 shapes as follows:
   - a triangle
   - a shape that reminds you of a triangle but is not one
   - a shape which is nothing like a triangle
3. Task: Lay out a selection of shapes, hold up one of them, and ask:
   - “I wonder whether this shape is a rectangle. What do you think?”
   - “Can you find a shape which is a rectangle?” (if the original shape is not a rectangle)

4. Task: Lay out a selection of shapes, hold up a cylinder, and instruct pupils to find another shape which “ is a bit like this one”. Ask pupils to explain their reasoning.

Assessment guidance: Practical work, carried out in small groups, provides the most reliable method of assessing whether pupils have met this criterion. Teachers should assess pupils based, not just on their answers, but on the reasoning they use to reach their answers, for example, in question 4, a pupil may choose a cone because “it has a circle too”. When selecting shapes, careful attention should be paid to providing plausible distractors to allow assessment of reasoning. Pupils may use informal language, especially when discussing plausible distractors, for example, the shape presented in question 3 could be a parallelogram, which pupils could describe as being “a bit like a rectangle, but squashed.” Ask pupils to explain why they chose that one.

1G–2 Compose 2D and 3D shapes from smaller shapes

Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.

1G–2 Teaching guidance

The ability to compose and decompose shapes, and see shapes within shape, is a skill which runs through to key stage 3 and key stage 4, and beyond. In year 1, it is vital that pupils work practically, exploring shapes (for example, shapes cut from card, pattern blocks and tangrams) and putting them together to make new shapes.

Pupils must be able to arrange 2D shapes to match an example compound shape. To begin with, the constituent shapes in a given example image should be the same size and colour as the actual shapes that pupils are using. This allows pupils to begin by laying the pieces over the example image, rotating individual pieces to match the exemplars. By the end of year 1, though, pupils should be able to copy a pattern block picture, and make a good attempt at copying a tangram picture, without overlaying the pieces on the example.

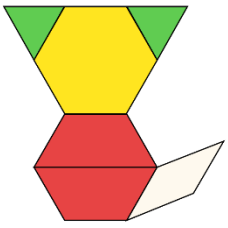

Figure 37: example pattern block picture

Figure 38: example tangram picture