

The Pantheon in Rome



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Roman Baths

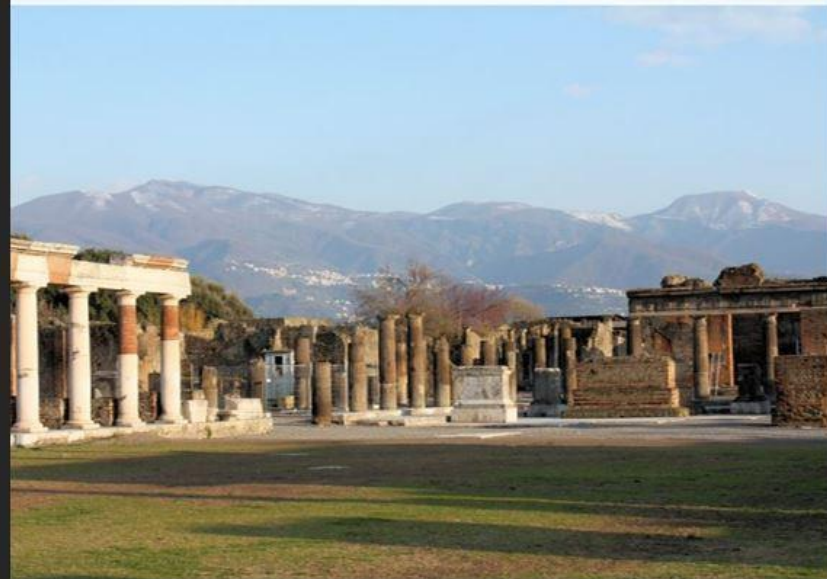
In the city of Bath



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Pompeii

Near Naples, Italy



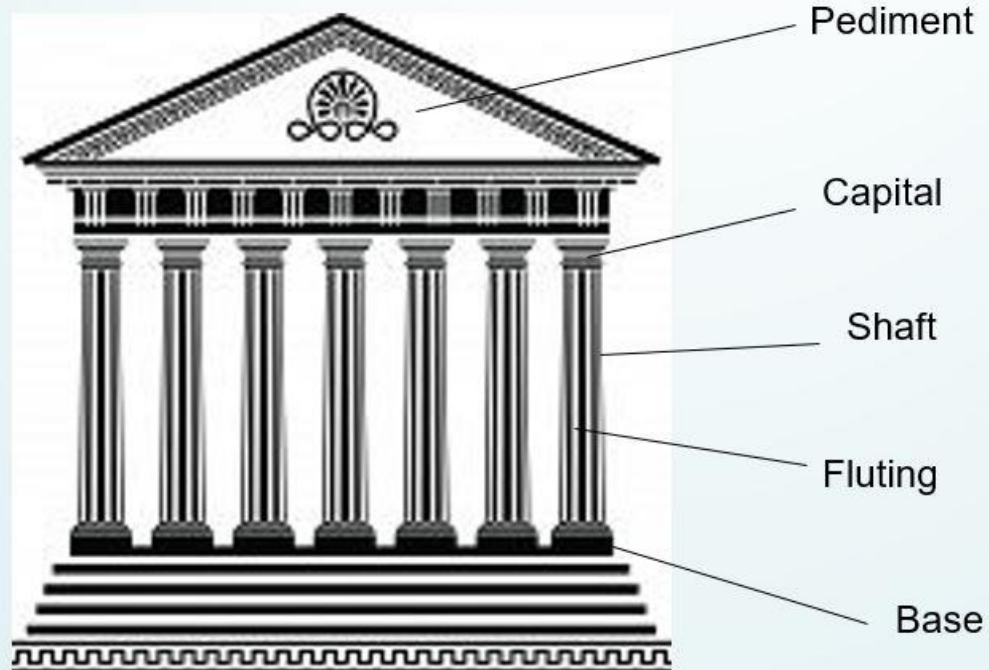
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A Roman temple in Nîmes, France



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Roman Architecture and Design



Roman columns are made up of 3 sections; the base, the shaft and the capital. They are often carved with attractive designs. The shafts of Roman columns are sometimes decorated with vertical grooves or bands. This is called fluting. Many Roman buildings have a triangular shaped stone structure resting on columns. This is called a pediment.

Which shape column is the strongest?



We want to draw a straight line down the paper 24cm from the left hand edge

The line needs to be parallel with the vertical edges of the paper

24 cm

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To make the line parallel, you need to measure 24cm from the left hand side and make a small dot.

24cm

Do this in 2 places

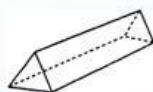
24cm

Now use your ruler to draw a line that cuts through both your dots.

This creates a large section and a small section.

This large section will be folded to make the prism or it could be curved right around to make a cylinder.

This small section will be glued and attached to the other end to close up the column.



A triangular prism will need 3 sections.

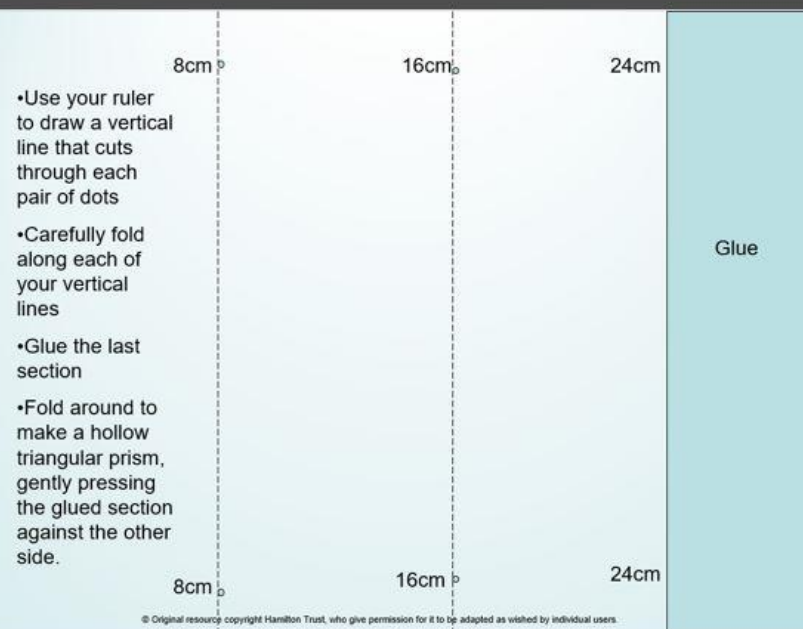
Remember the whole length is 24cm so if you divide that into 3 equal sections you will have 8cm in each section.

$$3 \times 8 = 24$$

You will need to measure from the left hand side and draw a dot every 8cm.

Do this twice, once near the top and again near the bottom

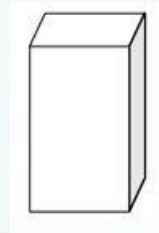
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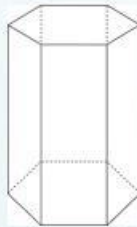
To make other prisms

Think how many sections you will need to divide the length into. Remember there are 24cm to split into equal sections.

Cuboid



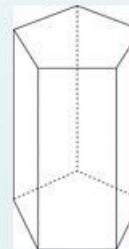
Hexagonal prism



Octagonal prism



If you want make a **pentagonal prism**, make your main length 25cm instead of 24cm. You will find it easier to split it into 5 equal sections!



You could trim a little off this section for prisms with 5 or more sides (so that the glued tab only overlaps one section).

Task



- Work together to make 3 different pairs of columns
- Test the strength of each pair according to your class agreed fair test rules (e.g. you may have agreed to keep the columns the same distance apart or to add your weights 100g at a time or only put weights between the columns not directly over them)
- Record the maximum weight each pair could hold before they collapsed.

Decide which shape of columns you want to test. You don't have to use weight; you can choose any objects to test the strength of the column e.g. cubes, figures etc. Just make sure you use the same each time to make it a fair test. Once you have made them, use this table (or draw your own) to record your findings.

Shape of column	Number of weights held