



MATHEMATICS



N.S. Yr. 2 P.83

Make shapes and describe their features

Equipment

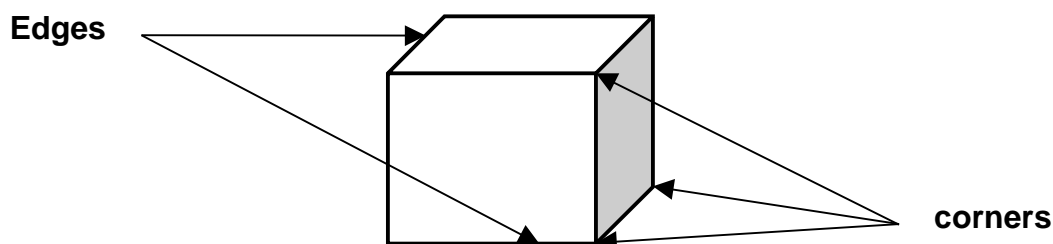
Paper, pencil, ruler
Pinboards and elastic bands
Cubes, straws, construction kits/materials

MathSphere

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Concepts

Children need to spend time handling 3-D shapes and should be familiar with the terms 'edge' and 'corner'.



A range of boxes used for packaging such as chocolate boxes, tissue boxes etc, may be used to make models, as well as straws and pipe cleaners (used to join the ends) or kits designed for the purpose.

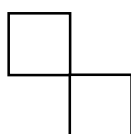
In this way, they will be able to see how many of each are needed to make a 3-D shape.

Many shapes can be made from cubes. In year 2 keeping to a small number of cubes, eg four, and exploring all the possibilities, is better than using a much larger number in a more random way.

A pinboard is very useful for exploring all the possible four and five sided shapes. This may be simply made by nailing panel pins or small nails into a piece of plywood approximately $24\text{cm} \times 24\text{cm}$.

Cut out the plywood and mark a grid of lines at 2cm intervals in both directions across the plywood. Tap in the pins at the points where the lines of the grid meet. Leave enough of the pins protruding to accommodate elastic bands.

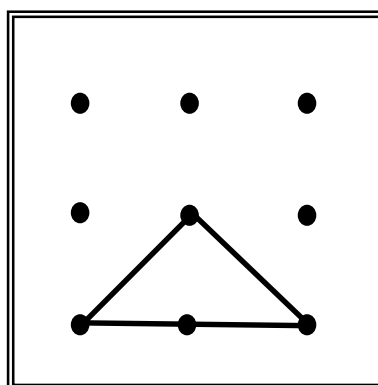
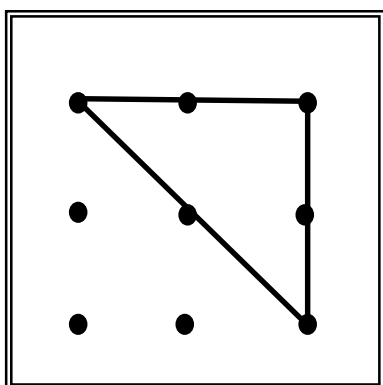
When exploring 2D shapes made up of squares, it is worth discussing what counts as a shape eg does joining two squares at the corner make a shape? What would happen if you cut it out?..... etc



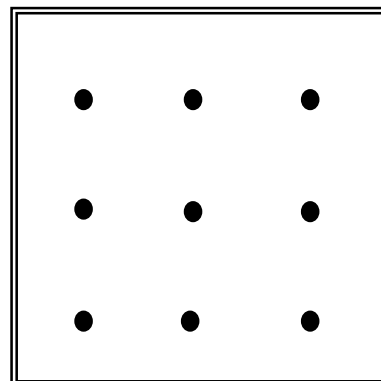
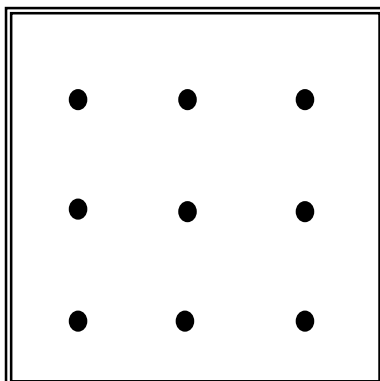
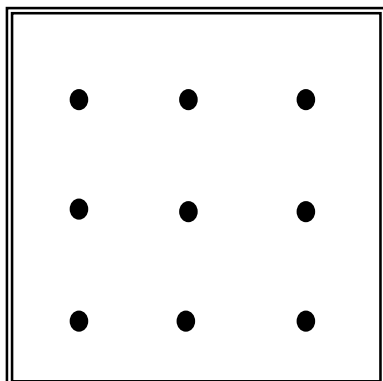
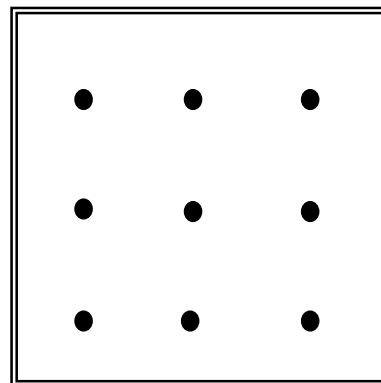
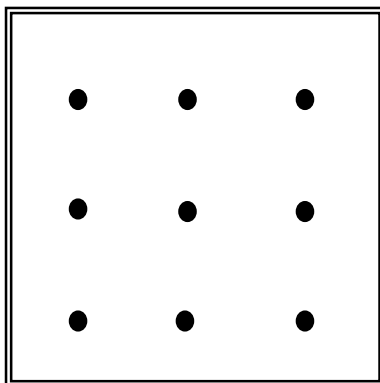
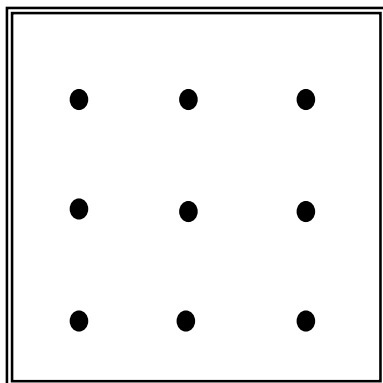
Making shapes using a pinboard

Three sided shapes

Here are two triangles. Use a pinboard and elastic bands to make them.



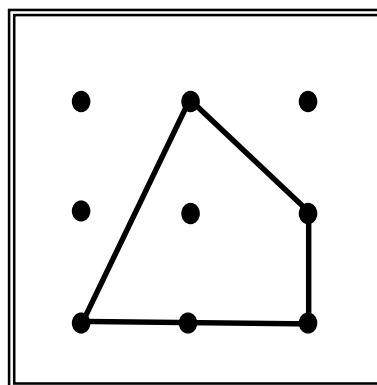
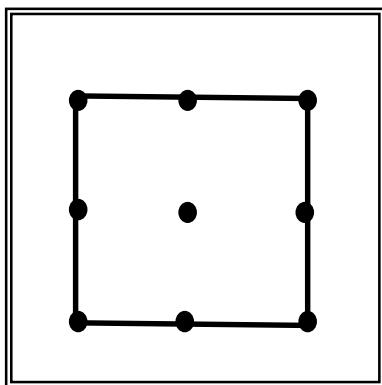
Now make some triangles of your own.
Use a ruler to draw them on the pinboards below.



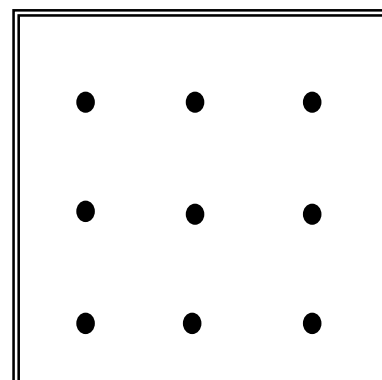
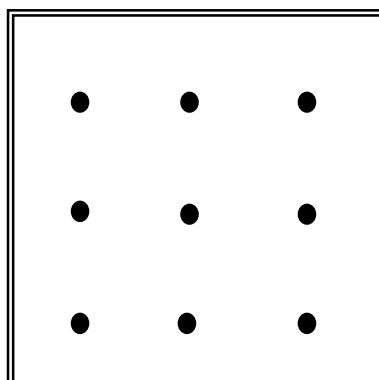
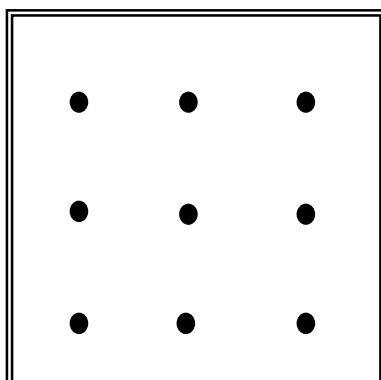
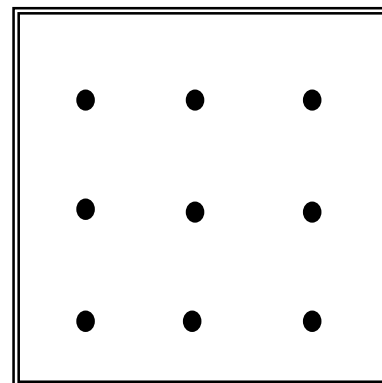
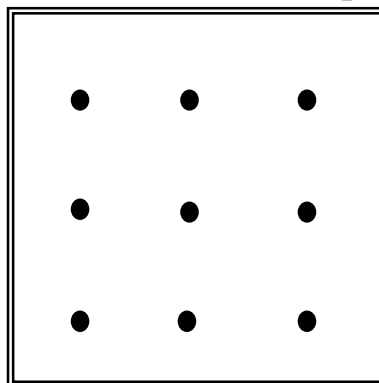
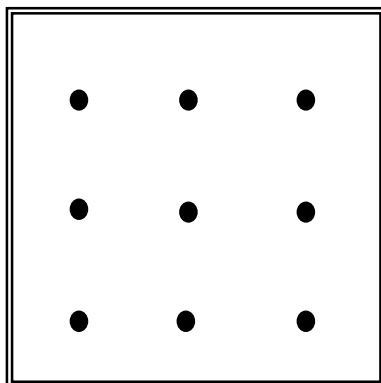
Making shapes using a pinboard

Four sided shapes

Here are two four sided shapes.
Use a pinboard and elastic bands to make them.



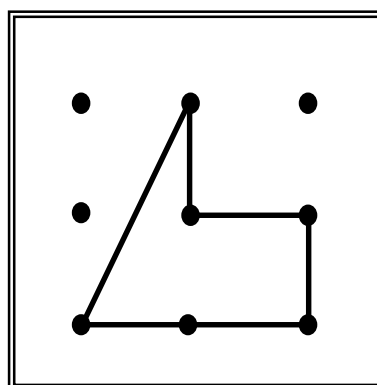
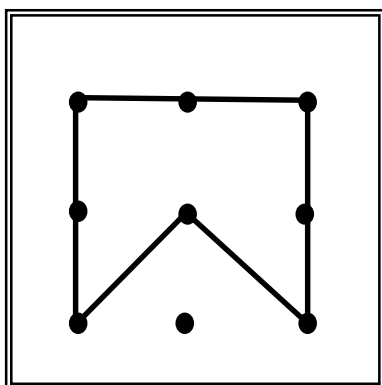
Now make some four sided shapes of your own.
Use a ruler to draw them on the pinboards below.



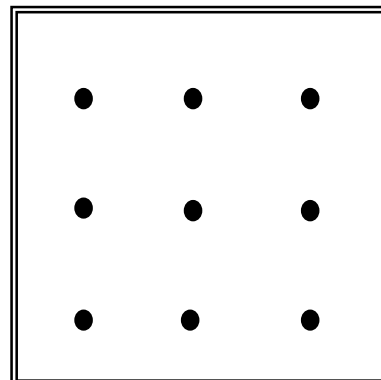
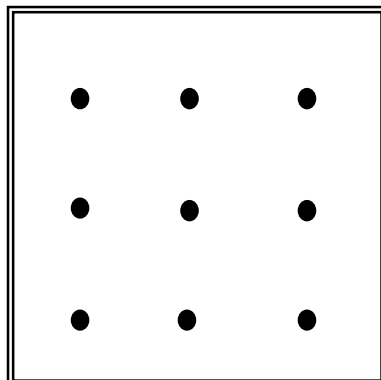
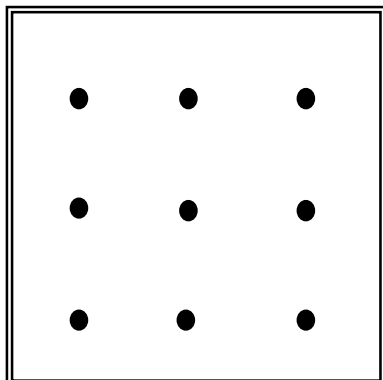
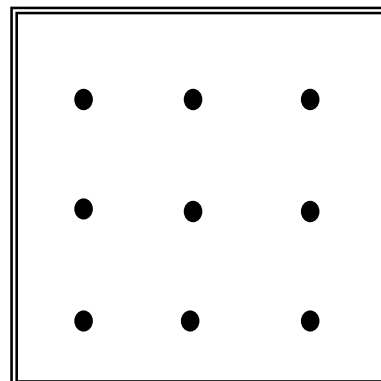
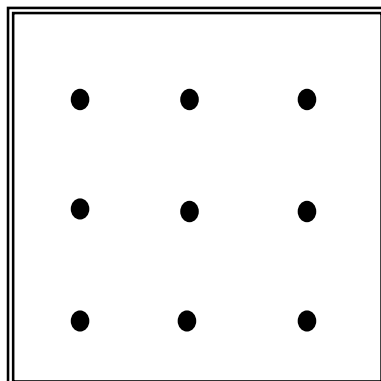
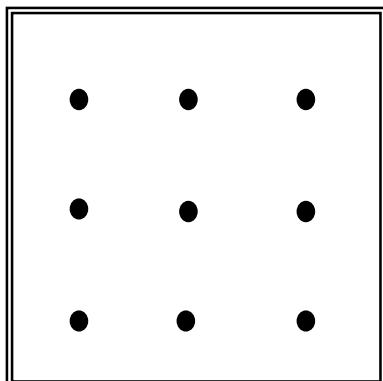
Making shapes using a pinboard

Five sided shapes

Here are two five sided shapes.
Use a pinboard and elastic bands to make them.



Now make some five sided shapes of your own.
Use a ruler to draw them on the pinboards below.



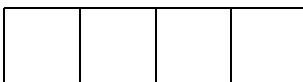


Shapes from squares

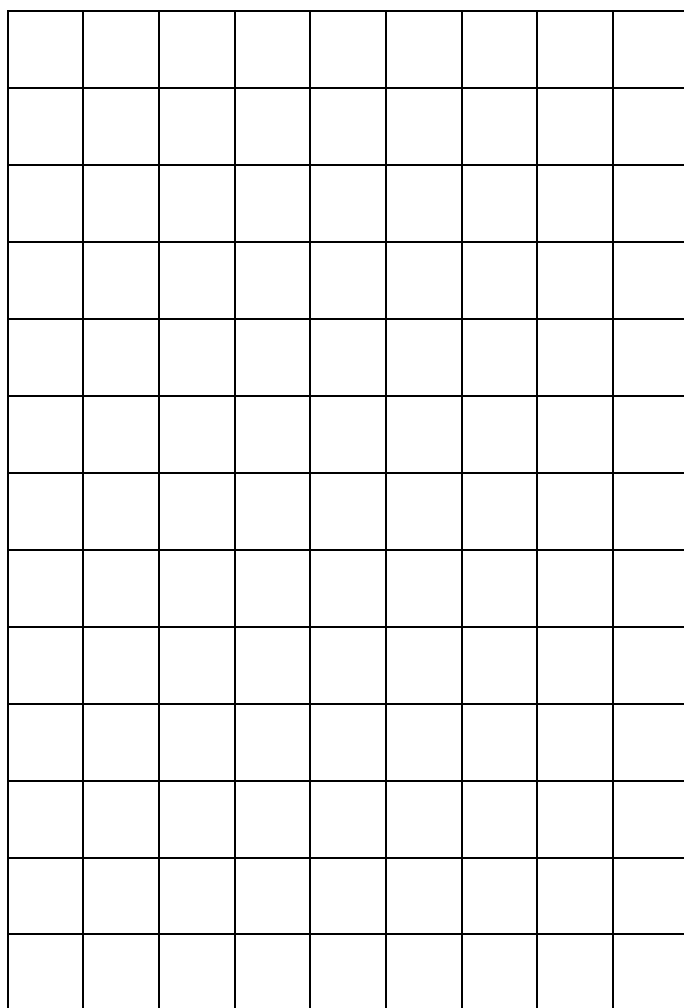
You need squared or dotty paper, plus a ruler for this page... and it helps if you are standing on your head!

How many shapes can you make by joining 4 squares?

Here is one:



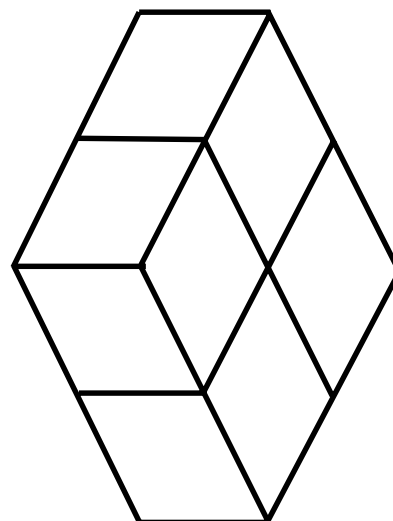
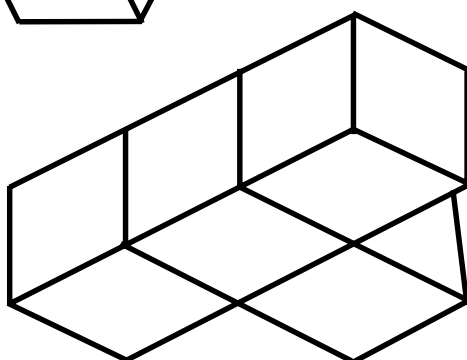
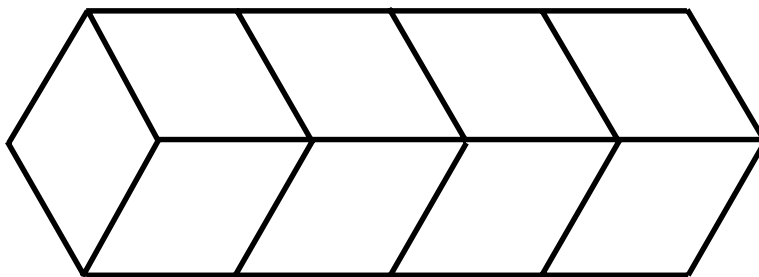
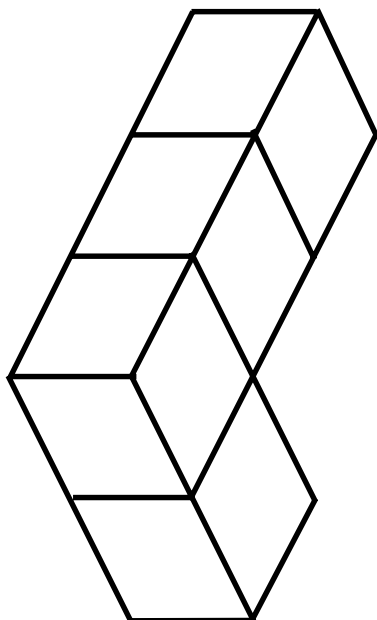
Draw each one and then count the number of edges.



Number of edges

Making shapes with four cubes

You need four cubes for this work.
With your cubes try to make each of
the shapes below.

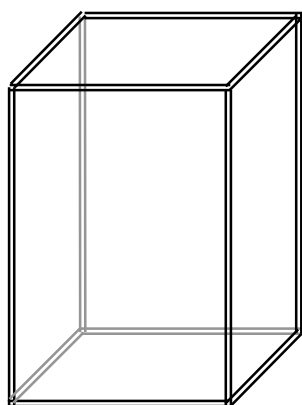


Are there any other shapes you can make with four cubes?

Making skeleton shapes

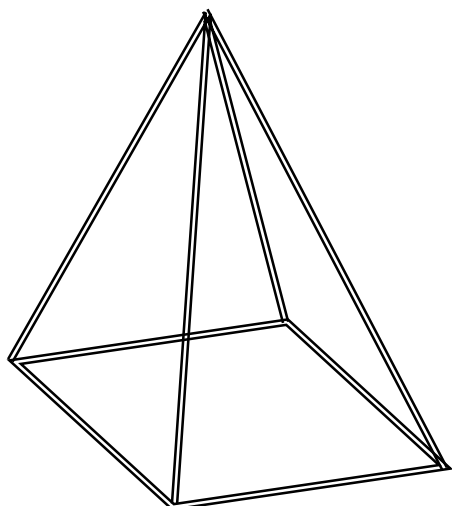
You need art straws, or rods from a construction kit.

Try to make these skeleton shapes:



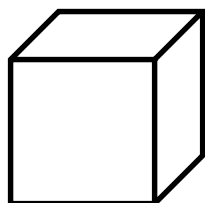
How many edges has your shape?

How many corners has your shape?

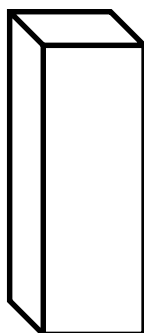


How many edges has your shape?

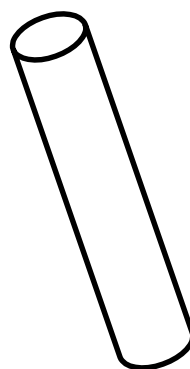
How many corners has your shape?

Making 3D shapes

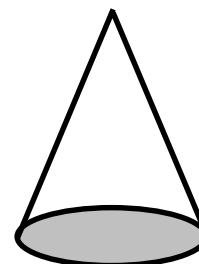
cube



cuboid

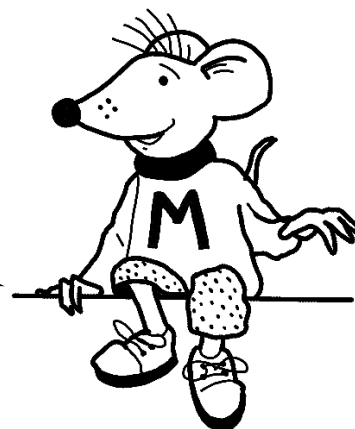


cylinder



cone

You need to find
some of each of the
shapes above.

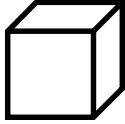
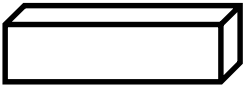




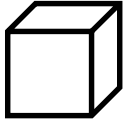
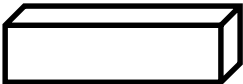

Build models using these shapes. If you have enough, use more than one of each shape.

Record how many of each shape you have used.

You can use the table on the next page.

Table to show how many of each shape I have used

Shapes		Number used
cube		
cuboid		
cylinder		
cone		

Shapes		Number used
cube		
cuboid		
cylinder		
cone	