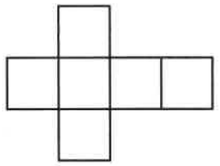
BUILDING 3-D SHAPES 126

TARGET **To make nets for 3-D shapes.**

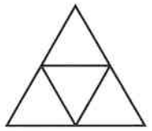
A net is a 2-D representation of a 3-D shape. It shows the faces of the 3-D shape arranged so that they can be folded to build the shape.

The simplest nets to build are those of 3-D shapes with regular faces.



A net for a cube is easily constructed using square paper.

Similarly, triangular paper can be used to make a net for a tetrahedron.



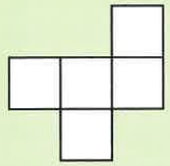
When constructing nets for 3-D shapes which do not have regular faces you need to be very careful that your shape will fit together precisely.

A good way to understand how to draw nets is to unfold actual boxes, such as cereal boxes or Toblerone packets, and study which lengths of the net match each other.

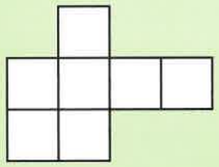
A

All lengths are in cm.

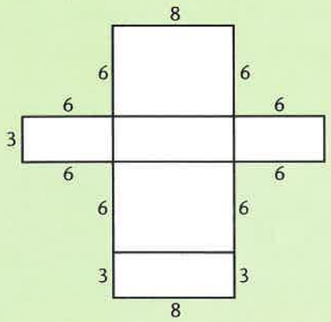
1. Copy this net onto squared paper. Cut it out and fold it to make an open cube.



2. Copy this net. Cut it out. Cut off one square and fold it to make a net for a closed cube.

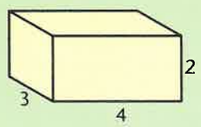


3. Copy this net onto square paper. Cut it out and make the cuboid.



4. Make a net for a closed cube with edges 2 cm long.

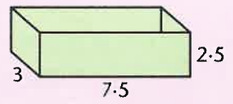
5. Make a net for this cuboid.



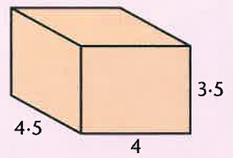
B

All lengths are in cm.

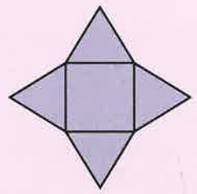
1. Make a net for this open cuboid.



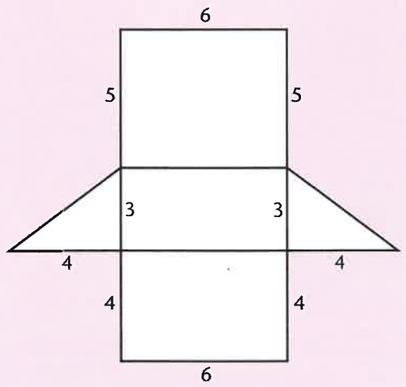
2. Make a net for this closed cuboid.



3. Copy this net onto squared paper. Cut it out and make the pyramid.



4. Copy this net onto squared paper. Cut it out and make the triangular based prism.

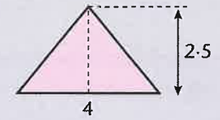


5. There are 11 different nets for a closed cube. Can you find them all?

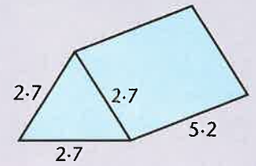
C

All lengths are in cm.

1. Make a net for a square based pyramid with a base area of 16 cm^2 and a height of 2·5 cm for each triangular face.



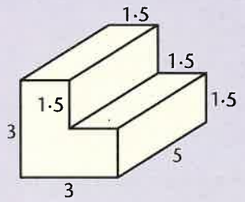
2. Make a net for this triangular based prism. Cut it out and build the shape.



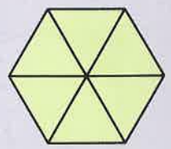
3. A prism is 4·9 cm long. Its end face is a regular hexagon with 1·6 cm sides. Make a net for the prism. Cut it out and build the shape.

4. Make a net for a tetrahedron with edges of 3·4 cm.

5. Make a net for this hexagonal based prism. Cut it out and make the prism.



6. Copy this hexagon. Cut it out. Cut off two triangles to make a net for a tetrahedron.



7. Work systematically to find all the possible nets for a tetrahedron.