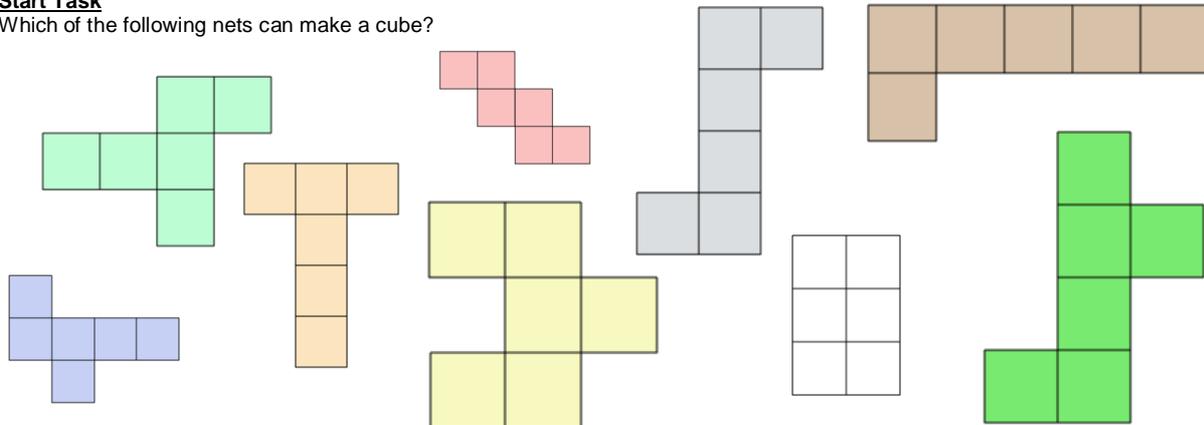# NETS OF CUBOIDS

Objectives
You MUST: *Draw and interpret the net of a cuboid*
You COULD: *Construct nets of compound shapes made from cuboids*

Start Task
Which of the following nets can make a cube?

Task A
On squared paper, draw a net for each of the following, using the dimensions given:
1. Cube with lengths of 2cm
2. Cube with lengths of 6cm
3. Cube with lengths of 4cm
4. Cuboid with length 2cm, width 5cm and height 3cm
5. Cuboid with length 7cm, height 4cm and width 4cm
6. Cube with lengths of 30mm
7. Cuboid with height 40mm, length 50mm and width 80mm.
8. Cube with a volume of 125cm³.

Task B
Write down the volume in cm³ of each of the cuboids in task A.

On squared paper, draw nets of cuboids with the following volumes:
1. 60cm³
2. 100cm³
3. 48cm³
4. 150cm³
5. 160cm³
6. 196cm³
7. 98cm³
8. 104cm³
9. 70cm³
10. 91cm³

Task C
1. Using the valid nets in the start task as a starting point, draw as many different cube nets as you can.

2. Now discount any nets you have drawn in question 1 that are reflections or rotations of another of the nets. How many different cube nets have you found?

3. How many **different** nets can you find for a 2×1×1 cuboid? (Discount any reflections or rotations as in question 2)

4. How many **different** nets can you find for a 2×2×1 cuboid?

Making a Compound Shape
Copy out the following net onto squared paper, using the scale given:
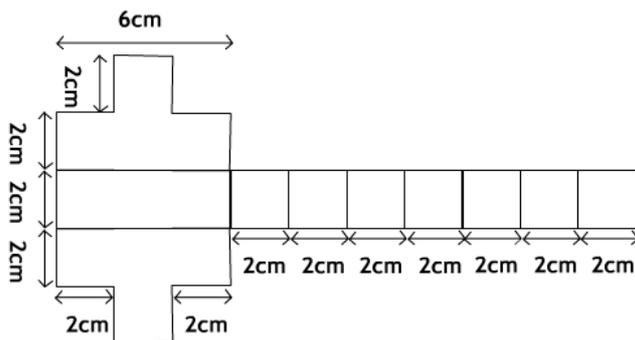
1. Fold up the net to find the finished solid.
2. How many faces does the solid have?
3. How many vertices (corners) does the solid have?
4. What is the volume of the finished solid?
5. What is the surface area of the solid?
6. How many 1×1×1cm cubes would fit inside the solid?
7. How many 2×2×2cm cubes would fit inside solid?
8. How many 1×1×2cm cuboids would fit inside the solid?

Extension
Draw a scale net that could be used to create each of the following solid shapes. Each small cube is has lengths of 1cm.

1.   2.   3.
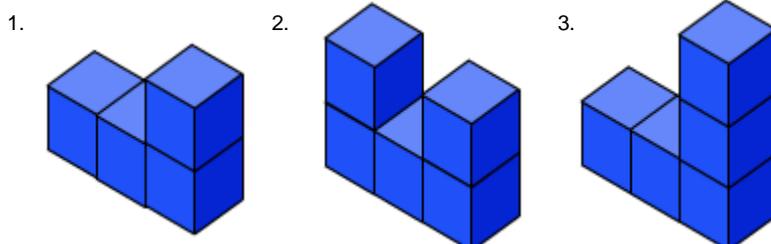
Puzzle
Using all the different valid cube nets from task C question 2, can you arrange all the nets without overlapping to form a large rectangle? What are the dimensions of the rectangle?