

Year 6 Maths Activity Mat: 3D Shapes

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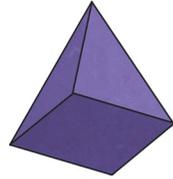
Section 1: Cubes

How many different shapes can be made with 4 cubes. Draw the shapes.

You may need another piece of paper.

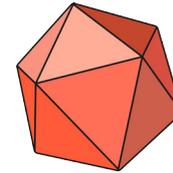
Section 3: Pyramids

Make a net for a square-based pyramid.



Section 5: Hedrons

A particular icosahedron is made from 20 equilateral triangles, where the length of each edge is 4cm. What is the surface area of the icosahedron? Use what you know about the area of a triangle to help.



Section 4: Prisms

Create a table to record the number of faces, edges and vertices in different prisms.

Section 2: Spheres

Measure the diameter and circumference of some spheres. One method would be to wrap a strip of paper around a ball, mark it and then unfold to measure the circumference.

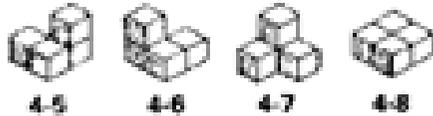
Section 6: Cylinders

Collect some cylinders. Order them by volume. Check by measuring the radius of the top (r) and the height (h). Use the formula $r^2 \times h$ to be able to compare the volume. (This is not the proper formula, but it gives the required answer.)

Section 1: Cubes

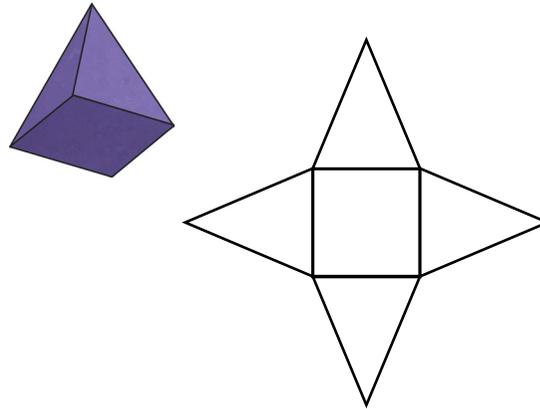
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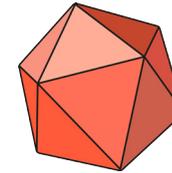
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$$\text{The area of the triangle} = \frac{(4 \times 3.465)}{2}$$

138.56 cm² (allow measurement error)

Section 4: Prisms

Create a table to record the number of faces, edges and vertices in different prisms.

end shape	faces	edges	vertices
triangle	5	9	6
square	6	12	8
pentagon	7	15	10
hexagon	8	18	12
octagon	10	24	16

Section 2: Spheres

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Section 6: Cylinders

Collect some cylinders. Order them by volume. Check by measuring the radius of the top (r) and the height (h). Use the formula $\pi r^2 \times h$ to be able to compare the volume. (This is not the proper formula, but it gives the required answer.)