Nets

## Annotation

Harry understands and can draw a net of a pyramid and a prism and can articulate the difference between them. He uses mathematical terms accurately and can name the prism, pyramid, and triangles used. He can use a ruler and compass to work out and draw by hand accurate representations of nets, including equal distances from vertices, demonstrating a high level of precision.
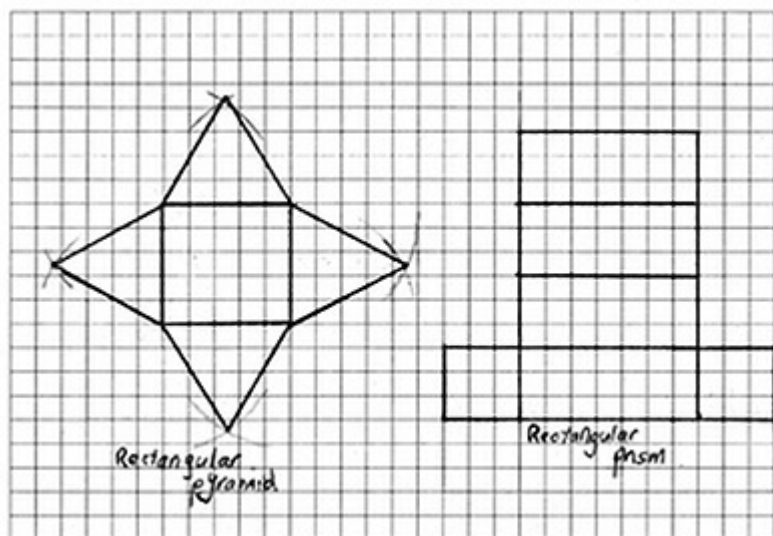
Problem: Nets

The teacher shows the student these shapes and poses this problem:
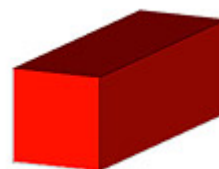
Can you draw a net for each of these solids?

Student response

Harry correctly drew these nets.

Teacher: What do you know that helped you?

Harry: The one on the left is a rectangular pyramid. The triangular faces are all the same size, and are isosceles triangles. The two 'free' sides of the triangle need to be longer than half the diagonal of the square otherwise when you fold them in, they won't meet, or the pyramid will be too flat.
The red prism is named after the shape of its ends, which are parallel. It's a rectangular prism.

Teacher: Tell me how you made the nets.

Harry: I started by drawing the base of the rectangular pyramid and then attached the sides. I used a compass and set it to a big enough length — I drew the arcs from each corner without adjusting the compass. Then I drew lines from each corner to where the arcs had crossed, making isosceles triangles on each edge of the rectangle. When the triangular sides fold up they will join the top vertex, and that will be a pyramid.

The sides of the prisms have to be rectangles. To draw the net for the prism I drew one rectangular face and attached the end faces that are square, to the left and right. I drew three other rectangular faces and I know I need to cut flaps on the net so you would be able to stick it together.