**Creating Nets and Patterns**

**1. Nets**

A net is a 2-D representation of a 3-D figure that results when the figure is unfolded. When unfolded, the original figure becomes a flat shape where all of the edges meet to keep the net as one piece.

One example of a net arises from “unfolding” a soup can. If you flipped up the two circular tops and then cut down the side and flattened it out, this would be the resulting net:

Given the following net, think of what it would form if it was folded up into a 3-D figure. Sketch the figure.

Determine another example of a net. Name the figure and then draw the corresponding net in the space below.

**2. Patterns**

A pattern is another 2-D representation of a 3-D figure. It results when the figure is separated into two or more individual shapes.

One example of a pattern arises when you take a piece of clothing apart at the seams. Consider a basic skirt. If you were to separate it into different pieces, this would be the resulting pattern, representing the front and the back:

In patterns, you often have to account for seams, or flaps, that allow for the separate pieces to be attached together. Where would the seams have to be in skirt on the previous page?

Determine another example of a pattern. Name the figure and then draw the corresponding net in the space below.

**3. Nets vs. Patterns**

Consider a basic cereal box. Sketch a net for the cereal box on graph paper. Sketch a pattern for the cereal box on graph paper. Include approximate dimensions and scales.

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Does a net or a pattern make more sense in this situation?

For Questions 1 and 2, use the graph paper below.

1. Draw the net of a triangular prism with triangle side lengths 10cm and prism height 30cm. Use (and indicate an appropriate scale)

2. Create a pattern for a cube with all dimensions 5 cm. Allow for flaps to join the parts together. Assemble the pattern to form the cube.

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3. How would the net of a box with a closed top differ from the net of the same box with an open top? Sketch the net for each case to demonstrate the difference. (No need to use graph paper).