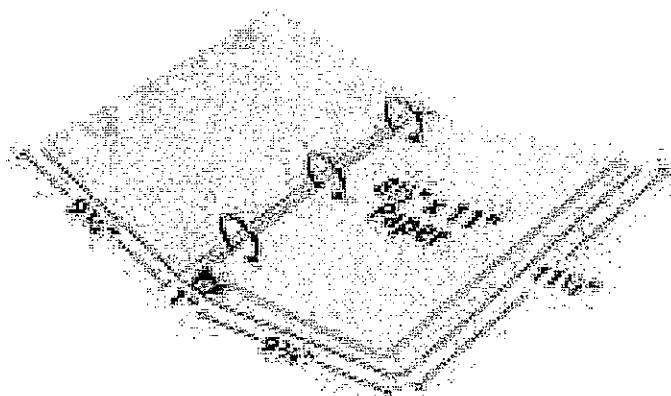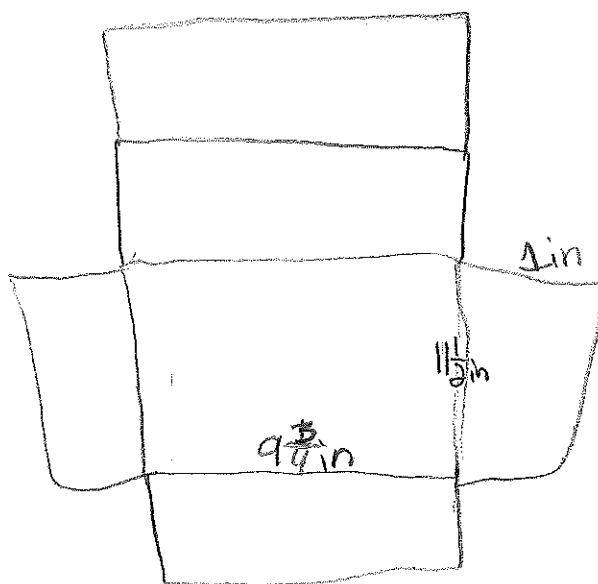## STUDENT MATERIALS

In a Bind for Boxes

School supplies are in high demand right now, but not all the packaging has been designed. As a packaging engineer, you have been hired to create a box to ship individual binders. The dimensions for the binders are below.

Dimensions of binder: $9\frac{3}{4}$ inches by 1 inch by $11\frac{1}{2}$ inches

Task 1.

Draw a net for a rectangular prism that will fit the binder. The dimensions for the binder are above, so be sure to label the sides. Remember a net must be in one piece and be able to fold into a three-dimensional figure.

Task 2

Draw the 3-dimensional diagram of the box you created above. Be sure to label side lengths.

[handwritten box diagram with labels 2.75 in, 10.5 in, 2.75 in]

Task 3

Determine how much cardboard would be needed for the box you designed in square inches.

[handwritten calculations]

(266.75 in²)

Task 4

Now, design another box using a different 3-dimensional shape. Be sure to create the box for the same binder pictured in Task 1. Draw and label the diagram.

[handwritten triangular prism diagram with labels 46.375, 4.00, 8, 4.7875 in, 1 in]

Task 5

How many square inches of cardboard would be needed for the Task 4 design? Show your work.

94 in²

Work is in Task 4

Task 6

Which of your two boxes should the company choose to send the binders? Why? Explain your reasoning.

My Second Box because it is Better than the First Box.