Name: _____ Date: _____

BLM 1–14

Chapter 1 Math Link: Wrap It Up!

This worksheet will help you with the Wrap It Up! on page 39.

1. Refer back to your Math Links work for sections 1.1, 1.2, and 1.3. Decide which product—notepad or playing cards—you wish to work on. Using the sample designs, those that you created, or new designs that you have discovered, develop a project and presentation that includes the following:

a) A choice of notepad or playing cards

b) A design for each card or piece of paper. The design must have at least one line of symmetry. For example, you may use a design that has a vertical, horizontal, or oblique line of symmetry as in section 1.1.

c) A design for the cover of a box to hold your product. The design must include rotational symmetry and may include line symmetry. You may use an example or your original design from section 1.2.

d) Imagine your product is 9.3 cm by 9.3 cm by 6 cm. What dimensions would you recommend for a box that would hold your product? What is the surface area of the box?

e) Using thinking similar to the section 1.3 Math Link, decide on the dimensions of your product: length, width, and depth. Decide on the dimensions of the box that will hold your product. Calculate the surface area of the box.

2. Suppose you have 12 pads of sticky notes, as in section 1.3, and decide to place these in stacks of six, side by side. Complete the following to calculate the surface area of the new stack.

Each pad is 9.3 cm × 9.3 cm × 1 cm deep, and the dimensions of each stack of six are 9.3 cm × 9.3 cm × 6 cm.

The dimensions of two stacks put side by side are _____ cm long × _____ cm wide × 6 cm high.

Follow the steps to calculate the surface area of the two stacks side by side:

Surface area = 2(area of two note sheets) + (perimeter of two note sheets) × (height of the stack)

Area of one sheet = _____ × _____ = _____ cm²

Perimeter of one sheet = 2 × _____ + 2 × _____ = _____ cm

Height of the stack = 6 cm

Surface area = 2 × (_____) + (_____ × _____)

= _____ + _____

= _____ cm²

3. Suppose that you distribute a package containing six boxes of the product that you designed.

a) What is the total surface area of six of these products?

b) If you place these products in two piles of three next to each other, what is the surface area? How does this compare to the surface area of six individual products?

c) If you place these products in piles of two next to each other, what is the surface area? How does this compare to the surface area calculated in a) and b)?

d) Use the information from a), b), and c) to determine how to package your product to have the smallest surface area. Explain your choice.