

Family Letter

Dear Parent or Guardian:

People who work in industries such as art, construction, and science study three-dimensional figures. We encounter three-dimensional figures everywhere, from the containers we use to the furniture we have in our homes. Knowing how to calculate surface area and volume helps us make decisions about how much material we need to cover and fill things.

In **Chapter 12, Geometry: Measuring Three-Dimensional Figures**, your child will learn how to draw three-dimensional figures, solve problems by making a model, find the volume and surface area of rectangular prisms and cylinders, and determine and apply significant digits. In the study of this chapter, your child will complete a variety of daily classroom assignments and activities and possibly produce a chapter project.

By signing this letter and returning it with your child, you agree to encourage your child by getting involved. Enclosed is an activity you can do with your child that also relates the math we will be learning in Chapter 12 to the real world. You may also wish to log on to the **Online Study Tools** for self-check quizzes, Parent and Student Study Guide pages, and other study help at **www.msmath2.net**. If you have any questions or comments, feel free to contact me at school.

Sincerely,

Signature of Parent or Guardian _____ DATE _____

Family Activity

Gift Wrapping

Knowing how to calculate surface area can help you determine the minimum amount of paper you can use to wrap a present. Work with a family member to answer the following questions. You will need a small box and some wrapping paper. If you do not have wrapping paper, you can substitute newspaper or paper bags.

1. Select a box that you might use to hold a small gift. Imagine that you cut the box along its edges, open it up, and lay it flat. The result is a two-dimensional figure called a *net*. In the space below, draw a net that represents the box you have chosen.
2. Measure the height, length, and width of the box. Record the measurements in the space below.
3. Calculate the surface area of the box. Use the result to predict the least amount of paper you need to wrap the box. (Recall that the surface area = $2\ell w + 2\ell h + 2wh$.)
4. Cut the wrapping paper so that the surface area of the paper is equal to the surface area of the box. (Example: If the surface area is 48 square inches, then you might cut a piece of paper that is 6 inches long and 8 inches wide.)
5. Try to wrap the box using the paper you cut out. Were you able to wrap the box? If not, describe the problem.
6. Repeat Steps 4–5 until you successfully wrap the box. What method helped you to wrap the box successfully? Why?