Refitting a Bathroom

You will need access to a computer and to go to www.achildsguideto.com → Maths → Problem Solving → Bathroom Investigation.

Learning Objective

In this exercise, you are learning how:

- To solve a real life problem involving mathematical calculations;
- To consider decimals in the context of area and money;
- To convert one decimal unit to another.

Scenario

After a major leak, you have decided that it is time to get a new bathroom suite. You have decided to go to B & Q and to do the work yourself in order to save money on labour costs (paying someone to do the work for you). You have measured up your bathroom and have drawn up a plan. You need to fill in an order form so that the staff at B & Q can get you what you need. The order form will need to include the parts code as well a description of the item, the cost of the item and the page number in the catalogue that the item can be found so that the B & Q staff can check that they have the correct part.

Tasks

1. Work out the dimensions of the bathroom
2. *Work out the cost of the bathroom suite (bath, shower, toilet, basin). Be alert to the dimensions as you will need to find the **correct sized** items in the catalogues provided.*
3. Choose the tiles that you want to use. Work out how many of each type of tile that you will need. You will need to include a layer of border or feature tiles so to break up the blandness. You can use two colours of tile if you prefer.
4. Calculate how many tiles of each design that you will need. How many packs of tiles will that be and how much will they cost?
5. You will need to work out what other materials you will need. You can assume you have the tools to complete the work, but will need to include the cost of grout, sealant and spacers. The cost of these items is not included in the catalogue so you will need to look that up on the Internet.

Presenting Your Work

Clear and accurate presentation is an essential part of mathematics. There are lots of parts to this problem. You need to make it clear which part you are doing at any particular time.

Dimensions

The dimensions in the catalogue are given in millimetres. You might find it easier to convert them into centimetres before you begin as you are more used to using cm. Remember:

$$1m^2 = 10,000 \text{ cm}^2 = 1,000,000 \text{ mm}^2$$

To calculate the tiled area of the wall with the window in it.

Area of tiles = Area of Wall – Area of window

Area of Wall = length × breadth

    = 210 × 175

    = 36,750 cm²

Area of window = length × breadth

    = 115 × 65

    = 7,475 cm²

Area of tiles = 36,750 – 7,475

    = 29,275 cm²

This has been broken down into smaller sections it is clear how I have completed each section.