

## Problems Involving Fraction, Ratio and Percentage

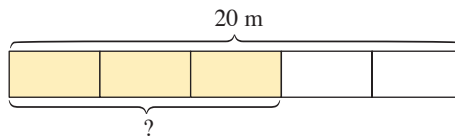
The use of models will help students understand and solve arithmetic word problems. When dealing with problems involving fraction, ratio and percentage, it will also help students gain a better insight into the various mathematical concepts.

In the following examples, the model method as well as the usual method for solving problems are presented. The usual method is abstract and if this is the only method taught, many students will have difficulty in solving problems. They will resort to learning by rote. On the other hand, the model method makes use of a pictorial model to illustrate the concept of fraction, ratio and percentage. The solution steps are explicit. Therefore if the model method is taught prior to the usual method, it will help students understand the usual method.

### Example 2

Minah had 20 m of cloth. She used  $\frac{3}{5}$  of it to make some dresses for her dolls. How many metres of cloth did she use?

The model method



We use the part-whole model to show  $\frac{3}{5}$  of 20 m. Here the whole is divided into 5 equal parts of which 3 parts are shaded. In other words, the whole comprises 5 units, so  $\frac{3}{5}$  of it comprises 3 units. We have:

$$5 \text{ units} = 20 \text{ m}$$

$$1 \text{ unit} = 20 \div 5 = 4 \text{ m}$$

$$3 \text{ units} = 3 \times 4 = 12 \text{ m}$$

She used 12 m of cloth.

The usual method

$$\text{Amount of cloth used} = \frac{3}{5} \times 20 = 12 \text{ m}$$