When children are in lower primary, many of them like Mathematics. As problem sums are made of short sentences, they can understand the question and find the answer easily. When they are promoted to upper primary, however, some students may experience difficulty in problem sum solving, especially in primary 5 and 6. This often occurs because the students do not understand the concept of rate. For instance, the number of times, fractions, ratio, percentage, speed are all factors that depend on rate. Thus they are unable to solve word problems that easily, even though they may have done well in lower primary.

Model drawing is a good way to help them. But sometimes they struggle to draw a model to explain how they get the answer. So is it difficult to draw a model? Let’s illustrate this through an example, a typical question for primary 4 to 6 levels.

**Problem Sum Solving In Primary Maths**

By Kenji Wakabayashi, Managing Director, Sakamoto Educational Systems Pte Ltd

Q: Andrew had 6 times as much money as Ben at first. When their mother gave them $300 each, Andrew has 3 times as much money as Ben now. How much money did they have at first?

The part shown with red arrow is made of 2 big units, each comprising of $300 and one small unit. The same highlighted part is also made up of 5 small units, as shown in Figure 1: Before.

5 units – 2 units = 3 units → $600
Hence, 1 unit → $200 → Ben’s original amount of money
6 × $200 = $1200 → Andrew’s original amount of money

**Answer:** Andrew had $1200 and Ben had $200 at first.

It’s a beautiful model based on a clear logic.
Andrew had 6 times as much money as Ben at first. When their mother gave them $300 each, Andrew has 3 times as much money as Ben now. How much money did they have at first?

Let 1 unit (symbolises with ➀) be the amount of money Ben had at first.

When you draw 2 lines of the same length, a line for Andrew which is made up of 6 units plus $300, and another line for Ben which is made up of 3 units plus $900, everybody can see clearly that $600 equals to 3 units! So, 1 unit = $200, which is what Ben had at first. We derive the same answer without knowing the relative size of each unit.

This powerful and easy approach from Japan is applicable for almost all types of word problems, and has been taught at some schools and authorised tuition centres in Singapore for 15 years. In fact, many students use it during the PSLE.

This article is contributed by Mr Kenji Wakabayashi, the Managing Director of Sakamoto Educational Systems Pte Ltd.