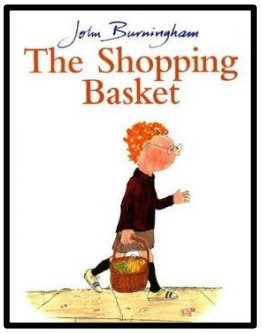

Story: The Shopping Basket
Author: John Burningham
Illustrator: Helen Oxenbury

Teacher: Jean Knapp
Setting of the class: A mixed ability Year 1 class in Berkshire, UK
Age group: 5-6 year olds (Year 1)
Number of children in the class: 30

Learning intention: To apply addition and subtraction using the bar model
Key mathematical vocabularies: add, subtract, more, less, altogether
Resources needed: The Shopping Basket picture book, whiteboards and pens, and multi-link cubes to represent the shopping items

Synopsis by the publisher
Steven is sent out for groceries on to the mean street of the city with only a shopping basket for protection. There are several shady characters about who are offering to lighten the load of the basket by helping themselves to his provisions! Stephen is having none of it and with the help of some of the city's less attractive sights, he outsmarts all of them and makes it home in time for tea.

Starter / Teaching input (15 minutes):
To help ensure the children understand how the bar model works, I started the lesson by showing the children two bar models - both of which showed a total of 12 in a different way (e.g. '6+6 = 12', '4+2+5+1 = 12') (see Figure 1). I explained how bar models could help us solve problems clearly and asked the children to discuss how the two bar models are the same; how they are different; what if 6 was taken away from the first bar model, how we would know how many were left; how we could check.

I then read 'The Shopping Basket' story to the class. Once I have finished reading the story, I went back to the first page where we explored how many items Steven needed to buy altogether (21 items) and how we could show this on a bar model (see Figure 2). To help make the learning more concrete, multi-link cubes were used where the different numbers of shopping items were represented by the different numbers of coloured cubes, creating a long bar of multi-link cubes (see Figure 3). This way, the children could check their answer by counting the cubes altogether and recognize the total number of cubes were 21 cubes.

Main activity (20 minutes):
The main activity was based on Steven's encounter with the different animals who wanted to have some of his shopping items. Specifically, the children were encouraged to think how many items Steven would have left in his shopping basket if, for example, the monkey wanted three bananas from a given number of existing items (e.g. 20 items) (see Figure 4). I supported the children in the early stages of structuring the subtractions for the first few animals in the story that take items from Steven on the way home using the bar model. I asked the children questions to check their understanding after the modelling e.g. "How do we draw out bar model? What is our total now?". Some of the more able children got the idea quickly and I was keen for them to start working at their own pace. Most of the children managed to work on the last few problems with little structuring of the bar model to assist them.

We did not get as far as the extension, but had this been an extended lesson, I felt the children would have been ready to create their own word problem from the original shopping basket of 21 items. They could invent an animal Steven would have encountered and how many of a certain food item the animal would be taking.

Plenary (10 minutes):
I asked the children to explain how they used the bar model to work out how many items they had left. Then, we created a question together and used the multi-link cubes to support children's understanding of the *parts* and *total* components of that problem's bar model.

Reflection:
The children loved the idea of a child being asked to get 21 items of shopping for his mother only to be faced along the way with a range of animals who wanted to take some of his shopping! All the children could see how Steven would end up with fewer items in the basket by the end of the story. (This is a story I had considered where drama would be particularly effective at illustrating each encounter and therefore, a decreasing amount of shopping items. Not only the use of the bar model to represent the 21 items in the basket was engaging, the bar model also helped some of the least able children to access the mathematics in the story alongside their peers.

If I had additional lessons to plan for, as a follow up, I would like to spend more time supporting chidren to create their own problems, starting with 21 items and each time Steven encounters a new animal who would like to take some of these items, we could consider the subtraction required and the new total amount before Steven met a new animal. Another idea (this could extend the lesson for the most able and Years 2-4 work) would be to use real, branded supermarket items. By doing this, a price could be added too and money problems could also be explored.

Figures:

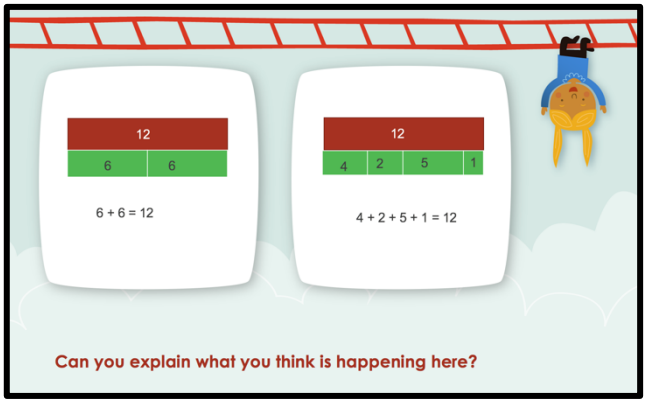

Figure 1: Introducing the idea of bar models

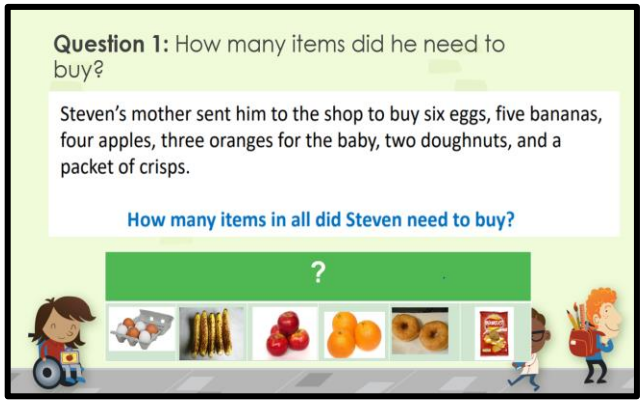

Figure 2: Linking the bar model to the story

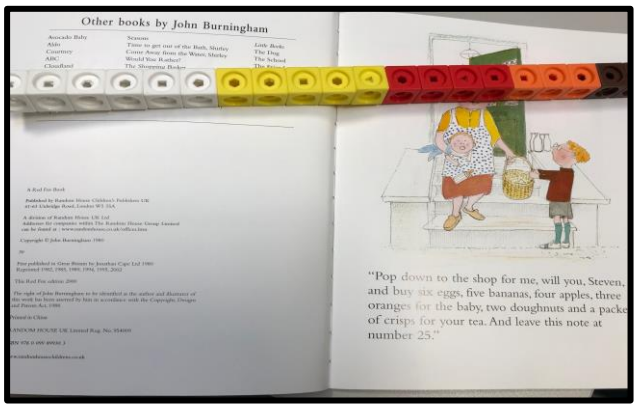

Figure 3: The multi-link bar model

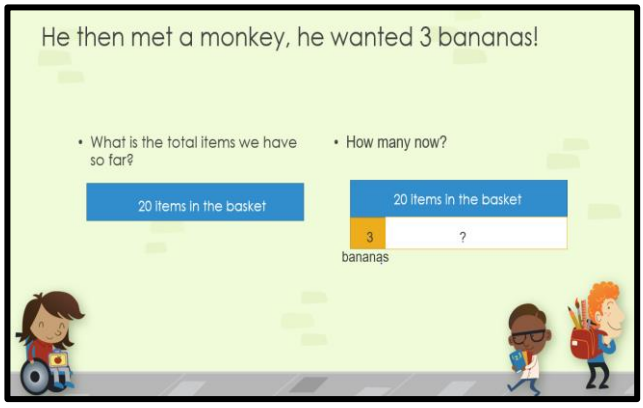

Figure 4: What happens when items are taken?