SHQ: How do we solve a problem using 'ratio and proportion' to help?

Pumpkin Pie Problem

Peter, the pumpkin eater, wanted to make two pies for a party. His mother, a professional pie maker, had a recipe for him to use. However, she always made 80 pies at a time. She used:

10 dozen eggs (a dozen = 12)
27 litres of condensed milk
480 tablespoons of sugar
100 teaspoons of cinnamon
140 cups of pumpkin

Peter looked in the cupboard and found:

4 cups of pumpkin
2 eggs
112 teaspoons of cinnamon
23 of a litre of condensed milk
15 tablespoons of sugar

Did Peter have enough ingredients to make two pumpkin pies for the party or did he need to buy more?

Tip: Perhaps work out how much ingredients to make 2 pies, or 1 pie and use this information to help.

The solution is on page 2 of the worksheet.

Solution

It looks like Peter is going to have to go shopping!

A way to think about this problem was to find out what proportion of the original recipe Peter required to make the two pies. You might have divided and then perhaps multiplied, depending on your strategy.

Using what you know about fractions could have helped.

If you divide the ingredients by 80 to find the ingredients for 1 pie, and multiply by 2 you would then find how much is needed for 2 pies.

You may have divided mother's recipe by 40 as 80 ÷ 40 = 2 so this would tell you how much of each ingredient was needed for 2 pies.

Which method did you use?

Here's the solution, with the calculations set out in a chart.

80 pies take	**What he needs** **80 pie quantity ÷ 40 to give amount for 2 pies**	**What he has got**
120 Eggs	3 eggs	2 eggs
27L Milk	0.675L Milk	0.66L Milk
480 tbs. Sugar	12 tbs. Sugar	15 tbs. Sugar
100 teasp. Cinnamon	2.5 teasp Cinnamon	1.5 teasp Cinnamon
140 cups of Pumpkin	3.5 cups of Pumpkin	4 cups of Pumpkin