

# Math Class Enriched by a Little Bowl of Cereal

Joan Stevens

“Eat your cereal. It’s good for you.” This statement is especially true in the context of a math lesson that allows students to use real food to make change for a \$10 bill.

In Alberta’s K–6 mathematics curriculum (Alberta Learning 1997), an outcome for the Grade 3 measurement strand states that students will be able to “make purchases and change up to \$10” (specific outcome 19, p 31). In an effort to address this outcome, I started by thinking about what it is that children love. The one thing I knew for sure was that they love to be fed, so I decided to bring to class several boxes of cereal (of at least two different kinds), as well as chocolate milk, bowls, paper cups and spoons. The students were going to purchase their cereal and milk.

As I was preparing, it became apparent to me that the lesson could be expanded into a review of mathematics strands learned earlier in the school year. I was excited at the prospect of being able to review estimating, measurement and addition.

I began the lesson by telling my students that they would have an opportunity to purchase a bowl of cereal and some chocolate milk using the \$10 bills from our math money. When they saw what I had brought in, they eagerly awaited more information from me.

I then performed a demonstration of mass. I poured one type of cereal into a cup, and then poured an equal amount of another type of cereal into a different cup. We talked about what we thought the cereal would weigh in grams or kilograms. I asked the students if they thought the cereals would have equal masses. Some thought that they would, because there was the same amount of cereal in both cups.

I then put each cup of cereal on one side of a balance scale. The masses were not equal. Why was this? The students brainstormed ideas, and concluded that some cereals are heavier than others, even though there is the same amount. We talked about ingredients that would make a cereal heavier (such as raisins).

I then showed the students a 4 L container of chocolate milk. They were hooked. I asked them to estimate how many millilitres of milk a small paper cup would hold. From there, we determined how many millilitres

of milk each student would get. The students came up with several strategies for determining how they would share the milk equally. Some students suggested that I put all the cups out and pour some milk in each, others used addition strategies and a few suggested using division to solve this problem. I did as the students asked and poured milk into each paper cup.

After this, I gave each student a menu, including prices (see Figure 1). The students then selected their items and paid the cashier. They had to verify their change before receiving their items. If their calculations were incorrect, they would eagerly go back to their desks and try again. When they had calculated the change correctly, they took their cereal and enjoyed it.

Figure 1

Menu	
Cereal	\$2.25
Chocolate Milk	\$1.00
Bowl	\$0.50
Spoon	\$0.25

At the end of the lesson, I had some cereal left. I decided to review chance and probability. On the board I wrote the phrases *impossible*, *likely*, *fifty-fifty* and *equal chance*. I had the students write their name on a piece of paper and then place it in a small container. I asked them what the probability was that their name would be drawn. When students’ names were drawn, they were given a little more cereal and milk. We talked about chance and used the vocabulary on the board when talking about probability.

Then I asked the students to hand in the money they still had. We started with fives and skip counted while I kept tally on the board. Proceeding to the next denomination, we again skip counted and kept tally. We repeated this process until all the money had been collected and tallied on the board. Then, we subtracted the total from the total amount of money they had started with. Through this, they discovered how much they had paid for the snacks as a class.

This lesson started out as a lesson on making change from a \$10 bill and expanded. In just one hour, I was able to review many other previously learned outcomes, and my students were engaged the whole time. I enjoyed this experience, as I saw how things unfolded and how making sense of math was possible for my students and me.

This lesson could be extended by allowing students to set up their own store and having them work through the whole process—shopping, selling and purchasing items they have priced.

## Outcomes Addressed

*The following outcomes come from Alberta's K–6 mathematics program of studies (Alberta Learning 1997).*

### Shape and Space (Measurement, Grade 3)

#### *General Outcome*

Estimate, measure and compare, using whole numbers and primarily standard units of measure.

#### *Specific Outcomes*

7. Select an appropriate object or nonstandard unit to measure capacity or volume of a container (estimation and mental mathematics, visualization).
9. Estimate, measure, record, compare and order the mass (weight) of objects, using standard units (g, kg) (estimation and mental mathematics, problem solving).

18. Estimate, count and record collections of coins and bills up to \$10 (estimation and mental mathematics).
19. Make purchases and change up to \$10 (problem solving).

### Number (Number Concepts, Grade 3)

#### *General Outcome*

Develop a number sense for whole numbers 0 to 1000, and explore fractions (fifths and tenths).

#### *Specific Outcome*

1. Count by 2s, 5s, 10s and 100s to 1000, using random starting points (connections).

## Reference

Alberta Learning. 1997. *Mathematics Kindergarten to Grade 6*. Edmonton, Alta: Alberta Learning. Also available at <http://education.alberta.ca/media/450754/elemmath.pdf> (accessed February 8, 2010).

---

*Joan Stevens is a Grade 3 teacher at Westview Elementary Public School, in Fort McMurray. Joan loves teaching mathematics and is always looking for ways to differentiate her lessons so that all her students can contribute in a meaningful way. She hopes to instill in her students positive attitudes about their ability to do mathematics and to make sense of it.*