SECTION NINE
TEACHING/LEARNING COMPUTATION

General Overview

Traditionally, computation has been perceived as the application of standard pen and paper algorithms; thus students would be taught a specific set of rules or formulae for carrying out operations. Often, teachers would demonstrate how to use these rules or formulae and the students would be expected to apply them in a similar manner, given a series of exercises.

However, this curriculum emphasizes a much broader perspective of computation. In addition to pen and paper methods of computing, there is an emphasis on mental computation and the use of the calculator. The curriculum also emphasizes the use of estimation in computing.

Given these emphases, there is the expectation that once students have been presented with a situation requiring computation, they will recognize it as such, and make decisions regarding:

- the type of answer required (exact or estimate)
- the way in which they will obtain the answer (use of a calculator, mental computation, or pen and paper computation0

Thus, the major characteristics of computation activities should be an exploration of a variety of strategies for obtaining answers to situations involving computation. Students should be encouraged to share their strategies. With teacher guidance, they can then move on to examine their strategies by considering questions such as:

- Do you think your answer is reasonable?
- Do you think your answer is correct? Why?
- Why does/doesn't this strategy work?
- Do you think it will work in all situations?

Scope of computation

The specific outcomes that have been listed for computation focus on six (6) general areas. Some of these general areas are taught across the grade levels, while others begin beyond the kindergarten and continue through the Grade six.

The general outcomes are:

- Conceptualisation of the four basic operations and the language associated with it (K-6);
- Development of strategies for carrying out the four basic operations on whole numbers, fractions and decimals (K-6);
- Development of strategies for carrying out the four basic operations on whole numbers, fractions and decimals (K-6);
- Development of an understanding of relationships between various operations (1-6);
- Development of an understanding of relationships among whole numbers, fractions, decimals and percentages (5-6);
- Estimating results of various operations (3-6);
- Applying computations to real life situation (K-6);

You will note that except for the outcome related to the relationships among the various types of numbers, all general outcomes are developed at the Grade 3 – 4 level. At this level, there is partial attention to the relationships among the types of numbers in that the students explore the relationships between fractions and whole numbers.