

One trend, of which we in Alberta are a part, is important in light of the above comments; that is the rapidly increasing role of teachers in mathematics curriculum development. This is held as a good thing by all. However, this responsibility demands many new skills of teachers. There were, in the ICME meetings, many calls for professional organizations (such as MCATA), teacher training institutions, and school and government agencies to act cooperatively in providing the means for this needed growth in mathematics teacher capabilities.

Oh Those Positive Whole Numbers!

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Generally speaking, there is little point in differentiating between whole numbers and positive integers. But somewhere the distinction should be made. Whole numbers are not elements of integers, even though we tend to use them as such. In teaching mathematics at any level, we should be constantly aware of the beauty of mathematics, and precision is one of the factors that makes it such a delightful subject.

In the early grades we go to some length in showing integers on the number line - and this is good. But do we go to the same trouble showing set "W" on a number "RAY?" Clearly, the geometric comparison (or contrast) in "point set" thinking is quite exciting. Here is where we can show that set "W" has no opposites as does set "I." Clearly, too, we can show why subtraction is a closed operation under set "I" but not under set "W."

As the student progresses, he will need to know that a whole number represents answers to "how many," while positive integers always indicate direction from some starting point, as well as answer how many. There are many places where this distinction is important in real life situations. For example:

A farmer has 3 cows. He lost 6 cows. Impossible?
Well, if 3 could mean +3, then of course the farmer
now has -3! Can we imagine that?

A farmer has 3 dollars. He lost 6 dollars. He now has -3 dollars. This is possible because we can think of 3 and 6 in terms of "I". But why can we do this with dollars and not cows? The answer, of course, is that dollars are abstractions and we can play around with abstractions in our mind! Note that if we think of 3 dollars as dollar bills, in no way can the farmer lose 6 dollar bills!