

## Deep and Early Understanding

A large range of Mathematics teaching and learning benefits (*over all school grades for any lesson plan*) appear to derive from a single change to Mathematics notation - **by adding a different kind of variable.**

In an 18 month pilot project with Grade 1 and 2 students, difficult concepts, including Algebra, were found both easier to teach and easier to learn. All students completed tasks, requiring less teacher time and effort in assisting students having difficulty. It was not necessary to be highly skilled with technology to use the teaching instrument, called "Foundation"; it proved easy to learn. It was motivating and engaging – students liked it. They, not the computer, controlled the screen. During the testing, both teacher and students provided input to the design.

For the higher grades, the same consistent and meaningful method of calculating mathematical expressions from grade 1 addition to Grade 12 Calculus is valuable, as is the way that Foundation provides a bridge between Arithmetic and Algebra. However, there will be more to come in Release 2 of Foundation.

A paper with embedded videos at the website [www.FoundationNotation.com](http://www.FoundationNotation.com) demonstrates how Foundation works and explains why it works. Foundation has been implemented as a Macintosh app and an Ipad app named "Foundation Notation". They are available in the Mac App Shop. A SMART Notebook widget and a PC app will follow. Information on the progress of the other apps is available on the "News" page of the website above.