

Mathematics Is the Calisthenics for the “Game” Of Life.

During practice a football player does hundreds of push-ups per week. Yet he never does a push-up during a game. Nevertheless he never asks such questions as “Why do I have to do push-ups in practice? I never do them during a game”. He knows that the strength he gains from the push-ups will help him perform better during the game.

So when students used to ask me such questions as “Why do I have to know algebra? I'm never going to use it in my later life!”, I tell them the story about the push-ups and then add “Mathematics is the calisthenics in the game of life”

The beauty of algebra in solving a problem such as “**Together John and Bill have 1,000 marbles and John has 150 more marbles than Bill. How many marbles does each have?**” does not lie in the fact that the answer is that John has 575 marbles and Bill has 425 marbles. After all, we could obtain the same result by using trial-and-error. Rather it is that by using the logical structure of algebra we can eliminate all the incorrect guesses and reach the correct answer virtually in just a few seconds.

While most students can go through life without knowing how to solve “John-and-Bill marble problems” and the like, they cannot go through life without having to make logical decisions. And it is in this sense that mathematics serves as the calisthenics of everyday living.

There is nothing wrong with stressing the ““How do you do this?” in any computational mathematics course. However it is unfortunate that too many elementary arithmetic and algebra courses stress the “How do you do this?” at the expense of ignoring the “Why does this work?”.

The fact that our courses emphasize the importance of the “why” as well as the “how” is a huge step forward in helping all students, independently of their ultimate professional goals in life, develop the problem solving skills that are so vital if a nation is to be on the cutting edge of innovation.