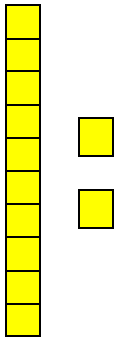
Math Manipulatives

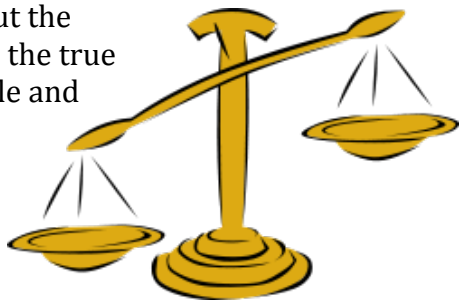
Base 10 blocks



The base 10 blocks are a staple in every classroom. At the elementary level students should have them readily available to use at any time. I would primarily use this manipulative when teach students about the basics of mathematics including counting, adding, subtracting, multiplying and dividing. One of the key reasons that I have chosen to highlight this resource because it is one, that despite the high cost, the majority of students in the public education system in New Brunswick are familiar with the base 10 blocks. Base 10 blocks are the most commonly used manipulative through students development- even in high school teachers will have them available for student usage. Although there are multiple manipulate available, I think that this one is the most essential to have in every classroom. There are ways around using most other manipulatives but base 10 blocks are durable, standard and as I mentioned previously they can be used to teach students the basics of mathematics. I strongly feel that students who have the concrete base 10 manipulatives on their desks will gain a stronger understanding of what 23 + 7 equals, than a student who does not have manipulatives available. There is significant value in using manipulatives when learning new concepts.

Balance scale

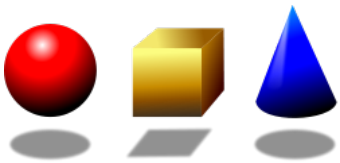
Similar to the previously discussed manipulates, the balance scale carries significant importance in the elementary classroom. In science students use this simple technology as a means of measuring and weighing materials, but in elementary classrooms this is an essential too in teaching students about the meaning of the equal sign. Prior to this term I had forgotten the true essence and meaning of the equal sign, but after using a scale and balancing equations I was quickly reminded of the importance to correctly and thoroughly teaching students about this common math symbol. There is no manipulative that can reinforce the notion that the equal sign means the 'balances rather than 'equal to' as visually as the balance can.



Coloured pattern blocks

In the early years these manipulatives would be ideal to use when teaching students about the different shapes. They could refer to them, trace them, make pictures using these shapes etc. In kindergarten when students begin learning about patterns these manipulatives serve as an excellent foundation. After having taught a lesson on pattern to my peers, I can't imagine how introduce students to the concept of patterns without having actually allowed students to experiment with creating patterns with different shapes and colours. As a teacher I intend to use coloured pattern blocks for many reasons, starting in kindergarten when students start learning about patterns, teaching the attributes of shapes, sorting, and in the upper elementary grades these manipulative are for creating complex patterns. Furthermore, these shapes are valuable when students are learning about the different qualities of 2D shapes and comparing them to 3D shapes.

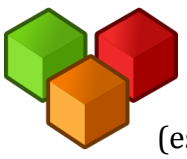
Geometric shapes



When is comes time for students to learn about 3D shapes it is essential for them to be able to see and touch the shapes that they are studying. These manipulatives allow students to explore the different shapes that make up our world hands on. 3D geometric shapes give students the opportunity to fully understand the different properties and the differences between the shapes. It is not everyday that you see a hexagonal prism, or need to know the difference between a triangular prism and a triangular pyramid but identifying the characteristics of 3D shapes. In upper elementary and middle school these manipulatives would be useful when learning about measuring the perimeter, volume and area of geometric shapes. The key reason for which I have chosen to highlight this manipulative is because many of the shapes that students are expected to be able to identify are foreign to students (especially for grade 3 students when they are introduced to 3D figures). To expect to students to understand these shapes without have access to them, would be a little cruel.

Interlocking math cubes

These manipulatives are ideal to use when teaching students about patters. Student can use interlocking math cubes to create coloured or numbered patters (1, 2, 3, 4, 5 etc). Furthermore, these cubes can be used to practice addition and subtraction. I would use these blocks to introduce these concepts to students, but I would encourage all students to continue to use them (especially those who are struggling). Furthermore, in upper elementary, the interlocking cubes could be used for students for to build a structure and



determine the area, as well as to acquire knowledge about proportional reasoning. When students can be hands on involved in creating something of value and applying to real life scenario they will be more engaged in their learning.

Money

The final manipulative I have decided to emphasize in money. This manipulative is an excellent tool to use when introducing students to skip counting; students are semi-familiar with the concept of money and being able to handle the coins makes learning this aspect of the curriculum significantly more interactive. Nickels and dimes are valuable resources for students in grade 2 who are learning skip counting. Furthermore, as students gain a better understanding of money, students in grades 3-5 can use money as a source for learning more complex concepts such as decimals. What I like more about using money, as a manipulative is that it promotes the practicality of what students are learning; putting mathematical knowledge into context is essential and engaging.