

Montessori Method

The Montessori math materials are special because they introduce the child to the actual quantities of numbers. In traditional math textbooks, pictures of quantities are shown to the child. In a Montessori Primary or Elementary classroom, the child can actually touch and hold quantities from one unit to thousands of units in her own hands. What better way to grasp the meaning of a number! The math materials that show these exact quantities are the Golden Beads.

You may have either heard your child refer to the Golden Beads or have seen them yourself in the classroom. These materials are introduced to the child after the child is confident with the numerals one to ten as well as their corresponding quantities. This material intrigues children of all ages, and it proves to be very interesting and exciting for the adult to watch children unleash their mathematic minds as they begin to understand place value of our base ten number system.

The visual advantage of these materials as well as their pleasing sensorial attributes demonstrates plainly and clearly to the child our number system. First there are single beads, which indicate units. Then ten single units are strung together in a bar to show tens. Next, ten of the ten bars are strung together in a square shape with 100 golden beads together indicating one hundred. And finally, a hundred squares are wired together to form a cube of one thousand beads.

The child learns to first recognize the quantities, then to form numbers from 1 through 9,999 and then to pair the numerals with the quantities. The child also learns to read and write numerals up to 9,999, and to exchange equivalent quantities of units for tens, tens for hundreds, etc. The child immediately recognizes the visual difference in the numerals as well as the tactile difference in the quantities of beads, bead bars, hundred squares and thousand cubes.

Through the Decimal System Material, the child is able to clearly understand that when a number reaches 10, it then proceeds to the next hierarchy. Exchanging is a difficult concept to understand but made so simple using the Golden Bead Material, coupled with a great deal of repetition. A child soon learns that if he has 10 ten bars, he must exchange those 10 ten bars for 1 hundred square, and if the child has 10 of the hundred squares, he must exchange them for 1 thousand cube.

When a child gets to this point, he will continue to work extensively with the four operations (addition, multiplication, division and subtraction). The child will do so using not only the Golden Beads but also additional materials such as the Stamp Game (a manipulative system that represents the decimal system as color-keyed “stamps”) and the colored Cuisinaire rods (a manipulative that takes the child from the earliest stages of math operations into division and fractions).

Over the years the Montessori child is given numerous lessons on how to become a mini-mathematician. Giving a child the opportunity to work through the Montessori Math curriculum is essentially giving that child the keys to unlock the world of mathematics. I continue to be amazed at how the students move from the manipulative understanding of the concrete to the abstraction of the concept. The mathematics lessons and didactic materials are further examples of the ways the Montessori environment enriches the lives of our children.