



Math

How Math Is Taught

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Much research has been done during the past number of years around the topic of math and the best ways to teach it. These studies have found that children best formulate mathematical concepts when engaged in hands-on activity, and when the learning is made relevant to their lives. The days of giving out worksheets or textbooks and “lecturing” to teach young children math concepts are gone from classrooms that strive give children a strong mathematical foundation. Worksheets and textbooks teach rote skills that depend only on a good memory for success. Math is more than memory – it requires a strong understanding of concepts and an ability to actively think through problems to come to workable solutions. This is why you will find that instruction in math has changed a great deal over the years.

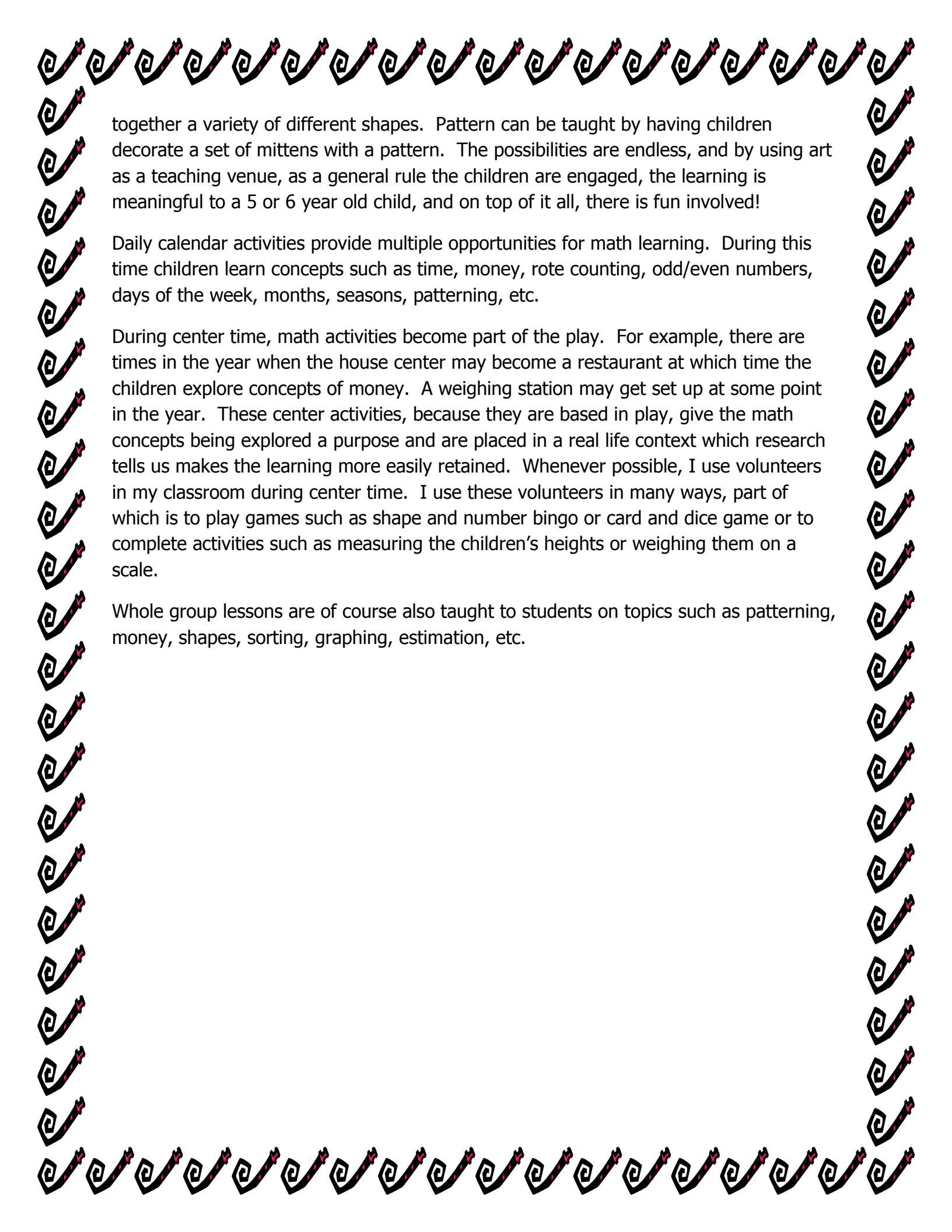
Often, you will hear educators refer to “manipulative math materials”. These are small, usually very ordinary materials that children are given to help them build mathematical understanding. Manipulative materials are used for counting, patterning, adding, problem solving, etc.

Manipulative materials are used in classrooms for a number of purposes. First, they help children understand mathematics. They provide ways for students to bring meaning to abstract mathematical ideas. They help children learn new concepts and relate these concepts to what they have already learned. They assist children with the solving of problems put in front of them.

Second, exploration with manipulative materials allows children to see mathematical relationships. With them, they have tactile and visual models that help develop their understanding. Without these concrete references, students are often lost in a mass of abstract symbols for which they have no concrete connection or comprehension. Manipulatives are a very important part of a meaningful mathematics program – right through all of the elementary grades.

Math is also taught through literature in order to tie learning to children’s experience and make it relevant to their lives. There are many excellent math concept books available on the market today. Please see me if you would like to see an example.

Art is another subject that has the potential to integrate the teaching of mathematical concepts. For example, symmetry can be taught through making butterflies. The concept of shapes can be taught through having children make a picture that puts



together a variety of different shapes. Pattern can be taught by having children decorate a set of mittens with a pattern. The possibilities are endless, and by using art as a teaching venue, as a general rule the children are engaged, the learning is meaningful to a 5 or 6 year old child, and on top of it all, there is fun involved!

Daily calendar activities provide multiple opportunities for math learning. During this time children learn concepts such as time, money, rote counting, odd/even numbers, days of the week, months, seasons, patterning, etc.

During center time, math activities become part of the play. For example, there are times in the year when the house center may become a restaurant at which time the children explore concepts of money. A weighing station may get set up at some point in the year. These center activities, because they are based in play, give the math concepts being explored a purpose and are placed in a real life context which research tells us makes the learning more easily retained. Whenever possible, I use volunteers in my classroom during center time. I use these volunteers in many ways, part of which is to play games such as shape and number bingo or card and dice game or to complete activities such as measuring the children's heights or weighing them on a scale.

Whole group lessons are of course also taught to students on topics such as patterning, money, shapes, sorting, graphing, estimation, etc.