

**Math & Movement  
UPK Study  
Emily Howland Elementary  
May 3, 2010 – June 17, 2010**

**Observation Report  
By:  
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**Introduction**

The Math & Movement program makes math fun and concrete and provides motivation and health benefits, all while being a simplistic and flexible method of teaching math skills and concepts. This is what excited me about the program from the moment I observed Suzy Koontz working with a neighboring Kindergarten class in the fall of 2009. I immediately wanted to take the program and make it work for Universal Pre-Kindergarten (UPK) students. I saw the potential of the program and it seemed to be a perfect fit for the high energy and constantly-moving students of my class. I just didn't know exactly how to adapt the program and make it work. I needed some support and guidance.

In the spring of 2010, when Suzy came to me wanting to do a study of the effectiveness of Math & Movement with UPK students, I saw this as a great opportunity to end the school year with some excitement and set new expectations for my students that would drive the class motivation through the end of the school year. In early May, we pre-tested the students and the study was off and running. Over the next seven weeks, our UPK class used the program adapted to meet the needs of the students. During this time we added some literacy concepts and introduced a fourth grade buddy system. The results of the June post-test showed that the children made tremendous progress in all areas of math, literacy, and even in their academic motivation. This paper is a reflection of my experiences and observations during this short period of time. It has proved to be a positive and effective learning experience for me, the UPK students, other students in the school, and even the community at large.

**Program Implementation**

When I sat down with Suzy to discuss how to implement the Math & Movement program with my UPK students, I was both excited and apprehensive. I had worked with these students for three quarters of the year and had created expectations for them. I asked myself if I could expect these students to try a new approach to learning at this stage in the year and would they be motivated to do it and would they be capable as well? I remembered the philosophy I had decided I would live by as a teacher: students will rise

to your expectations and are capable of more than we might think they are. So I decided I had nothing to lose and that the students had everything to gain from this experience.

**Pre-Test:** On May 3, seven people (Suzy, two classroom aides, three substitutes, and I) spent two hours testing kids to determine their prior knowledge before we implemented the program. The children were asked questions dealing with number sense, mathematical concepts, literacy sense and concepts, and various other school-age questions, as well. (Please see the pre-test for more details). The results of this test were to be used to compare to the post-test given at the end of the seven-week program.

**Movements and Counting:** The program implemented the whisper counting exercises modified to meet the needs and abilities of the students. In general, any basic repetitive movement was used to help the kids count to 20, 30, 100, and by 10s. Some the movements included jumping, clapping, arm crossing, and movements that mimicked animals such as dogs, cats, frogs, and unicorns. I gave the students the freedom to choose movements that appealed to them. I modified their suggestions when necessary to allow for simplicity for all the children.

The exercises were purposefully done after lunch each day due to the amount of energy they had at that time of day, along with the increased lack of self-control. The idea was for the students to use this increased energy in a constructive way and help them become aware of their body and increase their mental and physical self-control that seemed to have been lost during the 30 minute lunch period. The exercises were performed for anywhere from five to ten minutes, depending on student interest. To end the activity, I would do some exercises with the children sitting down and using just hand and arm movements as a way to calm the children down and prepare for the next activity.

In the first few weeks of the study, only a small handful (5 of 18) of the students participated enthusiastically. Many students did not show much interest. An extrinsic reward (stickers) was offered to the students to try and increase participation. As the weeks went on, the participation of the students steadily increased. As I started allowing the students to pick and choose the movements if they participated, more students joined. In the end, approximately 15 of 18 students participated on a daily basis.

**Math and Literacy Mats:** The mats were one of the highlights of the program for the UPK students. The mats allowed the students to use movement, make verbal responses, and be visually stimulated. In order to allow for more direct instruction, observation, and encouragement, I divided the students in to groups of four to five students. Each day of the week, I would work with one group for 15 to 20 minutes on the mats. We mainly focused on counting to 20, letters, colors, and one sight word mat. I would allow the children to explore the mats freely while I worked with one student at a time on a particular mat to assist, observe, and provide encouragement. I also had students work in teams of two or three to

help each other on the mats and work together. They loved this. This time, each day was a great opportunity for the students because it was a slightly unstructured learning experience which allowed them to be free, interact socially, and move about as they pleased. The children always participated very willingly. Their favorite mats were the alphabet mat and color mat. Some students enjoyed the sight words mat and became very successful at sight word recognition. Others became fond of the clock mat and enjoyed trying to learn to count by 5s. Many took favor to the 10s mat and it was surprising how many began to count by 10s to 100. The ability of the program to allow students to choose what they were interested in learning, allowed students to develop increased motivation to learn and challenge themselves.

**Fourth Grade Buddies:** In order to provide a more one-on-one learning experience for the students, Suzy suggested that we ask the fourth grade teachers to choose responsible students be buddies with the UPK students. This was an instant success. I immediately noticed that the fourth graders had to learn how to simplify their explanations and understanding of the number concepts so that they could find ways to teach the UPK students to understand. This also exposed the UPK students to more complex math terms like “double,” “add,” “more,” and “less” that the fourth graders would naturally use to try and teach the concepts. The fourth graders also began adding their own spin and fun ways of teaching like playing catch and counting, and playing number games on the chalk boards and allowing the students to write numbers. The UPK students and fourth graders worked so well together and formed bonds with each other quickly. Both groups of students were excited about working together and meeting one to three days a week for about 15 minutes. At the end of the program we had a Math & Movement party where we played “Counting Sparkle” and the buddies counted chocolate candies together before eating them. We also took some time to videotape some of the interactions with the buddies on the mats and doing the skip counting exercises. I think the fourth grade buddies added motivation and excitement to the program and created a unique and valuable learning experience for all the students who were involved.

### **Impact on Student Learning and Motivation**

From my informal observations on a daily basis implementing the program, there were noticeable results in the UPK students’ learning and motivation. Instantly, students were excited about doing the math and literacy mats and looked forward to it every day. By the fourth week, students would remind me that we had to do Math & Movement after lunch and were excited about doing this, as well. I soon began to notice that many of the students that had formerly had trouble counting in the teens were now verbally saying each number up to twenty and beyond with ease. Some students began counting well into the 30s, 40s, and even up to 100. Prior to the program, many students could only count to 12 and the rest stopped at 20. More students could count and recognize the numbers on the calendar that we had been doing since the beginning of the year. Now they began to count accurately on the calendar. Several students could count by tens, some by fives,

and even by twos. I observed one student using the Count to 20 mat to skip count by 2s without any prompts from an adult. One of the lowest students could count above 30 and nearly beat one of the highest students in a friendly counting competition. Students appeared to be recognizing more letters and sounds and some really took to the sight words mats and showed tremendous sight word recognition development. Children at every skill level of math and literacy seemed to be motivated by the program and greatly increased their understanding of concepts.

The students were post-tested on June 17 to gain formal data about the success of the program. Suzy let me know that there were significant positive results in all areas that were tested. (Please see the Math & Movement website for detailed results.)

### **Conclusion**

The apprehension I may have had before starting the program is a distant memory. What allowed the program to be successful was that it was easily modified to meet the needs of each student. It allowed for direct instruction, informal instruction, one-on-one instruction, cooperative learning, older students teaching younger students, and students learning at their own pace and interest level. It naturally appealed to the interests and needs of the students. The students learned rapidly, were physically active, and had fun learning.

The results of students learning were beyond my expectations.

This program has great potential at the UPK level. I feel because of the past seven weeks doing Math & Movement, the students are better prepared to be successful in their future education.