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National Standards for Mathematics and My Kindergarten Curriculum

I chose to reflect on the Geometry Standard as defined by the National Council of Teachers of Mathematics (from here on out referred to as the NCTM). I have found that the majority of children that come into the kindergarten program at our school are very knowledgeable in many areas of academics. Because of this, I chose to expand upon quite a few objectives in the curriculum that had been drawn up by the school before my arrival five years ago. Though I wasn't thinking about national standards at the time, I was told by our math specialist that my curriculum was, "well ahead of the CMT course of preparation." It is accepted that the CMT's objectives are beyond those of the national standards, so by default I assumed that my curriculum being beyond the CMT was beyond national standards. I added such goals as completing two digit addition and subtraction, using sign language numbers through 1o, and creating pictures from data represented in a graph. While I was certain that these objectives would match or exceed national standards, I never thought to compare my geometry objectives to national standards until this assignment.

The NCTM list three objectives under the Geometry Standard. The first standard says children should "recognize, name, build, draw, compare, and sort two- and three-dimensional shapes". My curriculum expands upon that. For instance, we learn all the basic shapes and polygons, including irregular

heptagons. We compete with our third grade buddies, too often winning, in exercises that depend on these skills.

The second standard says children should "describe attributes and parts of two- and three-dimensional shapes". We focus on using higher level language to describe attributes of geometric figures. For example, if you say "corner" in our class you will quickly be told that, "Polygons have angles".

After reviewing the third standard, I see a shortcoming in my curriculum. The third standard says children should "investigate and predict the results of putting together and taking apart two- and three-dimensional shapes". Aside from informal observations the children make playing with manipulatives, we don't do this. A quick search on the internet gave me several ideas to incorporate into my curriculum; tangram puzzles, put a house together using cut and paste shapes, and find the hidden shapes in a drawing. I'm also wondering about putting little books together that give step-by-step picture instructions to build models out of parquetry blocks.

Looking through the national standards was a superb reference point to compare my curriculum objectives to. Next year, I'd like to set my professional goal to be comparing the national standards to our kindergarten curriculum standards, and adjusting my curriculum to line up with it. As I have just seen with the Geometry Standard written by the NCTM, it is easy to forget to include an important objective in your curriculum. It is also easy to see how a missed prerequisite objective can lead to another missed objective and have a snowball

effect on future learning. Imagine how a child coming to a new school in another state could struggle academically if their education was not aligned to some unifying national curriculum.

This assignment has shown me that as grand as my intentions were to expand on the curriculum I came into, I lacked a common direction with my peers. Before I expand, I need to assess where I need to expand, and using the national standards is a solid start.

http://standards.nctm.org/document/appendix/numb.htm

Geometry Standard

Instructional programs from prekindergarten through grade 12 should enable all students to—

Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships

Pre-K–2 Expectations:
In prekindergarten through grade 2 all students should–

- recognize, name, build, draw, compare, and sort two- and three-dimensional shapes;
- describe attributes and parts of two- and three-dimensional shapes;
- investigate and predict the results of putting together and taking apart two- and three-dimensional shapes.