**Picture Books That Can Teach Mathematical Concepts**

**Geometry and Spatial Sense**

**When a Line Bends...a Shape Begins**
by Rhoda Gowler Greene; illustrated by James Kaczman

**What it's about**
Bouncy verses describe and show 10 geometric shapes that can be created by the simple bending of a line. Each vibrant spread is devoted to a different shape and is packed with examples. Shapes include squares, rectangles, triangles, diamonds, circles, ovals, stars, crescents, hearts and octagons. The illustrations are adorable, and the many real-world examples help kids see the many shapes in the world around them.

Grade Level-- K-Gr. 2

**Shapes, Shapes, Shapes**
by Tana Hoban

**What it's about**

It's a fantastic book if you are looking for photographs to show the different shapes that are all around us each day.
There are no words, just pictures like:
    - circles on baskets, chairs, a boat...
    - rectangles in barrettes, a fire engine...
    - triangles in a sandwich, bridge, house awning...
    - plus parallelograms, stars, hexagons, etc
This would be a perfect book to show to your class before going on "shapes hunt" around the school!

Grade Level:  all grades

**If You Were a Polygon**
by Michael Dahl; illustrated by Sara Gray

**What it's about**
This book teaches children what polygons are, using numerous kid-friendly examples (ie: like the stars, house parts, and tables---click 'see inside' to see).

Grade Level:  Gr. 1-2

 **Number Sense and Numeration**

**Fraction Action**
by Loreen Leedy

**What it's about**
*Fraction Action* is an action-packed look at fractions, with the help of Miss Prime and her class of animal students. Five short chapters provide distinct fraction lessons, with stories to teach sets, dividing objects into equal parts, comparing values...

Grade Level: 3 -5

**The Lion's Share**
A Tale of Halving Cake and Eating It Too -- by Matthew McElligott

**What it's about – (multiplication)**
In this picture book, lion has baked a cake for his friends, but each of his greedy friends takes half the cake when it's passed to them, leaving Lion with only a crumb. Ant feels bad and offers to bake another cake. The others hear this, and not wanting to look bad, each offers to likewise bake cakes for the lion, but they each try to outdo each other, promising twice the cakes promised by the previous guest. Soon, hundreds of cakes are being promised and the result is quite comical.

Grade Level:  K-3

**One Hundred Hungry Ants**
by Elinor Pinczes and Bonnie Mackain

**What it's about – (division)**
One hundred hungry ants are marching single file to invade a picnic, but their single file line is taking too long. To speed things up, they try 2 rows of 50, then 4 rows of 25, and finally 10 rows of 10. With all the rearranging, will they get there in time?

Grade Level: Grade 3 - 6

**Follow the Money**
by Loreen Leedy

**What it's about**
Of the many 'follow the coin/dollar' children's books available, Leedy's *Follow the Money* is our favorite. Written from the point of view of a quarter, this book follows the quarter's path on one very full day that includes the Federal Reserve, a local bank, a grocery store, a child's piggy bank, etc. A lot happens to the quirky little quarter over the course of the day, resulting in numerous money-related math problems (mostly customers getting change or adding coins).

Grade Level: Grade 2-4

**Measurement**

**Is a Blue Whale the Biggest Thing there Is?**

written and illustrated by Robert Wells

**What it’s about**

This book takes measurement and comparison to the extremes of imagination, starting with the question "Is a blue whale the biggest thing there is?", progressing through larger and larger items, and ending with the universe!  This is a thought-provoking book for teaching measurement lesson plans about the relative measurements of very large items. It's also a great book to help children start to conceptualize how enormous the universe is!

Grade Level: Gr. 2-3

**Measuring Penny**

written and illustrated by Loreen Leedy

**What it’s about**

For her homework, Lisa must measure something as many ways as she can, so she decides to measure her dog, Penny. Once she starts the assignment, she catches the spirit and seemingly can't stop measuring everything she sees!

Grade Level: 2 - 4

**Super Sandcastle Saturday**

written by Stuart Murphy and illustrated by Julia Gorton

**What it’s about**

On a sunny beach day, three friends enter a sand castle contest to see who can build the deepest moat, the tallest tower, and the longest wall. During the competition, the friends try to see who is winning by measuring their castles with feet, shovels, and spoons. They think they have figured out the winners, but then the lifeguard takes the final measurements and they realize they were all wrong!  Luckily, Larry is able to explain about using standard measurements and how using people's feet and shovels and spoons can all vary "but a centimeter is always a centimeter."

Grade Level: K-Gr. 1

**Data Management and Probability**

**Lemonade for Sale**
by Stuart Murphy and Tricia Tusa

**What it's about**
Four friends start a lemonade business use graphs to chart their growing sales. Sales are improving until a boy down the street starts a juggling act for money. How will that impact their sales? The friends use graphs to answer that question.

Grade Level: Grade 1-3

**Tiger Math: Learning to Graph from a Baby Tiger**
by Ann Whitehead Nagda and Cindy Bickel

**What it's about**
TJ is a tiger who was born at the Denver Zoo and, sadly, became an orphan shortly thereafter. The zoo's veterinary staff takes over for his mother, feeding him by hand until he is able to eat on his own. *Tiger Math* shares this compelling story of survival, and includes different types of graphs (picture, pie, line, bar) that chart his development in the early years of his life.

Grade Level: 2 – 5

**Great Estimations & Greater Estimations**
by Bruce Goldstone

**What they are about**
*Great Estimations* and*Greater Estimations* are two excellent books for helping children learn to estimate. Both books start by showing what certain amounts look like (ie: 10 and 100 rubber duckies). The books then move on to provide spreads with different objects that students can estimate as well as strategies that students should try. Examples include:

-how many penguins in a picture (tip: mentally overlay a grid, count one box, then
 multiply by the number of boxes to determine estimate)
-how many cherries in a quart (tip: count out 10, then use that to estimate the amount)
-how many bunnies in a picture (tip: find a clump of 10, then another clump, etc)
-how many red blood cells in a picture  (tip: mentally draw a box, count the # inside.

Grade Level: Gr. 2-5