

Get the Picture:

Connecting Children to Mathematics Through Books

Dr. Carrie S. Cutler www.carriecutler.com

Picture Books with Strong Student Connections and Suggested Math Activities

Book	Brief Summary	Mathematics Teaching Idea for PreK-1	Mathematics Teaching Idea for 2-4
COUNTING, OPERATIONS, AND ALGEBRAIC REASONING			
<i>Alma and How She Got Her Name / Alma y cómo obtuvo su nombre</i> by Juana Martinez-Neal	What's in a name? For one little girl, her very long name tells the vibrant story of where she came from — and who she may one day be. If you ask her, Alma Sofia Esperanza José Pura Candela has way too many names: six! How did such a small person wind up with such a large name? As she hears the story of her name, Alma starts to think it might be a perfect fit after all.	Children can build towers with one cube for each letter of their names, then look for a classmate with a name that is longer, shorter, or the same length.	Create a class data set of name lengths. Students graph the number of letters in classmates' names, calculate the mean, median, mode, and range, and compare their own name length to the class statistics.
<i>Baby Goes to Market</i> by Atinuke	When Baby and Mama go to the market, Baby is so adorable that the banana seller gives him six bananas. Baby eats one and puts five in the basket, but Mama doesn't notice. As Mama and Baby wend their way through the stalls, cheeky Baby collects five oranges, four biscuits, three ears of sweet corn, two pieces of coconut--until Mama notices that her basket is getting very heavy!	Write the numbers 0 – 5 on a sheet of paper. Children roll a die then cross out the number that is one less than the number shown on the die. The first player to cross out all the numbers wins. Use a die with number 13-18 for an added challenge.	Have students track the quantities Baby receives throughout the story and write addition and subtraction equations to represent the changing totals. Challenge students to create multi-step word problems based on the market items.
<i>Feast for 10</i> by Cathryn Falwell	Count from one to ten and then count again. What does it take to make a feast for ten hungry people? First, there's shopping, then there's cooking, and setting the table. Everyone in the family helps, and as fast as you can count to ten, the feasting begins.	Talk with children about the nutritious foods in the story (e.g., beans, greens, tomatoes, and potatoes). Place numbered cards in the corners of a placemat. Children use play foods to create a 1-2-3-4 meal. They choose 1 meat or protein, 2 grains, 3 fruits, and 4 vegetables and place them in the correct corners of the placemat.	Plan a feast for a larger group (20, 30, or 40 people). Students use multiplication and division to scale ingredient amounts and create a shopping list within a budget.
GEOMETRY AND SPATIAL REASONING			
<i>Have You Seen My Monster?</i> By Steve Light	Shapes of all sorts (including nonagons and heptagons) appear at the fair. But where is the monster?	Children use stickers to label shapes found in the environment—dot stickers for circles, square sticky notes for squares, rectangular sticky notes for rectangles.	Create a shape scavenger hunt focused on polygons. Students classify shapes by attributes, record the number of sides and vertices, and organize findings in a table or graph.

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<i>The Quest for a Tangram Dragon</i> by Christine Liu-Perkins	A brave Little Triangle seeks a Chinese dragon to end the long drought. On the quest, Little Triangle meets other shapes who want to help. Using the magic of tangrams, the shapes do amazing things together.	Provide children with tangrams to create designs, shapes, and animals like those in the story. Encourage students to use positional language when describing how they are placing the tangrams (i.e., flipping, rotating, turning, etc.)	Use tangrams to investigate fractions. Students determine what fraction of the whole tangram each piece represents and combine pieces to model equivalent fractions and geometric designs.
<i>Martha Maps It Out</i> by Leigh Hodgkinson	Martha's maps will take you on an enchanting journey through her world, starting from outer space and zooming in, map by map, to our planet, Martha's neighborhood, and beyond.	Children use the kitchen tools to make prints on large sheets of paper. The prints must fill up the entire paper but not overlap. When finished, children describe to the teacher the location of the prints using shape and position words such as beside, under, over, next to, between, up, down, top, bottom.	Students create a scale map of their classroom, playground, or neighborhood. They include a map key, estimate and measure distances, and write directions using positional and directional language.
<i>Usha and the Big Digger</i> by Amitha Jagannath Knight Story Guide	Indian American characters discover that flipping or turning a shape does not change its attributes. Children experience big ideas in geometry as they visualize shapes in various positions and listen to the book's characters describe the direction, distance, and location of a constellation in relation to other objects, such as a tree or house.	Guide children on a walk around the school. When a child recognizes an object's geometric shape (such as a rectangular door, square floor tile, or circular clock), ask them to mark it with the sticker that matches its shape. Encourage children to describe the attributes (number of sides, number of corners) of the shapes they find. Ask children to describe the shapes' positionality (below the sink, beside the door).	Students draw or build geometric figures and identify lines of symmetry, rotations, reflections, and translations. They explain how a figure changes while preserving its attributes.
MEASUREMENT AND COMPARISONS			
<i>Look, Grandma! Ni, Elisi!</i> By Art Coulson	Bo needs the perfect container to show off his traditional marbles in his family's booth at the Cherokee National Holiday. He compares the capacity of a too-big mat, crate, box, and vase before finding that a basket Grandmother wove for him is the perfect size to display his wares.	Show a small pile of cubes and four containers. Ask children to guess which container will be too small for all the cubes. Which will be too large? Which will be just right? Have children fill the containers and discuss their findings.	Provide several containers and have students estimate and measure capacity using standard units (cups, liters, milliliters). Students compare capacities and calculate differences between containers.
<i>Sometimes We Do</i> by Omo Moses	Johari loves Daddy days, when he and his father make pancakes and play with trains. Together Johari and his father chat about size, number, amount, recipes, and family chores. Playful illustrations allow a glimpse of Johari's fantasy world and invite further discussion of the book's early math concepts.	Cut pieces of ribbon, yarn, or paper to the lengths of some of the illustrations in the book and label them. Put in order from longest to shortest.	Students measure classroom objects using inches and centimeters, organize the data in a table, and compare lengths using addition, subtraction, and multiplication.
<i>The Wheels on the Race Car</i> by Alexander Zane	Animals zoom around a racetrack at a lyrical pace, mirroring "The Wheels on the Bus."	Have a race with wind-up toys. Use nonstandard units to measure the distance each toy goes with three twists of the mechanism.	Conduct multiple toy races. Students measure distances traveled, record data, find the average distance for each toy, and create a bar graph to compare results.

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<i>You are Not Small</i> by Anna Kang	Two creatures debate their size in relation to each other and to a larger group of creatures.	Using a paper creature like the one in the book, have children find and share examples of classroom objects that are bigger and smaller: "This [stapler] is bigger/ smaller than the creature."	Students measure and compare the heights of classroom objects or classroom objects in order measurements from least to greatest.
<i>Actual Size</i> by Steve Jenkins	The engaging illustrations and foldouts in this book help children make size comparisons as they learn the actual sizes of some unusual animals and their body parts.	Cut pieces of ribbon, yarn, or paper to the lengths of some of the animals in the book and label them. Put in order from longest to shortest.	Research the actual lengths of animals from the book. Students create a life-size measurement display, convert units when appropriate, and compare animal lengths using multiplication and division.
<i>In Our Garden</i> by Pat Zietlow Miller Story Guide	Millie has recently moved to a new city, from a place more than an ocean away. More than anything she misses the garden where her family used to grow food. Then one day she has an idea—the school has a fine flat roof, perfect for a garden. Soon her teacher and classmates are on board. It takes a lot of waiting. But as Millie's teacher Miss Mirales says, "Be patient. Good things take time."	Children use a pan balance to explore weight and equality of real foods versus plastic play foods. Emphasize terms such as <i>heavier</i> , <i>lighter</i> , and <i>equal</i> .	Students weigh produce from a garden (or pictures with given weights), compare weights, calculate totals, and solve word problems involving addition and subtraction of weight measurements.
PASSAGE OF TIME			
<i>Rosie Goes to Preschool</i> by Karen Katz	Rosie follows the preschool routines and schedule with ease and confidence.	Take pictures of children doing various classroom activities. Have them place the photos in order for the daily class schedule.	Students analyze through personal daily schedule, calculate elapsed time between activities, and compare how much time is spent on different parts of the day (including screen time).
<i>Littles and How They Grow</i> by Kelly DiPucchio	With adorable scenes from the busy life of a "little"—peekaboo, feedings, tantrums, giggles—and a final scene that reminds us how they become big kids all too soon, this is the ideal gift for any new parent and their child.	Measure the children at the beginning and end of the year. Have parents send baby and current photos of the children and match them.	Students collect and graph growth data (height or shoe size). They compare changes over time and interpret trends using line plots or bar graphs.
<i>The King of Kindergarten</i> by Derrick Barnes	This new kindergartener dressed himself, eats a pile of pancakes, and can't wait to be part of a whole new kingdom of kids. The day will be jam-packed, but he's up to the challenge, taking new experiences in stride with his infectious enthusiasm! And afterward, he can't wait to tell his proud parents all about his achievements--and then wake up to start another day.	Use picture cards to create a daily schedule. Mix up the classroom schedule and see if students can "fix" it. Use benchmarks for understanding the passage of time such as, "What comes before lunch? What comes after lunch?"	Students create a timeline of a school day and calculate elapsed times between events. Challenge students to solve "What time will it be?" problems based on the schedule.

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CLASSIFICATION, PATTERNS, GRAPHING			
<i>One Watermelon Seed</i> by Celia Barker Lotteridge	Readers count from 1 to 10 as Max and Josephine plant their garden then by 10s as the watermelon, eggplants, beans, tomatoes, and other foods are picked.	Have children identify the skip counting pattern of tens in the book, and color the tens on the hundreds chart. Challenge children to find other patterns on the hundreds chart and color them as well.	Students use skip counting patterns to explore multiplication. They identify multiples of 10 on a hundreds chart and extend the pattern to solve multiplication and division problems.
<i>Pitter Pattern</i> by Joyce Hesselberth Story Guide	Pitter, pitter, pat! Pitter, pitter, pat! Hey, it's a pitter, pitter, pattern! Lu and her friends love spotting patterns in their daily activities. Lu learns that patterns can be found at soccer practice, during her piano lessons, in dance class, at snack time, and even at the park!	How many patterns can you spot as Lu goes about her week? Create your own pattern with colored dot stickers. Then “play” the pattern using instruments with corresponding dots.	Students identify, extend, and create increasingly complex repeating and growing patterns. They represent patterns using tables, drawings, and numerical rules.
<i>Soup Day</i> by Melissa Iwai	On a cold, snowy day, a young girl and her mother shop to buy ingredients for vegetable soup. At home, they work together—step by step—to prepare the meal. While the soup is cooking, they spend the time playing games and reading. Before long, Daddy's home and the family sits down to enjoy a homemade dinner.	Sort vegetables (or pictures of vegetables) by size, shape, color, number, weight, texture, whether the vegetables have leaves, or whether they are root vegetables. Sort again with a new attribute.	Students collect data about vegetables using multiple attributes, create Venn diagrams or sorting charts, and analyze which categories contain the most and fewest items.