

*Helping Parents Help Kids Love Math:
Math-Positive Games and More!*

Dr. Carrie S. Cutler www.carriecutler.com DrCarrieCutler@gmail.com

Parents make a difference in a child's math achievement with positive support and high expectations for success.

Activity & Link	Materials & Instructions	Where's the Math?
COUNTING AND NUMBER ACTIVITIES		
I Wish I Had	Materials: connecting cubes, dot strips or dot plates Instructions: Show a partially filled five or ten frame or dot plate showing 4 or fewer. Say, "I wish I had five." Students respond with the part that is needed.	Subitizing is the immediate apprehension of the quantity in a small set. Child "sees" up to 4 dots without counting. Counting on from first is an integral counting strategy for computation. Counting back is a kindergarten objective.
Birthday Candle Counting	Materials: candles, digit candles, playdough, muffin tin Instructions: Squish ball of playdough in each muffin cup. Child places digit candle and correct number of candles in each cup.	Child practices the counting sequence, one-to-one correspondence, and cardinality.
Cupcake Cup Counting	Materials: muffin tin, paper cup liners marked with digits, small objects Instructions: Child places correct number of objects in each cup.	Child experiences the counting sequence, matching the digit to its name, and cardinality. Cardinality means knowing that the last number said is the number in the set. For example, knowing that the number 4 means there should be 4 beans in that cup.
Lose a Tooth Counting Game	Materials: small marshmallows, drawing of mouth with spaces for about 20 teeth, die Instructions: Children place marshmallows in mouth for top and bottom row of teeth. Roll the die and remove that many teeth from the mouth. Place the removed teeth in a cup. Whoever loses all their teeth first is the winner.	Make daily activities word problems. "How many eggs do we need for our omelets?"
The Disappearing Train Game	Materials: blocks, die Instructions: With a partner build a train 20 cubes long. One partner rolls the die and removes exactly that number of cubes from the train until there are no cubes left. The person who takes the last cube is the winner.	The game gives practice with recognizing the spatial pattern on a die, counting with one-to-one correspondence, and comparing numbers.
Wrapping Paper Sets	Materials: scraps of wrapping paper or wallpaper with repeating items Instructions: Child circles sets of two objects, such as two teddy bears, two presents, or two balloons—whatever pattern is found on the wrapping paper. Next time, circle sets of three, four, or five.	Repeated practice with the same number develops automaticity. The process of circling a set foreshadows addition and joining sets.
Hole Punch of Fun Counting Game	Materials: index cards with numbers written on them, hole puncher	Punching the card supports one-to-one correspondence and counting. The child

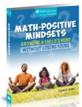
	Instructions: Child chooses a card, reads the number, and punches the correct number of holes into the card. Don't forget zero!	recognizes the digit and matches it to its value.
Parent Tips for Counting		
<p>* Count <i>everything</i> * Incorporate counting into the day * Don't forget zero * Ask good questions: "How many more do you need to have 5?" "You started with 6 and ate 2. Without counting again, can you tell how many you have?" * Rote count to 30 for PreK, with objects to 10 * Rote count to 100 for K, with objects to 20</p>		
GEOMETRY AND SPATIAL THINKING TASKS		
Transform	Materials: playdough Instructions: Sit across from a small group of students. Make a sphere with your playdough, then have the students do the same. When all the students have made a ball ("You can call it a ball. Or I call it a sphere.") then have them "transform" the dough into another 3D shape such as a cone, cylinder, cube, etc.	Adults scaffold children's informal language with mathematical terms. Children notice the composing elements of 3D shapes as they form the shapes.
Straw Triangles	Materials: straws, playdough or clay Instructions: Child cuts straws to different lengths. Roll small ball of clay to join three lengths of straws to make a triangle. Emphasize that a triangle has 3 sides. Make as many different triangles as possible.	Help children move into the understanding that a triangle is a triangle because it has 3 sides not because it looks a certain way.
Missing Dot Triangles	Materials: dot stickers, crayons, paper, ruler or straight edge (optional) Instructions: On several sheets of paper, place two dots. The dots may be in the same position on each sheet of paper or you may vary the position. Have the child place a third dot, then connect the dots to form a triangle. Emphasize that a triangle has three sides (the lines) and three corners (the dots). Have the child repeat as many times as possible, place the third dot in a different position each time. Compare the triangles and discuss the similarities and differences between them.	Though we typically present only the equilateral triangle to children, there are many triangles. The placement of the 3 rd dot determines the angles and sides lengths of the triangles children create by connecting the 3 lines.
Shark Teeth	Materials: gray construction paper (one per child), white construction paper folded into triangles (3 per child), scissors, glue Instructions: Child draws an oval on the gray construction paper to represent the shark's head. Ask how they might use the white construction paper triangles to make shark teeth. They may do this by snipping the end points of each of the three triangles. Glue the small triangles to the oval.	This activity blends art with mathematics and spatial thinking. Snipping the ends of the large triangles makes smaller triangles. So cool! Shapes can be composed of smaller shapes.
Tabletop Composing Shapes Activity	Materials: colored masking tape, 3D or pattern blocks Instructions: With tape, outline 2D shapes on tabletop (squares, rectangles, rhombi, different types of triangles). Children use the blocks to "compose" the larger shapes. E.g. six small squares might compose the rectangle.	Composition is a huge idea in mathematics, particularly in number and in geometry. This activity allows child to be creative while discovering that shapes can be composed of other shapes.

Parent Tips for Geometry and Spatial Thinking

- Have children compose (combine) and decompose (take apart) 2D and 3D shapes to create new shapes.
- Play with shapes in various orientations.
- Show examples and non-examples of shapes.
- Model correct vocabulary.

Picture Books and Simple Math Activities to Do Together

Bajaj, Varsha. <i>How Many Kisses Do You Want Tonight?</i> illust. Ivan Bates. New York: LB Kids, 2007.	This book counts from 1 to 10 as animal children request bedtime kisses from their parents. Readers might be surprised by the number of kisses requested by the human children in the story.	Young children put bright colored lip balm on their lips, kiss an index card, and count the kisses. Older children kiss the card, cover the kiss with beans and count to find the area of their kiss.
Light, Steve. <i>Have You Seen My Monster?</i> Cambridge, MA: Candlewick Press, 2015.	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.
Schoonmaker, Elizabeth. <i>Square Cat</i> . New York: Aladdin, 2011.	Eula, a square cat, feels out of place in a world of donuts and hoop earrings. She learns that being different is not necessarily a bad thing.	Geometry—shapes. Ask “What if there were no circles?” Children can draw a picture or describe what bicycles or cars would look like.
Schubert, Ingrid, and Dieter Schubert. <i>There’s Always Room for One More</i> . Asheville, NC: Front Street, 2001.	Beaver builds a boat. As his friends join him, the boat sinks deeper with each new passenger.	Children form boats out of heavy-duty tinfoil and place them in a water-filled pan or sink. They count and place blocks in the boat until it goes down.
Redding, Sue. <i>Up Above & Down Below</i> . San Francisco: Chronicle Books, 2006.	Rhyming text reveals the animal and human inhabitants in varied environments. Dogs go for a stroll above the subway lines and scarecrows keep guard above a rabbit family’s burrow.	Children go on a scavenger hunt to find out what is (a) above the sink, (b) under the teacher’s desk, (c) inside the filing cabinet drawer, (d) outside the school’s front door, and (e) on top of the playground slide. At the last stop there is a surprise such as a treat or book to be read.



Many of these teaching ideas can be found in *Math-Positive Mindsets: Growing a Child’s Mind without Losing Yours* (Cutler, 2020). The easy-to-follow Q&A format tackles more than 100 of the most perplexing questions about helping children with math from preschool to fifth grade. For parents and teachers!