

Playing with Number Sense

Number sense is the ability to think and work with numbers and to understand their uses and relationships. Counting is one aspect of number sense.

Some Books

Big Fat Hen by Keith Baker

Five Little Monkeys books by Eileen Christelow

The Doorbell Rang by Pat Hutchins

Over in the Arctic by Marianne Berkes

Ten, Nine, Eight by Molly Bangs

Anno's Counting Book by Mitsumasa Anno

Some Activities

1. Count everything! Count steps to the door. People at the table. Shoes in the closet. Point to each object as you count, reinforcing that the last number names the amount.
2. Give your child a set number of blocks. See how many ways you can make the number ____ with the blocks. Encourage kids to use different shape blocks, stack them, put them in rows, and have plenty of time to learn to concept of ____ with blocks.
 - Next time do the same block activity, but after kids have built sets of a set number, let them trace around the blocks to make pictures that represent their sets.
 - If the children seem ready, they can add the symbol of the number to their picture. Only after a thorough understanding of the connection between manipulatives and pictures and symbols are children ready to work with symbols alone. Don't rush it!
3. It's fun to get active with numbers! You can do movement and actions using numbers. Clap 3 times. Stretch 3 times. Hop 3 times. Blink 3 times. . . etc.
4. Have kids count on their fingers each time you read a counting book or sing a counting rhyme.
5. Kids can make paper sculptures using the number of the day. They can use a cardboard tube or Styrofoam cup as a base, and add 4 cotton balls, 4 feathers, 4 straws, 4 buttons, etc. Encourage your child to count out each material aloud one at a time.
6. Count during snack and mealtimes. How many spoons should we put on the table? How many grapes do you want? If you have two crackers and I give you one more, how many do you have?
7. Sing songs and rhymes that use numbers, such as "1, 2, Buckle my shoe" and "Baa baa black sheep."
8. When playing board games, help your child count. If they are on number 5 and spin or roll a 3, say "We need to count three more, so say 6 -7 -8. Now you're on 8!"
9. Think of a number between 1 and 10. Give your child clues like "bigger" or "smaller" until they guess. Draw numbers on your child's back in the bathtub and see if they can guess the number.
10. Point out comparisons when reading stories or in daily life. This bear is much bigger than the first bear. Do you think this fish is shorter or longer than his friend? Who is the tallest person you know? Can you get me the biggest ball?

Playing with Shapes

Geometry involves shape, size, space, position, direction, and movement. Young children learn about these by interacting with the physical world.

Some Books

My Shapes/Mis formas by Rebecca Emberley

Color Zoo by Lois Ehlert

So Many Circles, So Many Squares by Tana Hoban

Where's Spot? by Eric Hill

Mouse Shapes by Ellen Stoll Walsh

I Spy Shapes in Art by Lucy Micklethwait

Some Activities

1. Move and dance with your child to help learn about their position in space. Crawl and climb in and out and over and under and around objects.
2. Talk about what you see. Look at all the *circles* on your shirt! Those unit blocks in a row make a long *rectangle*. Do you think the cat is hiding *under* the couch? Or *behind* the door?
3. Cut food into different shapes. Do you want your sandwich in squares or triangles today? Let's eat all round foods for our snack! I'm giving you five rectangles of cheese to eat.
4. Puzzles and shape boxes are great for manipulating shapes. Use words like *turn, flip, or slide* when helping your child decide where to put the puzzle piece.
5. Build with blocks with your child. Use the correct words for the shapes. Do you want more triangles for this side, or do you want columns? How many unit blocks do you need for your tower? Tell me how you made that long bridge stay up. (Remember, when parents gently guide their children's play, the learning grows!)
6. Draw pictures with different shapes, or make collages with cut-out shapes. Draw a shape and make something out of it. Then draw a shape for your child and see if they can make something.
7. When you are looking at shapes with your child, help them trace over them and talk about the different angles and shapes. Point out the three sides and three angles (or corners) of a triangle. Look for other shapes that are the same and different.
8. In addition to playing with blocks, allow your child to play with boxes and other containers. See that things can fit together or inside each other. Use cardboard tubes and other materials to make pretend machines and buildings.
9. Cut play dough into shapes. Your child can make little balls and bigger balls. Make pretend rectangle crackers. Make pretend pizzas with circles of pepperoni and triangles of cheese.
10. Play with tangrams to make a variety of other shapes. Start with the simplest shapes. Have your child make any shape with tangrams and trace it, then see if you can figure out how to put the tangrams back in the outline!

Playing with Measurement

Measuring involves comparing and figuring out how long or short something is, how much something weighs, or how much something weighs, or how long it takes to do something.

Some Books

The Water Hold by Graeme Base

Actual Size by Steve Jenkins

Guess How Much I Love You by Sam McBratney

One, Some, Many by Marthe Jocelyn

10 Minutes Till Bedtime by Peggy Rathmann

The Grouchy Ladybug by Eric Carle

Some Activities

1. Practice measuring stuff around your house. Use lots of different objects to measure things: blocks, string, socks, etc. "Our table is 12 forks long and 8 forks wide!" This shows your child that inches, feet, metrics, etc. are only one way to measure things.
2. Cooking with your child involves lots of measuring. Allow your child to spoon flour into a measuring cup, or pour the liquid into the batter, or use teaspoons.
3. Talk about time with your child. "The store is about 10 miles away. It should take us about 15 minutes to get there. Let's look at the clock and see how long it takes." Or, "Do you think you can put your socks on by the time the pancakes are done? Let's see which takes longer."
4. Help your child estimate. "How much paper will we need to wrap the present?"
 - "How many books can fit into that pack?"
 - "How many cups do you think will fill the bowl?"
 - "How long will it take us to clean up the blocks?"
 - "How many kids do you think ride the bus?"

After kids have taken a guess, check it to find the actual answer. This helps your child make reasonable guesses. It isn't important whether they are right or wrong, but that they have fun practicing this skill.

5. Talk to your child about their day in ways that help them think of time and sequence. At bedtime, you can talk about what happened after breakfast, what was the *first* thing they did when they went outside (and *second*, etc.), what happened before dinner. You can also do this when reading stories together. "What was the first thing Goldilocks did when she went in the house?"
6. Sharing things help children understand pieces and wholes, or what they will later learn about fractions. Cutting up pizzas or a tray of brownies can help kids understand dividing a whole into pieces. Playing with unit blocks is another way to manipulate parts of the whole, because unit blocks are all proportional.
7. Look at a thermometer or listen to the weather to find out what the temperature will be. Then ask your child what clothes they should wear that day. You might compare the temperatures inside your house with the temperature outside.

Playing with Patterns

Understanding patterns is a building block for understanding algebra. Patterns are formed when things are repeated a number of times. Figuring out patterns involve seeing relationships and help us understand the underlying structure of things.

Some Books

Pattern Fish by Trudy Harris

A Pair of Socks by Stuart Murphy

Brown Bear, Brown Bear by Bill Martin

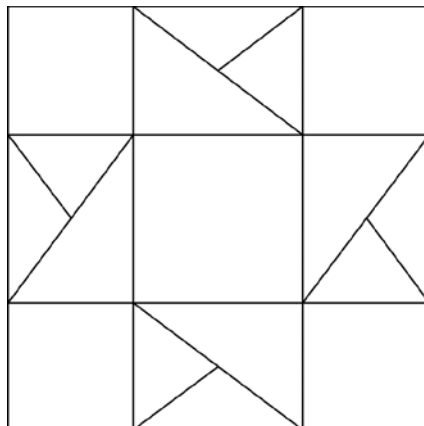
Jump, Frog, Jump! by Robert Kalan

Caps for Sale by Esphyr Slobodkina

Over in the Meadow by John Langstaff

Some Activities

1. Talking about the routines of your days helps your child see patterns. It also helps your child learn what to expect and feel a sense of order and security.
2. Sing songs that have phrases that repeat, like *Old MacDonalD Had a Farm* or *Head, Shoulders, Knees and Toes*. Encourage your child to sing along on the refrains.
3. Describe what your child hears and sees and does that relate to pattern:
 - “Look at the traffic light! Yellow, then red, then green. . . yellow, red, green.”
 - “Listen to the rhythm of the drums. . . let’s try to do that.”
 - “You lined up all your blocks. . . one triangle, one square, one triangle. . .”
4. Point out patterns everywhere you see them: on clothing, hallways, walls, on buildings, in books. Invite your child to make a pattern with blocks or other toys. Ask them to describe what pattern they made. Cut out two shapes from construction paper and let them glue them in a pattern.
5. Using beads or pasta, help your child make a simple 1-2, 1-2, 1-2 pattern with color or shape. As they get older, kids can use more than two items to create even more complex patterns.
6. Read books about colors and ask your child to find that color around your house. Talk about the colors of objects. You can let your child choose between two colors. “Do you want the yellow sticker or the orange sticker?” “Would you like the green apple or the red apple?”



Playing with Data (matching, sorting, classifying, graphing)

This involves collection, organizing, and presenting information in a lot of ways. Working with data includes matching objects, recognizing same and different, sorting objects into groups, making collections, and using charts and graphs.

Some Books

Five Creatures by Emily Jenkins

Lemons are Not Red by Laura Vaccaro Seeger

How Many Snails? By Paul Giganti Jr.

Is It Red? Is It Yellow? Is It Blue? by Tana Hoban

Bread, Bread, Bread by Ann Morris

Hannah's Collections by Marthe Jocelyn

Some Activities

1. When you are cleaning up, show your child where things go, such as “All the pans go in this cupboard, and all the lids go in the drawer” or “All the socks go in this pile.” Practice sorting things into groups.
2. Give your child collections of things that can be sorted in different ways, such as plastic animals, shells, buttons, pinecones, rocks, etc. to explore ways to group things together.
3. See if your child can sort toys or shoes or clothes by color or size. (All red here, all not red there.) Talk about quantity by matching the items from one pile with the other pile. Are there more in this pile or that pile?
4. Make charts about all sorts of things: weather, family jobs, feeding the dog, favorite colors or ice cream flavors. This helps your child see how we communicate information so that others can understand it.
5. Make grocery lists together and put items into groups. All fresh produce in one column, all canned items in another, dairy, cereals, etc.
6. When putting groceries away, let your child help you sort items into all the things that go in the refrigerator, all the items that go in the freezer, and those that go in the cupboard.
7. Play with objects in the bathtub and put into two groups: all the things that float and all the things that don't float. Let your child suggest other items to try.
8. After reading *Five Creatures* by Emily Jenkins, make your own family graph with similar characteristics like hair and eye color, food preferences, etc. Use stickers or stamps to chart how many in the family can read or how many like fish.

