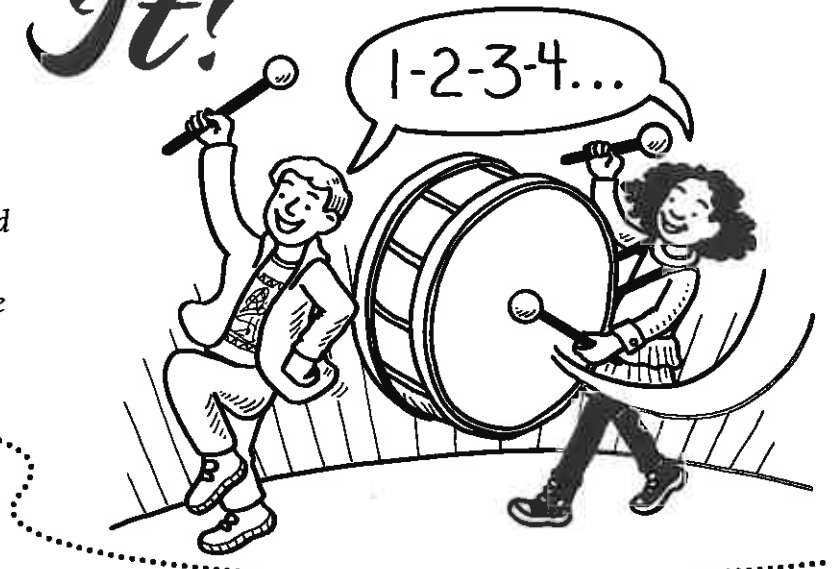


Count on It!

From the first moment your youngster started counting on his fingers, he began enjoying the world of math. With that same wonder, he can learn to count to 100, to count by 5s and 10s, and more. Use these creative activities to have fun with counting.



Getting started

One-to-one

When your child counts items or actions, he learns that numbers have meaning. Here are ways he can practice this concept of *one-to-one correspondence*:



- **How many steps?** Challenge your youngster to walk from his bedroom to the kitchen, counting his steps as he goes. How high did he count? That's the number of steps he took.

- **How many snacks?** Let your child scoop 1 tbsp. raisins onto a plate. Ask him to count how many there are. Explain that the last number he said is the total number of raisins.
- **How many jumps?** Go outside so your youngster can jump rope. Have him count jumps to know how many times he skips rope without missing.
- **How many licks?** Give your child a lollipop, and tell him to count aloud each time he licks it. Can he get to 100 before the lollipop is gone?

Penny power

Count pennies—and write and identify numbers—with this sticker activity.

Help your youngster write the numbers 1–20 on round stickers (like the blank tags used for garage sales). Then, she can stick each one to a penny and drop all the pennies into a bag.



Take turns drawing a penny from the bag. Read the number aloud, and place the penny on a table or on the floor (number side up) in the correct order. Keep selecting and inserting the numbered pennies where they go.

When they're all lined up, your child should count them—touching each one as she goes. Now ask her to count backward from 20 to 1 the same way.

Idea: Label 50 pennies 1–50, and try the activity again.

Beginning anywhere

Stop-and-go

Counting doesn't always start at 1! Play this game to help your youngster work on starting at other numbers.

Begin by choosing a number to count to, such as 50, 75, or 100. Sit in a circle, and pick one person to begin counting from 1. Meanwhile, another person (not in the circle) rolls a die over and over. When she rolls a 1 or a 6, she yells, "Stop." Then the next person in the circle takes over counting. *Example:* If the first player stopped at 4, the new counter would start with 5.

Keep going around the circle until someone says the end number (say, 75) and wins that round. Choose a new "roller," and play again.

Variation: Pick a number, and count backward from it. This time, the player who says "zero" wins.

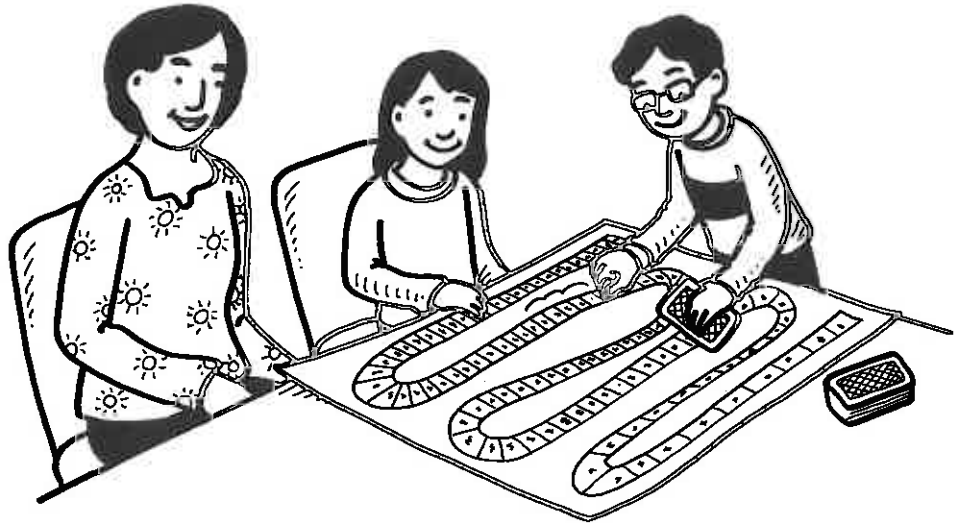
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Which way?

Here's a fun game that combines counting forward, counting backward, and counting from different numbers.

On a sheet of paper or poster board, help your child draw a path with 100 squares and label them 1–100. Place a deck of cards facedown (picture cards removed, ace = 1). Then, have each player put a token (bingo chip, eraser) on any number he chooses.

To play, take turns drawing a card. If it's black (spades or clubs), move your token forward by the number on the card. If it's red (diamonds or hearts), move backward. *Example:* Say your token is on 15. Draw a black 6, and count up to 21. But draw a red 3, and count down to 12. Remind your youngster that he doesn't start counting with the number he's on (15), but rather with the next number up (16) or down (14). *Note:* If the move would take him off the board by going over 100 or



under 0, he stays put. Play for a set amount of time, and the person on the highest number wins.

After a few rounds, can your child say where he's going to land before he begins counting? If so, he's beginning to master the concepts of adding and subtracting!

Skip counting

Nickels and dimes



Use nickels and dimes to count by 5s and 10s—and to get experience using real money.

Gather nickels and dimes from around the house, and have your youngster separate them into two piles. Ask him to take several dimes, count

by 10s (10, 20, 30) and tell you the total (30 cents). Let him keep counting different-sized handfuls and announcing the result. When he has mastered that, he can grab handfuls of nickels and count by 5s (5, 10, 15).

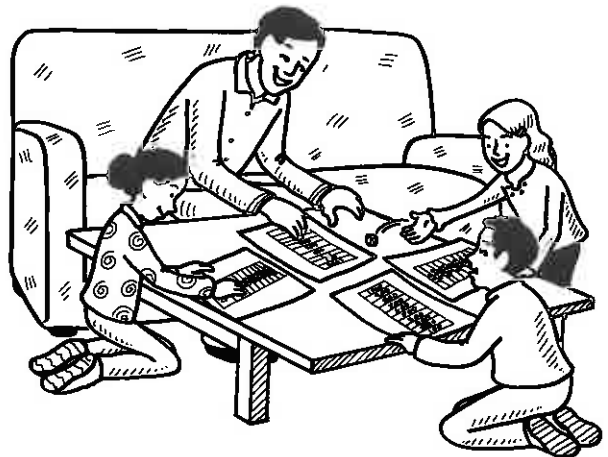
Once your child is comfortable counting nickels and dimes separately, he could count them together. Give him a few dimes and a few nickels. Suggest that he count the dimes first (10, 20, 30, 40) and then add in the nickels, counting by 5s (45, 50, 55). Or he might begin with the nickels (5, 10, 15) and then count the dimes (25, 35, 45).

Race you to 1,000

To reach the top of the ladder, your youngster will have to count by 100s all the way to 1,000!

Have each player draw a “ladder”—10 rectangles, one on top of the other—on a sheet of paper. Label the bottom rung 100, the next one 200, and so on up to 1,000. Then, each person should put a game token below her bottom rung. To play, take turns rolling a die. Move your token the number of rungs rolled, counting by 100s as you go. *Example:* Roll a 3, count “100, 200, 300,” and leave your token on the 300 rung.

The first player to reach 1,000 wins. But she must arrive by exact count. For instance, if she's on 800 and rolls a 4, she stays on 800, and her turn ends.



Marvelous Math Games III

Children love playing games with family and friends—and the good news is that games often naturally use math! Here's our third collection of math games for little ones, and they all can be played with items found around your home. Enjoy them together as your child practices number recognition, counting, adding, and subtracting.



Egg carton scramble

Find your number, and see if it's the largest one. This versatile game works on number recognition or addition. Either way, it dishes up fun.



You'll need: empty egg carton for each player, markers, tokens (beans, buttons)

1. Have each player randomly write the numbers 1–10 in 10 sections of her egg carton. She should write 0 in the other two sections.

2. Each player places a token in her carton. Then, she closes the lid and shakes.

3. Open the carton to find your token. Which number did it settle on? Read your numbers aloud. The person with the largest number gets a point. (Note: If there's a tie, play again.)

4. Play four more rounds. High score wins.

Variation: To practice addition, each player should use two tokens. Open the carton, and add together the two numbers your tokens landed on. The point goes to the player with the largest sum.

Number hunt

Searching for things around the house has never been so much fun! (And your youngster will work on number recognition and counting at the same time.)

You'll need: deck of cards (face cards removed, ace = 1), paper bag filled with 12 different household items (crayon, spoon, block)

1. Place the deck of cards facedown in a stack.
2. Take turns drawing one card and one item from the bag. The player reads the number (say, 6), looks at the item (a crayon), and runs to find that many of the item (6 crayons).
3. Play three rounds. Then, everyone counts the total items they gathered. The one with the most is the winner.

Sets of 10

Adding can be made easier by grouping numbers into 10s. Try this fun game that's all about finding ways to "make 10."

You'll need: deck of cards (with 3–4 players, use 2 decks)

1. Shuffle the cards (face cards removed, aces = 1). Deal eight cards faceup in the middle of the table.
2. The first player picks out cards totaling 10, making as many sets of 10 as possible (examples: 3 + 7, ace + 9, 2 + 5 + 3). Deal new cards into the vacant spots so there are eight cards again.
3. The next player then picks out as many sets of 10 as he can find. Take turns until all the cards are used and no more sets of 10 can be formed.
4. Whoever makes the most sets wins the game.



continued

Back-to-back

Play this lively game with three or more people to practice addition and subtraction.

You'll need: 2 pads of paper or 2 small whiteboards, 2 markers

1. Have two players stand back to back, each with paper or whiteboard and a marker. A third player is the caller.
2. The two players each write a number 0–9. Then, they should turn their papers or whiteboards so the caller can see their numbers, but the two players can't see each other's.
3. The caller announces the sum of the two numbers. (*Example:* If the numbers are 4 and 2, the caller would say "6.")
4. Each player tries to figure out his opponent's number. To do that, he should subtract his number (4) from the sum ($6 - 4 = 2$). Then, he calls out his opponent's number (2). *Note:* Players could do the math in their heads or on their paper or whiteboard.



5. The first person to correctly answer gets a point.
6. After five rounds, the high scorer wins. Switch callers, and play again.



Monster on the loose

Watch out! A monster is loose in town! Everyone's a winner in this game as players use number recognition and addition to knock down—and rebuild—their town.

You'll need: large sheet of paper or poster board, pencil, Legos, 2 dice

1. Together, draw 30 boxes all around the paper to make a town. Randomly write a number 1–6 in each box.
2. To make the town's buildings, stack Legos on each box to equal the number shown. So, a box labeled "4" gets a stack of 4 Legos.
3. Then, the players become the "monster" who's knocking down buildings. The first player rolls the dice and removes buildings matching the numbers rolled. (If she rolls a 2 and a 3, she removes a 2 stack and a 3 stack.) If no building matches, it's the next player's turn.

4. Take turns rolling the dice and removing buildings. Play until you have knocked down all the buildings. Now, play again, and rebuild your town!

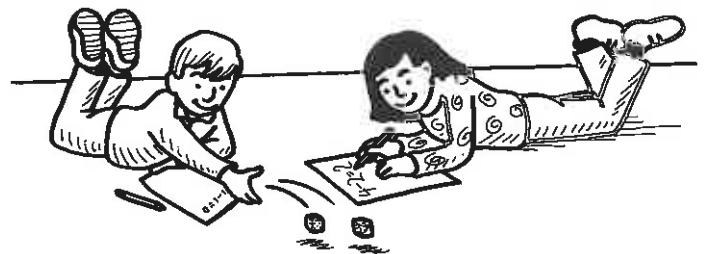
Variation: For a more challenging game, roll the dice, add the two numbers rolled, and remove that many Legos. But you can only remove complete buildings. For example, if you roll a 1 and 6, you might take away stacks equaling 7, such as 1 and 6, 3 and 4, or 1, 2, and 4.

Subtraction race

Subtract and then add to find your score. Be the first to reach 20 to win the game.

You'll need: 2 dice, paper, pencil

1. Roll the dice, and subtract the smaller number from the larger number. For instance, roll 3 and 6, and subtract 3 from 6 for a score of 3. *Hint:* Write your score down to keep track.
2. After the first turn, add the score to your previous score. *Example:* Roll 5 and 1 ($5 - 1 = 4$), and add 4 to your score ($3 + 4 = 7$, so your score is now 7).
3. The first one to 20 wins.



Sensational Science

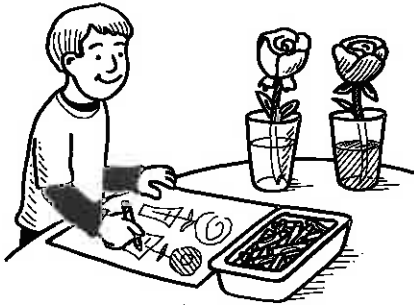
Watching flowers “drink,” building a “bird’s nest,” sinking a “submarine”—little ones can learn about the world around them by experiencing it firsthand. Here are hands-on experiments and activities that let your youngster discover and explore science.



Flower power

This experiment shows your child how water travels up a flower’s stem to reach the petals.

Materials: two cut flowers (white or light-colored), scissors, two glasses, water, food coloring, paper, crayons



Help your youngster cut about an inch from the bottom of each stem at an angle. He should fill each glass about halfway with water and add four drops of food coloring to one glass. Then, he can put a flower in

each glass. Ask what he thinks will happen to the flowers. Let him check them every few hours and draw pictures to record any changes.

He will see that in the glass with food coloring, the flower will turn that color! Why? You can explain that flowers need water to survive, and they “drink” it up through their stems—this is called *capillary action*. When placed in colored water, the color travels up the stem and into the petals, too.

Nest-building fun

Birds are naturally good “engineers.” With this activity, your child will get an idea of the process behind making a nest.

Materials: objects from nature (twigs, dirt, grass, leaves), water

Together, take walks to look for bird’s nests. Encourage your youngster to look in tree branches, in trunks of dead trees, or even on utility poles or other high spots. Using binoculars or a magnifying glass, she can carefully observe their size, shape, and materials.



Tip: Let her take along a sketchpad and colored pencils so she can draw and label the nests she finds.

Now your child could try her hand at building her own bird’s nest. Help her gather materials from nature—the same items birds have access to. Next, she can think about ways to arrange them into a nest shape. What would make the materials stick together? (*Example:* She might moisten dirt with water and use it as glue.) As she designs and builds, she’ll work on engineering principles—and think like a bird!

Sinking submarine

How can a submarine sink—and then float? Try this experiment with your youngster to find out.

Materials: empty 2-liter plastic bottle with cap on, sink filled with water

Ask your child to predict whether the bottle, his “submarine,” will sink or float when he puts it in a sink full of water. Then, let him place the bottle on its side in the water to find out. (The submarine will float because it is full of air, and air is not as dense as water.)

But what if the bottle contains water? Have your youngster fill the bottle with water and replace the cap. Tell him to predict what will happen now—and then put his submarine back in the water. (It should sink to the bottom.)

A real submarine begins its mission with air in its *ballast tanks* so it can float. Then, the crew lets seawater into the tanks so the sub can sink into the ocean. When they’re ready to return to the surface, they pump out the water and force in compressed air.

continued



Spill-proof glass

Your child can actually keep water from spilling out of an upside-down cup! Let her learn about air pressure as she masters a “magic” trick to perform for family and friends.

Materials: glass or plastic cup, water, index card larger than the glass or cup’s mouth

Have your youngster fill the glass almost to the top with water and put the card on top. Then, she should hold the card against the glass and flip it upside down over a sink. Ask her to predict what will happen when she gently removes her hand. (The card should stay firmly on the glass, with no water spilling out.)

Why? The water creates a seal between the card and the rim of the glass. When your child turned the glass over, the water pushed down on the index card. But the card didn’t fall off because the air outside the glass pushed up even harder—that air pressure holds the card snugly against the rim.

Easy move

A wheel is round, and it rolls—making it a helpful tool. Here’s an experiment that demonstrates how wheels make it easier to move objects.

Materials: 5 drinking straws, 2 same-size hardcover books

Your youngster should arrange the straws side by side on a table and place a book on top of them. Let him put the second book beside the first, but without straws underneath. Tell him



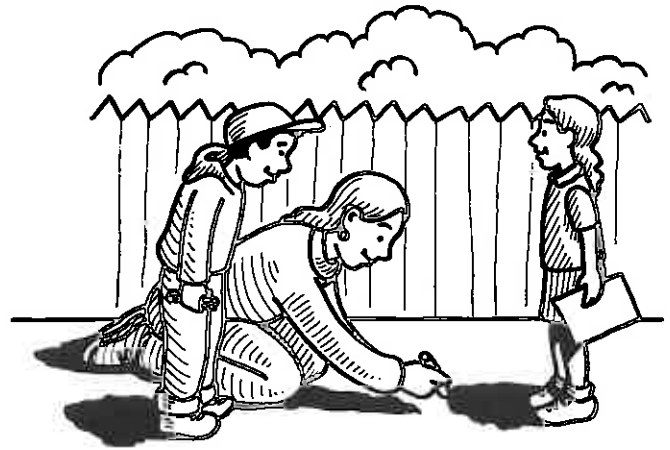
to push each one with one finger. Which one does he think will go farther?

He’ll discover that the book on the straws travels farther. Can he explain why? (Straws are round, like wheels, and wheels are simple machines that make things easier to move.) *Idea:* Have your youngster think of real-life examples where wheels make it easier to move things (or people). He might say that trucks can carry heavy loads, and bicycles, skateboards, or roller skates can move him!

Me and my shadow

Depending on the time of day, the sun appears high or low in the sky. This activity lets your child see how that affects her shadow.

Materials: sidewalk chalk, markers, pencil, paper, timer



At noon on a sunny day, ask your youngster to stand on the sidewalk while you trace around her shadow with chalk. Help her line up the markers end-to-end to measure the length of her shadow, and write down the time of day and the length. *Example:* “Noon, $2\frac{1}{2}$ markers long.”

Then, have her predict how her shadow might change each hour of the afternoon. Set a timer, and check back every hour to record her shadow’s length and the time. She’ll find that her shadow gets longer as the sun appears lower in the sky. Shadows are shortest at noon because that’s when the sun appears highest.

Idea: Have your child graph her shadows by writing times (12:00, 1:00, 2:00) along the bottom of a piece of paper and lengths (1 marker, 2 markers, 3 markers) up the left side. Then, she could color in bars for each hour, showing how long her shadow was.