

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

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Icahn Charter School 4
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TOOLS & TIDBITS

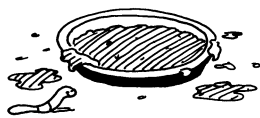
Measure your name

Ask your youngster how long his name is.

He'll probably tell you the number of letters, which is one way of measuring. But what if he wrote it down and measured it with paper clips or dry macaroni? How many paper clips long is his name? Have him write his name larger and smaller. How do his measurements change?

Mud pies

Science learning can occur anywhere, even in a patch of mud. Encourage



your child to pose questions while she squishes

mud between her fingers. She might wonder what will happen to her mud pies overnight. What if it rains? Or what would the mud's texture feel like if she added sand? Let her experiment and observe what happens.

Book picks

▣ *One Hundred Hungry Ants* (Elinor J. Pinczes) will delight your youngster as he follows these silly ants intent on dividing into smaller and smaller groups.

▣ Whether exploring plants, ice, or engineering, your child will find something to love in *The Curious Kid's Science Book: 100+ Creative Hands-on Activities for Ages 4–8* (Asia Citro).

Just for fun

Q: How do fish pay for things?

A: With sand dollars.



Down—and up—for the count

Counting crayons, counting toys, counting girls, counting boys—this is just the beginning of a life full of numbers! Try these clever counting activities with your youngster.

Number stack

Use blocks and a die for this fun counting game. The first player rolls the die and stacks that number of blocks, counting as she goes. (Roll a 4, stack 4 blocks, and say, “1, 2, 3, 4.”) The next player rolls and counts to make her own stack. Keep rolling and adding. After three rounds, who has the highest tower?

A whole handful

Fill a bag with 10 small items (pom-poms, marshmallows, beads). Let your child reach in and grab a handful. Have her look at the handful, estimate how many she grabbed, and write down the number. Then, she can count the objects. How close was her estimate? Put the items back, and now it's your turn to

grab, estimate, and count. Learning to estimate will help her see if her math answers make sense. *Tip:* When she's comfortable estimating up to 10 objects, try again with 20.

Forward and back

Name any two-digit number. Challenge your youngster to count the next three numbers (for 17, she would count “18, 19, 20”). Then, ask her to count *backward* three numbers from your original number (“16, 15, 14”). Now she names a number for you to count from, forward and backward. 🦋

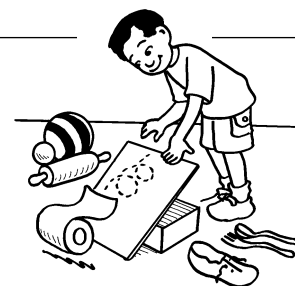


On a roll

Will a dinner roll actually roll down a hill? What about a fork? Let your child play junior scientist by classifying (sorting into groups) objects by whether or not they roll.

Suggest he build a ramp by propping one end of a cookie sheet on a box. Together, gather household items like rolls, silverware, toilet paper, cards, shoes, and balls.

Have him predict which items will roll. He should place the items, one by one, at the top of his ramp and let go. Which ones roll? After he sorts the objects into two piles—those that roll and those that don't—ask him what's similar about each group. He might say the ones that roll have rounded edges, while the ones that don't roll have straight edges. 🦋



Stay in shape

Exercising your youngster's thinking muscles by identifying shapes and their characteristics is a great way to pass time.

● **I can spy it.** At home or on the go, play I Spy with shapes. Your child might spot a sign and say, "I spy a circle." Then, you try to identify what he's spying. Now it's your turn to spy a shape and have him find the object.



● **I can move it.** Let your youngster draw a game board with 20 squares, marking the ends "Start" and "Finish." On separate scraps of paper, have him draw a square, rectangle, triangle, and pentagon. Put the scraps facedown. On each turn, a player picks a slip, counts the shape's sides, and moves a token that number. For example, if you get a triangle, you would move 3 spaces. First to the finish line wins.

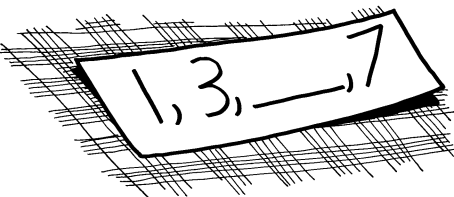
Variation: Add shapes like trapezoids and hexagons. Or move by the number of vertices (corners)—your child will see that the number of vertices equals the number of sides.



Q & A Follow my pattern

Q: My daughter is learning about patterns at school. What are some ways to practice with her at home?

A: Working with patterns will help your child think logically and also prepare her for more complex math like multiplication and algebra later on.



Ask your daughter to act out a noisy-wiggle pattern of actions and sounds—and then you have to figure out what goes next. She could clap, jump, jump, whistle, clap, jump, jump. You would continue her pattern by doing what's next (whistling). Take turns making up fun patterns for each other to complete.

Make patterns with numbers, too. You could say, "1, 3, 5" and ask what comes next (7). Or write down a pattern and leave a blank: 1, 3, —, 7. She supplies the "5" to complete the sequence.

SCIENCE LAB

Something smells good

Your child will learn how her sense of smell affects taste in this yummy experiment.

You'll need: two flavors of pudding or yogurt, blindfold, spoons

Here's how: Blindfold your youngster so she can't see the food, and have her pinch her nose. Then give her a taste of each flavor. Ask her if she can identify the flavors.

What happens? It will be hard for her to tell the difference between the two foods.

Why? The brain uses taste *and* smell to recognize what we're eating. When the sense of smell is blocked, the brain often can't tell the difference between foods of similar textures.

Idea: Have your child unplug her nose partway through eating—can she identify the flavors now? Try again with the blindfold only. Or do the experiment with food that has a different texture, such as fruit chews or jelly beans.



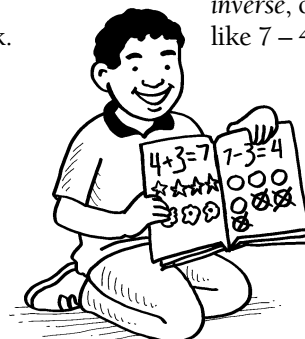
MATH CORNER

The pluses and minuses

Hot and cold... day and night... addition and subtraction. Show your youngster how addition and subtraction are opposites when he makes this book.

Help him stack several pieces of paper together, fold them in half, and staple them together along the crease. On a left-hand page, he can write and illustrate an addition problem, such as

$4 + 3 = 7$, using stickers, drawings, or thumbprints. On the facing right-hand page, have him write and illustrate an *inverse*, or opposite, subtraction problem like $7 - 4 = 3$ or $7 - 3 = 4$.



Encourage your child to fill the other pages with more inverse problems, perhaps $5 + 6 = 11$ and $11 - 6 = 5$, or $8 + 8 = 16$ and $16 - 8 = 8$. When he finishes, he can read his addition and subtraction book to you!

OUR PURPOSE

To provide busy parents with practical ways to promote their children's math and science skills.

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