

Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

May 2019

INFO BITS

Round, then solve

Before your child solves a problem, suggest that she round to see what a reasonable answer would be. She could practice in the grocery store. If a gallon of milk is \$3.76 and a loaf of bread is \$2.29, she would round the milk to \$4.00 and the bread to \$2.00, then add $\$4.00 + \$2.00 = \$6.00$. If her actual answer is close to \$6.00, it's probably right. If not, she'll know to try again.

Thunder's in the bag

Why does your youngster hear thunder after he sees lightning? He can find out by blowing air into a paper bag, twisting it closed, and smashing it. The air rapidly compresses (its molecules move closer together), creating a loud sound. Air in the sky expands when lightning heats it—but quickly cools and compresses, and makes the sound of thunder.

Book picks

📖 *Do Not Open This Math Book: Addition + Subtraction* (Danica McKellar) offers clear explanations of the newest math strategies. Great for children and parents alike!

📖 *The Periodic Table: Elements with Style!* (Simon Basher and Adrian Dingle) introduces chemical elements in a clever way. Each cartoon-style entry is "written" by the element itself.

Just for fun

Q: How do wasps fly in the rain?

A: They wear their yellow jackets.



Math: Morning, noon, and night

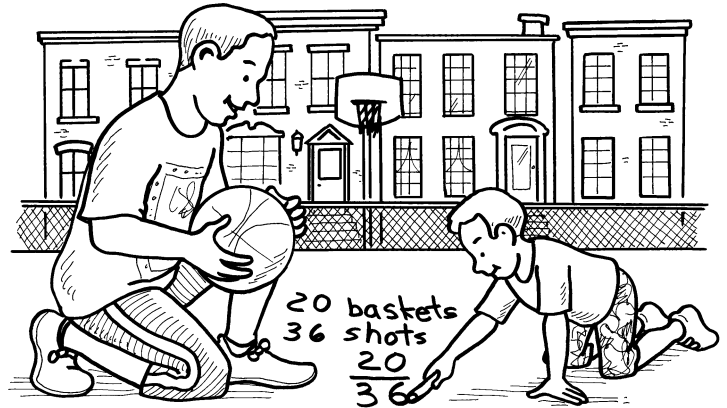
Make numbers part of your youngster's daily routine this summer—and watch him make strides in math. Try these ideas.

Breakfast math

Invite math to breakfast. Make up problems using the numbers on the cereal box and milk carton. Your child might say, "A serving of cereal has 106 calories, and a serving of milk has 83. How many calories is that in all?" ($106 + 83 = 189$) You could continue, "If the four of us each ate one serving of cereal with milk, how many calories did we consume?" ($189 \times 4 = 756$)

Afternoon playtime

Encourage your youngster to use math at the park. Play basketball, and have him figure out what fraction of attempted shots you each make. Whose fraction is larger? Or time him jumping for three minutes while he counts



each jump. He should divide the number of jumps by three to determine his jumps per minute.

Game night

Hold regular family game nights, and include games that involve numbers or logic. Appoint your child banker when you play Monopoly, Life, or Payday. He'll practice counting money and making change. Stretch his brain with logic games such as Qwirkle, Stratego, or Set. *Idea:* Look for games at yard sales and flea markets, or ask if your public library has games to check out. 📦

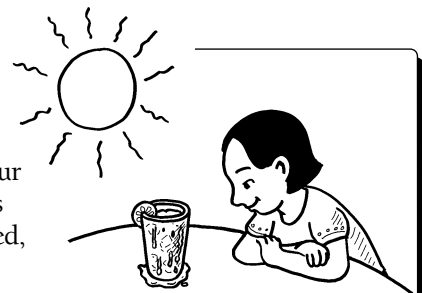
Iced tea science

On a hot, humid day, your child can watch the water cycle in action by making and drinking iced tea with you.

First, boil water in a teakettle. What does your youngster notice? Steam, or water vapor, comes out of the spout. That's water that has evaporated, or turned into a gas.

After you make your iced tea, have her pour a glass for each of you, and go outdoors to drink it. What happens when you set down your glasses? Water vapor in the hot air makes *condensation* on the cold glasses. It forms water droplets that "rain" onto the table—that's *precipitation*.

In nature, heat from the sun makes water evaporate. When the vapor rises high in the sky, where the air is cold, it condenses into clouds. 📦



Outdoor measurement contests

Encourage your youngster to see how the outdoors “measures up.” Here are measurement competitions for her to enjoy with family and friends.

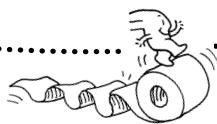
Measure and compare. Hold a scavenger hunt where players compete to locate the tallest and longest objects. First, have each person get a sheet of paper and list the same 10 items to search for (*examples*: tallest flower, longest stick). Then, set a timer for 10 minutes. Each person finds and measures the objects with a ruler or measuring tape and records their



results. When the timer goes off, they can compare their lists. Whoever got the most items that match the descriptions wins.

Toss and estimate. Let your youngster estimate distances. Take turns jumping as far as you can and marking your landing spots by writing your initials with sidewalk chalk. Each person could estimate

the distance she jumped in inches or centimeters, then measure to determine how close her estimate was. It’s not the farthest jump that wins the contest—it’s the closest estimate!



MATH CORNER

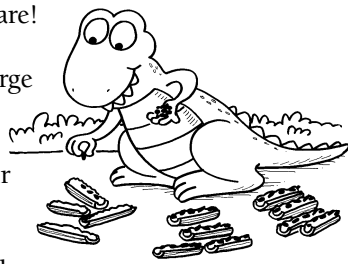
A dollar for the win!

Q & A Snack on division

Q: My son learned division in school this year. How can we practice it at home?

A: Snack time is a great time to work on division, since kids care about getting their fair share!

Put your child in charge of making “ants on a log” for your family. He could get 4 celery sticks



per person (12 sticks for a family of 3) and spread cream cheese on them. Then, have him dump out a box of raisins and count them. If there are 63 raisins and he divides them evenly among 12 celery sticks, how many raisins should each stick get? Since $63 \div 12 = 5$, remainder 3, he could put 5 raisins on each log—and eat the remainder!

Other days he can practice division with different foods. He might divide a container of cherry tomatoes evenly among four salads or a carton of blueberries among five servings of yogurt.

Would your child rather have a penny or a quarter? In this two-player game, the most money isn’t always the best.

You’ll need loose change (quarters, dimes, nickels, pennies) and a die. The object is to get as close to \$1.00 as possible without going over. Take turns rolling the die and collecting that number of coins. So if your youngster rolls a 3, she’d choose three coins—only she must pick at least two different kinds. For instance, she could select two quarters and one dime to make 60 cents ($25 \text{ cents} + 25 \text{ cents} + 10 \text{ cents} = 60 \text{ cents}$).

Keep rolling and adding to your total. Either player can stop at any time while the other person keeps going. Say your youngster stops at 96 cents. If you have 95 cents and roll a 2, the least you could take is one penny and one nickel ($1 \text{ cent} + 5 \text{ cents} = 6 \text{ cents}$). That would give you \$1.01 ($95 \text{ cents} + 6 \text{ cents} = \1.01)—and give your child the win!



SCIENCE LAB

Which swing is fastest?

A playground swing is a pendulum—it moves back and forth from a fixed point with the help of gravity. This experiment will show your child how the length of the chains affects how fast he can swing.

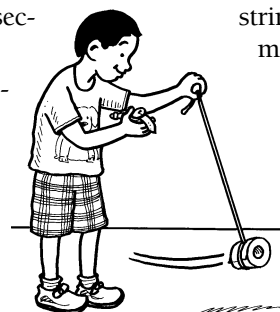
You’ll need: roll of toilet paper, 4-foot piece of string, watch with a second hand, scissors

Here’s how: To make a pendulum, have your youngster tie one end of the string around the roll of toilet paper. Then, he should stand up, hold the loose end of the string so the roll hangs parallel to the floor, and push the

roll so it starts swinging. He can count how many times it swings back and forth in 10 seconds. Next, have him cut the string in half and repeat the experiment, using the same amount of force to push the roll.

What happens? With the shorter string, the pendulum swings more times in 10 seconds.

Why? The shorter string has less distance to travel to complete one swing. That’s why your youngster can go faster on swings with shorter chains. *Idea:* Go to a playground with different-length swings, and try it out!



OUR PURPOSE

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

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