

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

January 2019



Title I
Prince William County Public Schools

TOOLS & TIDBITS

Use your head

Encourage your youngster to do simple math problems in his head. For instance, say, "Aunt Christine and Uncle Larry are coming over. How many people will be here?" He might think, "There are 4 of us. My aunt and uncle are 2 more. $2 + 4 = 6$." Mental calculations will prepare him for math he'll do at school and home.

Powers of observation

Sharpen your child's observation skills with this idea. Secretly select a magazine photo that shows something from



nature, such as an animal, an apple, or an ocean wave. Cut out a small piece of the picture, and see if your youngster can guess what it is. If she sees black and white stripes, she might say it's a zebra or a skunk.

Book picks

▣ Your youngster can count change along with Pauline and John-John as they sell ice-cold drinks in *Lemonade in Winter: A Book About Two Kids Counting Money* (Emily Jenkins).

▣ *Over and Under the Snow* (Kate Messner) reveals nature's wonders in keeping animals safe and warm all winter in a hidden world beneath the snow.

Just for fun

Q: Why are fish so smart?

A: Because they live in schools.

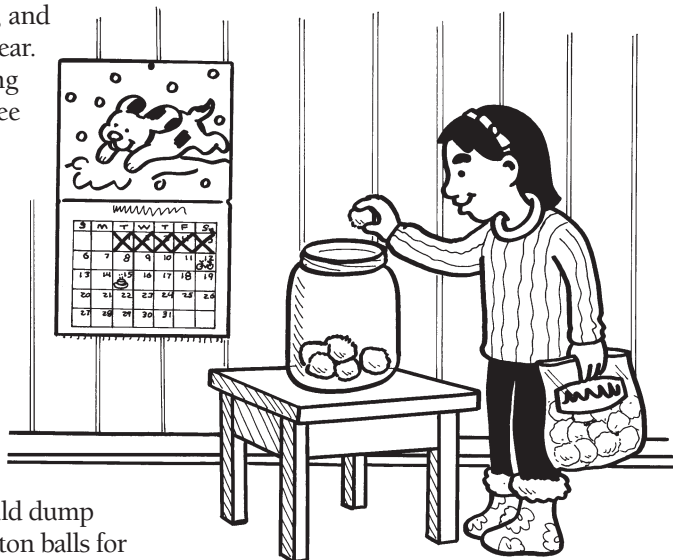


365 days of math

It has up to 31 numbers, and we use it every day of the year. What is it? A calendar! Hang one where your child can see it, and try these activities.

Calendar jar

Place a clear jar and a bag of small items (cotton balls, jelly beans) near the calendar. Each day, your youngster should fill the jar with the number of objects matching the date. For example, she would add 6 cotton balls on January 6. The next day, she would dump those out and count in 7 cotton balls for January 7. She'll build number sense as she counts and sees what different amounts look like each day.



Number of the day

Have your child look for creative ways to use each day's date. On January 20, she could set a timer and read for 20 minutes. On the 24th, you might bake 2 dozen (24) cookies together. And on the 30th, suggest that she build a Lego castle with 30 bricks.

Special countdown

Let your youngster place stickers or draw pictures on special dates like birthdays, holidays, and school events. Then, she can keep track of how many days are left until each date. Perhaps today is the 8th, and her birthday is on the 18th. She could count on from 8 to 18 or use subtraction ($18 - 8 = 10$) to discover that her birthday is in 10 days. 🦋

On the lookout for winter

"I found an icicle!" "There's frost on that leaf."

Go on a walk with your youngster to search for signs of winter. Before you head out, let him predict what he will see. He might list snow, ice, bare branches, acorns, nests, animal tracks, and even people wearing winter coats, hats, and gloves.

He can bring his list on your walk and mark off each item he notices. Along the way, he could add other winter sightings not on his list—perhaps berries, shovels, or smoke from a chimney.

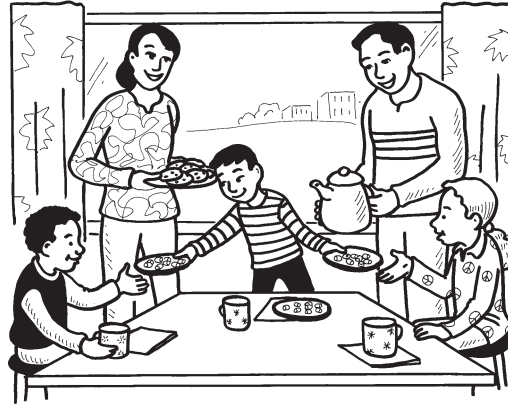
Idea: As your child warms up indoors after your outing, encourage him to draw or paint a wintry scene that includes all the signs he saw. 🦋



Is it equal?

The concept of *equal* is important to kids from an early age—especially when it comes to sharing treats! Here are ideas for helping your youngster explore equal groups and equal parts.

Hot cocoa party. Let your child invite friends over for hot cocoa and snacks. He can divide up a bowl of mini-marshmallows to make equal groups. If he has 25 marshmallows and 2 guests (plus himself), how many marshmallows will he give each



person? Suggest that he deal them out to everyone, then put away any leftovers. He'll see that each friend gets 8 mini-marshmallows and 1 is left over.

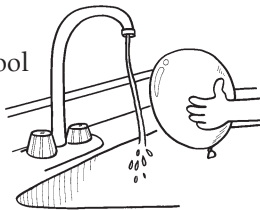
Shape puzzles. Help your youngster cut circles and squares out of construction paper. Now have him cut some shapes into 2 equal parts (halves) and others into 4 equal parts (fourths or quarters). Mix up all the parts, and use teamwork to put the shapes back together. Be sure to use fraction words! You might say, "I have *one-half* of this red circle. Do you

have the other *half*?" *Tip:* Once he's comfortable with halves and fourths, he could cut shapes into thirds, too.

SCIENCE LAB Watch water bend

Energize your youngster's excitement for science with this experiment that shows how *static electricity* can bend water.

You'll need: wool hat (or other wool clothing), inflated balloon, sink



Here's how: Have your child put on the hat and rub the balloon over it quickly while she counts to 20. Run a slow, steady stream of water from the sink, and let her immediately hold the balloon as close to the water as she can without touching.

What happens? The water curves and bends toward the balloon!

Why? Rubbing the balloon over the wool hat creates static electricity. Negative particles (electrons) from the hat move to the balloon, "charging" it. Water has both electrons *and* positive particles (protons). The negatively charged balloon attracts the protons in the water, pulling them toward the balloon.

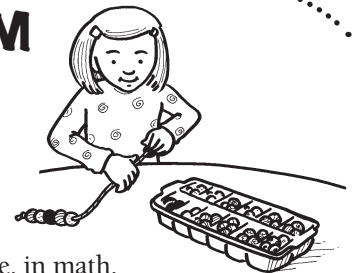
Q & A Fine motor skills and STEM

Q: My daughter loves STEM lab at school! Her teacher mentioned that the kids are working on fine motor skills there along with STEM projects. How could my child practice those skills at home?

A: Your daughter's teacher knows that hand strength and coordination are important in STEM. For example, in math, your youngster needs to count and sort small objects and to measure accurately. She also uses fine motor skills for science and engineering activities, such as planting seeds, pouring liquids, and gluing together craft sticks to build bridges. Finally, technology tasks like typing and using a mouse require good hand control.

To practice, let your daughter see how high she can stack pennies, then count the coins as she drops them one by one into a piggy bank. Or have her sort beads by color, using tweezers to place them into separate sections of an ice cube tray, and string them onto yarn in a pattern.

Also, ask her to help with household STEM-related activities like gardening, scooping and measuring ingredients for recipes, and typing emails to her grandparents. She'll build fine motor skills while discovering that STEM is important in real life.



MATH CORNER What number is missing?

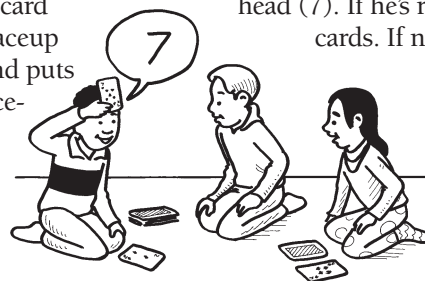
Let your child practice finding *addends* (a number added to another number) with this game.

Materials: deck of cards (face cards removed, ace = 1)

One person deals 1 card facedown and 1 card faceup to the other players, and puts the rest of the cards facedown in a pile. Then, each player puts his facedown card against his forehead (without looking),

number side out. The dealer tells the player the sum of his two cards. So if he sees a 7 on a player's forehead and a 2 on the table in front of him, he would call out "9" (because $7 + 2 = 9$). Now the player has to say the number on his forehead (7). If he's right, he keeps both cards. If not, he returns them to the bottom of the pile.

Switch dealers every round, and play until all the cards are gone. The player with the most cards wins.



OUR PURPOSE

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

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