

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

May 2021

Fargo Public Schools

Title I

TOOLS & TIDBITS

Estimate handfuls

How much is a handful? That depends! Let your child grab a handful of popcorn, estimate the number of pieces, and count to check his estimate. Now you take a handful—does he think you're holding more or less? Next, ask how many raisins he estimates each of you could hold. Try it to find out.

Follow that butterfly!

With your youngster, follow a butterfly around. She'll see it visit one flower after another. Explain that it's doing an important job: collecting and depositing *pollen* that flowers use to create new flowers. How many flowers did her butterfly *pollinate* before it flew away?

Book picks

▣ Your child can go on a magical ride to compare numbers of skunks, dogs, dinosaurs, and more in *Is 2 a Lot? An Adventure with Numbers* (Annie Watson).

▣ *Shark Lady: The True Story of How Eugenie Clark Became the Ocean's Most Fearless Scientist* (Jess Keating) tells of a pioneering scientist and the graceful creatures she studied.

Just for fun



Q: How did the puppy walk through a rectangle?

A: He went in the doggy door.

Summertime story problems

This summer, your child can be a newscaster, an artist, and an actor—all while she practices strategies for solving word problems. Share these playful ideas.

Deliver a newscast

Suggest that your youngster pretend to be a TV reporter delivering “news” based on a story problem she creates. *Example:* “Breaking news! Five elephants, two lions, and 10 monkeys have escaped from the zoo. How many animals are on the loose?” Reasoning aloud can help her solve the problem. (“Well, folks, $5 + 2 = 7$. And $7 + 10 = 17$. That's 17 animals.”)

Go on a math picnic

Before your next picnic, let your child write and illustrate problems on paper plates. On her brother's, she might draw watermelon slices and write, “Andy's watermelon slice had 9 seeds. Leah's had 6. How many more seeds did Andy's have than Leah's?” As you eat, read and

solve. (Andy's slice has 3 more seeds, because $9 - 6 = 3$.)

Act it out

Encourage your youngster to write and act out “math tongue twisters.” *Example:* “Sally has 17 seashells. She sells 7 seashells by the seashore. How many seashells does Sally have left?” Now she can pretend to walk along the shore and pick up 17 seashells as she recites the tongue twister. She could “sell” 7 seashells to a crab and say the number sentence: $17 - 7 = 10$.

Water “sticks” together

Drip, drop, drip. These experiments let your youngster explore water to learn about *cohesion*.

● **On a coin.** Have your child drip water onto a coin, one drop at a time. He can count each drop as it falls—he may be surprised by how many drops the coin will hold before water spills over the edge. That's because water molecules are *cohesive* (they stick to each other).

● **In oil.** Help your youngster measure $\frac{1}{4}$ cup cooking oil into a clear glass, then squeeze water from a sponge into the oil. Due to cohesion, the water droplets combine and sink to the bottom.



Star-spangled math

Oh, say, can you see ... patterns of stars and stripes? The American flag is full of math for your youngster to explore. Use a flag, or a photo of one, for these activities that combine math and social studies.

Stripes = colonies. Have your child count the red and the white stripes and say how many there are in all: 7 red + 6 white = 13 stripes. Explain that the 13 stripes represent the 13 original colonies. Now ask him what pattern they



make (red, white, red, white). *Idea:* Suggest that he make his own red-and-white patterns. He could thread marshmallows and strawberries on a skewer or create a red-and-white paper chain.

Stars = states. Help your youngster count the stars on the flag, then count the states on a U.S. map. He'll notice that there are 50 of each—one star for each state.

Next, encourage him to look closely at the rows of stars to discover the pattern.

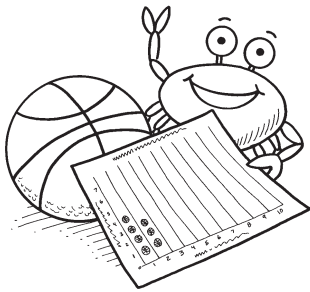
They alternate: 6 stars, 5 stars, 6 stars, 5 stars. *Idea:* Let him use foil star stickers or a white crayon to make 50 stars on blue paper in a different pattern.

Q & A Summer graphing

Q: My daughter enjoys graphing in school. What are some fun ways she can make graphs at home?

A: Encourage your child to create graphs based on what she does over the summer.

For example, she might graph how often she plays basketball. On a sheet of paper, she could label one column for each week of summer ("Week 1," "Week 2"). Then, she can draw a basketball in the correct column—lining them up evenly—each time she plays.



Or maybe she'll graph ice cream treats she eats (cones, sandwiches) or books she reads (chapter books, biographies).

Let your daughter display her graphs, and ask her questions like "When did you play basketball the most?" or "How many more cones than sandwiches did you eat?"

OUR PURPOSE

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

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MATH CORNER

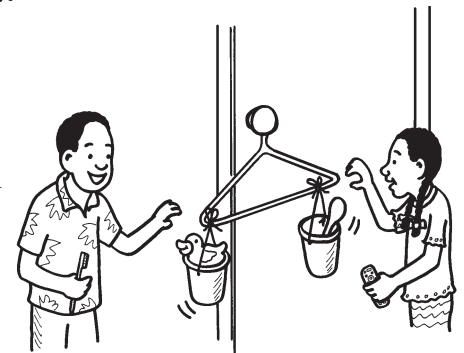
Let's weigh it!

Which weighs more: a chess pawn or a domino? A toy car or a rubber ducky? Your child can make this balance scale to find out.

Materials: hole-punch or sharpened pencil, 2 identical paper cups, scissors, yarn, clothes hanger, small toys

Help your youngster punch two holes toward the top of each cup and use yarn to tie the cups to opposite ends of the hanger. Hang his "scale" from a doorknob or shower rod.

Now ask your child to predict which items weigh more or less and to line them up from heaviest to lightest based on his prediction. To test his predictions, have him compare two objects at a time, placing one in each cup. The cup with the heavier item will drop down. As he weighs the items, he can rearrange their order as needed. How close were his predictions?



SCIENCE LAB

Why do we wear sunscreen?

This experiment teaches your youngster about the sun's powerful rays—and shows her why it's important to wear sunscreen.

You'll need: tape, dark-colored construction paper, magnetic letters or pebbles

Here's how: Let your child tape a piece of construction paper to a porch or table in full sun. Now she can place magnetic letters or arrange pebbles on the paper to spell her

name. Have her wait several hours, then remove the objects.

What happens? The paper surrounding the letters will be lighter than the area underneath—and she can read her name.

Why? Sunlight contains ultraviolet (UV) light, which breaks down chemical bonds in things like paper, fabric, and skin. The letters blocked the sunlight, protecting the paper, like sunscreen protects our skin.

