

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

March 2016

Pine Street Elementary School

TOOLS & TIDBITS

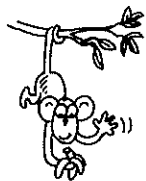


Sort the fruit

After grocery shopping, ask your youngster to sort the fruit you brought home. She might organize it by color, size, shape, texture, or whether the fruit has seeds or a pit. Ask her to explain her “sorting rule” each time. (Note: Make sure she washes her hands before handling the fruit.)

Tail tales

Why do animals have tails? Lots of reasons, actually. Take turns naming animals and what they do with their tails. For instance, horses, cows, zebras, and elephants swat away flies. Squirrels use tails for balance, monkeys hang onto branches, and dogs wag them when they're happy. Let your child draw pictures of the animals you discuss—with their tails in action!



Book picks

- *Three Pigs, One Wolf, Seven Magic Shapes* (Grace Maccarone) tells a three-little-pigs story with tangrams. Includes a set of tangram puzzle pieces and ideas for using them.
- Follow along with a grandmother and grandson working in the garden in *Yucky Worms* (Vivian French)—and learn about all the good that worms do. Part of the Read and Wonder series.

Just for fun

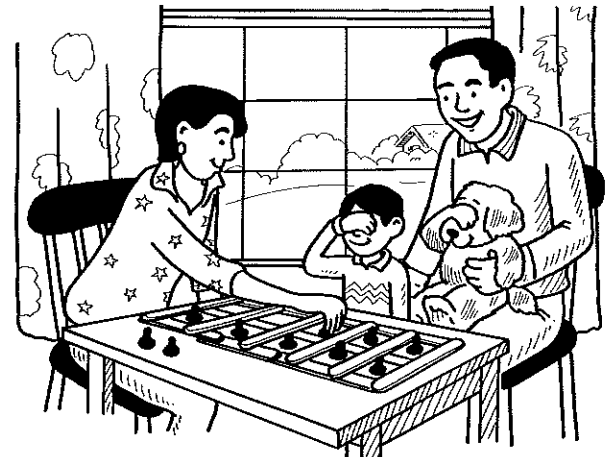


Q: Why was the painter hot?

A: Because he put on an extra coat.

Quick! How many?

Subitizing is a big word for a simple but important skill—the ability to recognize the number of objects in a small group without actually counting them. Being able to instantly recognize quantities will allow your child to count, add, subtract, multiply, and divide faster and more easily. Use these ideas to help him develop this skill.



Finger “flash”

Put your hand behind your back, quickly bring it out, holding up a few fingers for your youngster to see—but not count—and return your hand behind your back. Can he correctly name the number? *Idea:* Try this with straws or chopsticks, too.

Boxes of dots

Divide a sheet of paper into 30 boxes. In each one, draw 1–7 dots, varying the designs (arrange dots in rectangles or circles, line them up, or scramble them). Have your child place a square of construction paper on each box. Then, lift up a square for 3 seconds, and put it back down. Your youngster calls out the number he saw. If he's right, he keeps

the paper square. Take turns, and whoever collects the most squares wins.

Ten frame

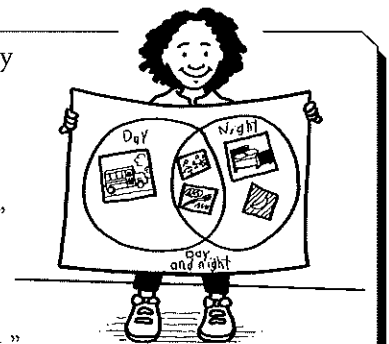
Help your child glue 12 craft sticks into a *ten frame*—a grid with two rows of 5 boxes each. While he closes his eyes, put small objects (game tokens) into a few boxes, one per box. Have him open his eyes and instantly tell you the number. Play again, filling different boxes. He'll practice *chunking*—or automatically grouping, for example, 5 tokens on the top and 3 on the bottom to “see” 8. ♻️

Day and night

Help your youngster understand patterns of day and night with this activity.

Let her cut out pictures from old magazines. Then, she can make a big Venn diagram by drawing two circles that overlap in the middle. Have her label one circle “Day,” the other circle “Night,” and the overlapping part “Day and night.”

Now, tell her to glue the pictures where they go. For example, she might paste a picture of a school bus into “day,” a photo of a bed into “night,” and one of people eating into the “day and night” section. Ask her why certain activities are better suited to day or night. ♻️

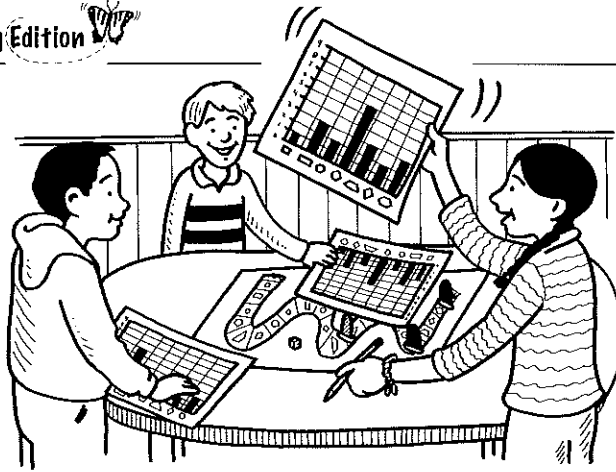


Graph the shapes

Which shape will win the race? Play this game to practice shape recognition, patterns, and graphing.

1. Have your child design a game board with a snaking path from “Start” to “Finish.” Help her divide the path into boxes and draw a shape in each one, creating a pattern. She could use these shapes: square, rectangle, circle, triangle, pentagon, trapezoid, rhombus, and hexagon.

2. On a separate sheet of paper, each player should start a bar graph with a column divided into boxes for each shape.



the shape with the most boxes wins the game.

Idea: Make a game board with 3-D shapes: cube, prism, cone, cylinder, pyramid, sphere. Your youngster can draw or cut pictures of objects with these shapes from catalogs.

3. Now, roll a die, and move the number of spaces rolled. Color in a box on your bar graph for the shape you landed on. (*Note:* Be sure to line up the boxes evenly.)

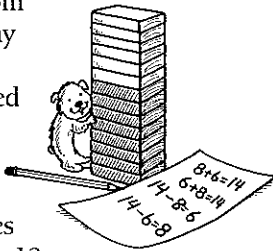
4. Play until everyone crosses the finish line, and compare your graphs. Tally the totals—



MATH CORNER Subtraction strategy

When your child is working on subtraction, encourage him to “think addition.” He’ll learn about the *inverse relationship* between addition and subtraction—and gain a strategy for solving subtraction problems.

Give him a subtraction problem, or he might use one from his homework, say $14 - 8$. Have him snap together 8 red Legos. Then, he could add blue Legos, counting on until he reaches 14 (“9, 10, 11, 12, 13, 14”). How many blue blocks did he add? That number gives him the answer to his subtraction problem: $14 - 8 = 6$.



Suggest that your youngster write all the addition and subtraction sentences he can make from the problem. Encourage him to use the blocks to create them: $8 + 6 = 14$, $6 + 8 = 14$, $14 - 8 = 6$, $14 - 6 = 8$.

Note: For older children, try double-digit subtraction, such as $28 - 11$.

Q & A Talk up math

Q: I’ve never been a numbers person. How can I make sure my daughter feels better about math than I do?

A: For starters, be enthusiastic about math. Never let on that you don’t enjoy numbers, or she’s likely to take that as permission to feel the same way. Then, consider all the math you do every day—and you’ll see that you really are a numbers person. For instance, you use math as you pay bills, follow a recipe, calculate a tip, or take measurements for window blinds.

When kids are little, math is naturally fun for them. Take advantage of that by playing games that involve math, such as Yahtzee or gin rummy. Read storybooks with math themes. And here’s another idea: At the store, pay for small purchases with cash, and let your daughter handle the money. She’ll feel grown up, and she’ll learn about coin values and counting change.



SCIENCE LAB Chase away the pepper

This fun experiment teaches a powerful chemistry lesson about *surface tension* and how water behaves.

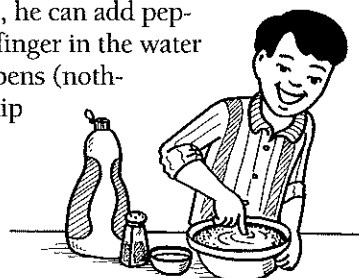
You’ll need: bowls, water, ground black pepper, dishwashing liquid

Here’s how: Let your child fill the bowl with water. Then, he can add pepper. Have him put his finger in the water and observe what happens (nothing). Next, have him dip his finger into dishwashing liquid and immediately place that finger into the bowl of water.

What happens? The pepper will “run away” from his finger—moving to the sides of the bowl.

Why? There is surface tension on top of the water that acts like a stretchy “skin.” But add something dense like dish soap, and the surface tension is reduced.

The water molecules scatter, which your child can “see” by watching the pepper that rides along the top of the water. *Fun fact:* In everyday life, surface tension allows insects like the water strider to “walk on water.”



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