

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

October 2020

Spring-Ford Area School District

TOOLS & TIDBITS

Clocks are everywhere

Your child can find clocks and tell time just about anywhere, from the microwave to the town square. When she spots one—digital or analog—help her read it. Talk about what usually happens at that time of day. (“You’re right, the cable box says 7:30. That’s when we eat breakfast.”)

Force of friction

Playing with toy cars teaches your youngster about *friction*, or the resistance caused by two surfaces rubbing together. Ask him to roll a car across the carpet and then across a hard floor. He’ll see that the car travels farther on the floor because there’s less friction.



Book picks

▣ In *Albert Keeps Score* (Daphne Skinner), a little brother wants an equal amount of everything his sister has—pumpkin seeds, books, and more. Part of the Mouse Math series.

▣ Your child will get a glimpse of Earth and its place in the universe in *Here We Are: Notes for Living on Planet Earth* (Oliver Jeffers).

Just for fun

Q: What can you put in a barrel of water to make it lighter?

A: Holes.



This is the way we add

As your child learns about addition, he’ll start by using objects—then move on to drawing pictures and finally writing numbers. Have fun together with these autumn-themed addition ideas.

Acorn adding

Pretend to be squirrels getting ready for winter, and go outdoors to gather nuts. After you’ve each found some, let your youngster add his plus yours. He can count the nuts in each group, find the total, and say the problem: “I collected 5 nuts, and you found 7 nuts. $5 + 7 = 12$.”

Leaf pictures

Enjoy a nature walk and collect colorful leaves from the ground. Your child can sort them into piles and add the piles to make different combinations. (“I have 3 red leaves and 6 orange leaves. $3 + 6 = 9$.”) After your walk, he could draw leaf problems on paper. Maybe he’ll color 8 yellow leaves and 2 green leaves, and say, “ $8 + 2 = 10$.”



Apple equations

Let each family member cut out 10 “apple slices” from red paper and a “pie crust” from brown paper. Have each person write any number (1–20) on his pie crust. Now everyone writes an addition problem on each of his slices that equals a number on anyone’s crust. If your crust says 15, your youngster could write $8 + 7$ on an apple slice and place it on your crust. Ask your youngster to check all the equations. 🍏

Design a seesaw

A seesaw is a familiar example of a simple machine called a *lever*. Here’s how your youngster can create her own seesaw.

Have your child roll play dough into a ball, flatten the bottom, and set it on a table. Now ask her to balance a ruler on the *fulcrum* (the support for a lever, in this case the play dough).

Now let your youngster make two more play dough balls to represent each of you—one smaller and one larger. She should place them on opposite ends of the ruler. She’ll see that “you” push down on one end of the lever, lifting “her” up. Suggest that she experiment with moving each of you closer to and farther from the fulcrum until she balances the seesaw! 🍏



Pumpkin studies: Big learning, big fun

A pumpkin is full of opportunities for your youngster to explore science and math. Get a pumpkin, and try these activities.

Outside. Encourage your child to observe her pumpkin and think of words to describe it. She might say it's *orange, round, smooth, and heavy*. Now ask her to count the number of stripes, or ribs. As she counts each rib, she could paint it or color it with a marker. That will help her keep track, and she'll end up with a colorful pumpkin.



Inside. Cut the top off the pumpkin so your youngster can observe what the inside looks and feels like. Explain that the firm part is called *flesh* (that's the part we use for pumpkin pie), and the stringy material is *pulp*. Have her count the seeds—suggest putting them in groups of 10 and counting them by 10s.

Fun fact: A pumpkin has about one row of seeds for every rib. Let your child look at different-sized pumpkins.

Which does she predict has more seeds? She could investigate to confirm her prediction.



MATH CORNER Coin caterpillars


Ten coins all in a row ... what do they make? A money caterpillar! With this idea, your child can learn about how much coins are worth.

Find the value

Let her line up coins (real or pretend) to make "caterpillars" of different lengths. Perhaps she'll use 6 pennies for one caterpillar and 5 nickels for another. Now help her count the money to figure out how much each caterpillar is "worth" (6 pennies = 6 cents, 5 nickels = 25 cents).



Show the price


Give your youngster a specific "price" (say, 38 cents). How many caterpillars can she make that are worth that amount? *Examples:* 3 dimes, 1 nickel, and 3 pennies or 1 quarter, 2 nickels, and 3 pennies. Can she form a caterpillar worth \$1? 

PARENT TO PARENT

Estimation made easier

My son Terrance is learning to estimate in school, and he wanted to estimate at home, too. My brother, who is a teacher, suggested that we set up a three-jar system to help Terrance practice estimating.

We got three identical clear jars. My son put 1 marble in the first jar and 5 marbles in the second. Then, I dropped a handful of marbles in the third jar. Terrance looked at the first two jars to estimate how many were in the third. Knowing how much space 1 marble and 5 marbles take up in a jar, he estimated 20. When he dumped them out—much to his delight—he was close (there were 18).

Now Terrance tries larger handfuls and different objects in the three jars. So far, he has estimated cereal rings, crayons, and dry pasta. It's satisfying for him to make such accurate estimates. 



SCIENCE LAB

Geology: Rock on!


Your youngster will be impressed to learn how some fossils form in rocks, with this edible experiment.

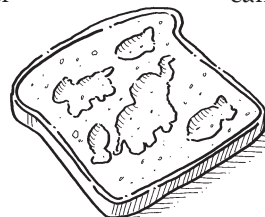
You'll need: 2 slices of bread, plastic wrap, small snacks (animal crackers, pretzels), heavy books

Here's how: Have your child lay a piece of bread on plastic wrap, arrange snacks on top, and cover with a second slice of bread and another piece of plastic wrap. Now help him set the books on the stack. After 10 minutes, he should pick up the

books, separate the layers of bread, and remove the snacks.

What happens? Your youngster will see imprints left by the snacks.

Why? The pressure from the books flattens the bread around the snacks, leaving imprints. In nature, pressure from layers of mud and other materials in the Earth form imprints in rocks called fossils. By studying them, scientists can learn about animals or plants that lived long ago and made the impressions. In this case, your child will see the shapes and sizes of his snacks—and then you can enjoy the snacks together! 



OUR PURPOSE

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

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