

Math+Science Connection

Intermediate Edition

Building Understanding and Excitement for Children

November 2020

Spring-Ford Area School District



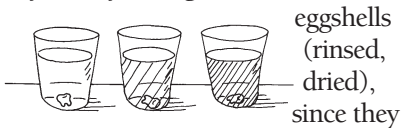
INFO BITS

Cookie symmetry

Your youngster will enjoy serving these symmetrical “cookies.” Let her flatten play dough and cut it into circles, stars, and hearts. How would she cut each cookie so each side is a mirror image of the other? (Down or across the middle.) If she flips one half over the *line of symmetry* (where she cut), it should match the other side exactly.

Teeth and soda

Let your child see for himself the effects of soda on his teeth. He can use baby teeth you might have saved or use



eggshells (rinsed, dried), since they have calcium like teeth do. Have him soak one in water, one in orange juice, and one in cola. How do the teeth look after a week? A month?

Book picks

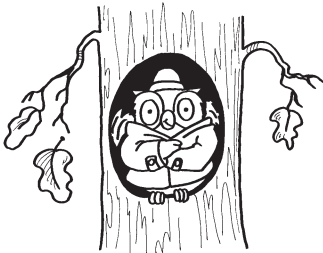
Get a kick out of math with *Riddle-icious Math* (Joan Holub), a joke book of riddles and equations.

Through poetry, *Leaf Litter Critters* (Leslie Bulion) tells about earthworms, bacteria, and other creatures that live in leaf piles.

Just for fun

Q: What falls in autumn but never hits the ground?

A: The temperature.



Thanksgiving multiplication

This month, your youngster can be thankful for multiplication! Share these Thanksgiving-themed ideas to let him learn multiplication facts in playful ways.

Turkey facts

Have your child draw a dozen turkeys, each with 12 tail feathers, on separate sheets of paper. He can number the turkeys 1–12 and write a matching multiplication fact on each feather. For instance, on turkey number 8, his “feather facts” would be $8 \times 1 = 8$, $8 \times 2 = 16$, and so on up to $8 \times 12 = 96$. You can quiz each other (“What is 7×6 ?”) and use the “feathers” to check the answer (42).




Cornfield arrays

While the corn pudding is in the oven, your youngster can make cornfield arrays. Let him draw a cornfield with even rows and columns (perhaps 5 rows of 4 cornstalks) and say the equation shown ($5 \times 4 = 20$). Then he

can draw the same number of stalks a different way (4 rows of 5 stalks) and give the problem ($4 \times 5 = 20$). How else could he make 20?


Mealtime equations

Suggest that your child write and illustrate scrumptious word problems to share at Thanksgiving dinner. *Example:* “We used 2 12-oz. bags of cranberries to make the cranberry sauce. How many ounces of cranberries did we use?” He can write the equation on the back: $2 \times 12 = 24$ oz. 

Be a bird-watcher

“That bright red bird is a cardinal!”

Your youngster can observe and identify birds with this project. Let her make a bird feeder by spreading peanut butter or shortening on a pinecone or an empty cardboard tube and rolling it in birdseed or dry oats.

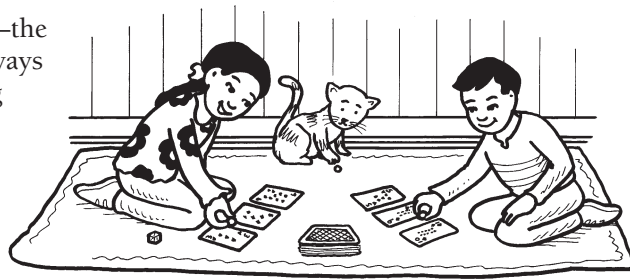
Then, she can hang it from a tree branch with yarn or string. When birds visit, have her take photos or draw pictures and identify her feathered friends. She might check out a field guide from the library, use a free app like Seek, or search the internet for “bird identification.” 



Number sense with decimals

Let's get straight to the point—the decimal point, that is! Here are ways for your child to practice reading and comparing decimals.

Mark the number line. Using sidewalk chalk outside, have your youngster draw a long horizontal line and add 11 short vertical lines to divide it into 10 equal parts. She should label the first mark 0 and the last mark 1. Then, counting each mark in between as 0.1, she can fill in her



number line (0.1, 0.2, 0.3). Now have her stand on any number and “hop” to math problems. If she's on 0.2, you might ask, “What is $0.2 + 0.3$?” (She would hop three tenths to 0.5.)

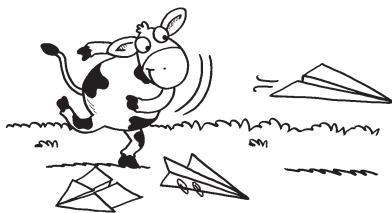
Place the decimal. Get a deck of cards (no face cards, ace = 1), one marble per player, and a die. For the die, cover 4, 5, and 6 with squares of masking tape, and mark 1, 2, and 3 on them. Stack the

cards facedown. Each player draws three cards and lays them faceup in the order drawn (say, 9, 5, 3). Take turns rolling the die—roll 1 and put your marble (decimal point) before the first digit (0.953), roll 2 and place it before the second digit (9.53), or roll 3 and it goes before the third (95.3). Who made the biggest decimal? The smallest? 🎲

Q & A Back to the drawing board

Q: My son mentioned that he's learning the engineering design process in school. How can he try it out at home?

A: The engineering design process is creative problem solving in five main steps: ask/identify, imagine/brainstorm, plan, create, and compare/improve.



Get your son's wheels turning by helping him identify an engineering problem. Perhaps he wants to create a paper airplane that will fly all the way across the room. He could brainstorm different designs, then choose one to make and test. Now how could he improve his design? Maybe he'll try different kinds of paper or folds. Or perhaps he'll add paper clips.

After each “flight,” ask questions like “What worked well?” or “Why do you think your plane nosedived?” You'll encourage him to analyze his design and see any flaws as areas for improvement. 📦

OUR PURPOSE

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

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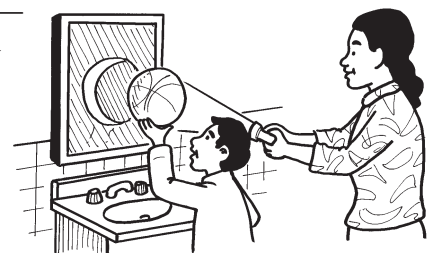
SCIENCE LAB

Watch the “moon” glow

The moon isn't a star—so why does it appear to shine? Your child will find out with this demonstration.

You'll need: washable marker, mirror, flashlight, soccer ball or basketball

Here's how: Have your child draw a big round moon on a bathroom mirror, close the bathroom door, and turn off the light. Now shine a flashlight (the “sun”) at the moon. Then, let him use the ball (the “Earth”) to partially block the sun. Can he create a crescent moon and a half moon?



What happens? Your youngster can't see the moon when the sun isn't shining on it. When he points the sun at the moon, the moon appears to shine. And the Earth casts a shadow on the moon.

Why? The moon reflects sunlight. When the Earth blocks the sun, all or part of the moon is dark. 📦

MATH CORNER

Choose the best unit

Your youngster wouldn't use millimeters to measure an elephant—but she might for an ant. Help her pick the best measurement unit for the job with this idea.

Animals

Take turns naming animals and choosing the unit that makes sense for measuring their length. Your child might pick inches or centimeters for a chipmunk because smaller units would be more precise for tiny animals. And she'd use feet or meters for a



buffalo—it would take too long to measure a huge animal with small units.

Household objects

Give your youngster a tape measure and a ruler, and send her on a mission to find the length or height of 10 items. She'll discover that either tool works for smaller things like a book or a remote control. But a tape measure is better for a bookcase or refrigerator so she doesn't have to keep moving the ruler. 📦