

Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

November 2014

Michigan Center School District

TOOLS & TIDBITS

Dice-stamping

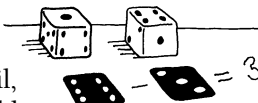
Dice + a stamp pad = math fun! Have your

child press two dice into a stamp pad and then onto paper.

With a pencil, he should add a

plus or minus sign and an equal sign. Then, he can answer the problem.

Example: Stamp a 6 and a 3, and solve $6 + 3 = 9$ or $6 - 3 = 3$.



Guess a scent

Let your little one explore her sense of smell with this guessing game.

Secretly place five items with strong smells (orange slice, cinnamon, coffee grounds) into small containers. Put a blindfold on her, and give her the jars to sniff, one by one. How many can she identify? Talk about ways people—and animals—use their sense of smell.

Book picks

■ You'll find math puzzles like "Exploding Food" or "Really Odd Jobs" to pose in *Bedtime Math: A Fun Excuse to Stay Up Late* (Laura Overdeck).

■ *11 Experiments That Failed* (Jenny Offill) is a funny book about a child who uses the scientific method for some very unusual experiments!

Just for fun

Q: What becomes smaller when you turn it upside down?

A: The number 9.



Here a shape, there a shape

Finding shapes helps your youngster notice the world around her—and provides a fun introduction to geometry. Try these activities.

Matchup

Help your child cut shapes from construction paper, using a different color for each type. *Examples:* red squares, blue circles, yellow rectangles, green triangles. Then, ask her to tape the shapes to objects around the house that match.


She might put a square on a coffee table book, a circle on a clock, a rectangle on her bedroom door, and a triangle on a wedge of cheese. Which shape is easiest to find? Which is hardest? Ask her why she thinks that is.

Photo hunt

Let your youngster use a camera or cell phone outside to snap pictures of flat (2-D) and solid (3-D) shapes. She could capture a six-sided window (a hexagon) or a plaque with five sides (a pentagon). Or she may spot a traffic cone (cone), a basketball (sphere), or a building's column (cylinder).



Print her pictures, and have her sort them by shape. Then she could make an album or a poster with sections labeled for each kind. *Bonus:* Can she find any shapes within shapes? She might see a rectangular door with a door knob that's a sphere, for instance.


Idea: For each flat shape, ask your child to count the sides and *vertices*, or corners. For example, a square has 4 sides and 4 vertices. For solid shapes, she would count the faces, vertices, and edges. A cube, for instance, has 6 faces, 8 vertices, and 12 edges. 

Pinecone forecasts

Here's a fascinating way for your child to use pinecones this fall.

Set up a weather station. Together, gather several pinecones from the ground. Have your youngster place them on a windowsill inside. In a notebook, help him make four columns labeled "Date," "Open or closed," "Today's weather," and "Next day's weather."

Observe and record. Each day, he can examine the pinecones and record whether their scales are open or closed. He should also record the weather (sunny, cloudy, rainy) now and again the next day.

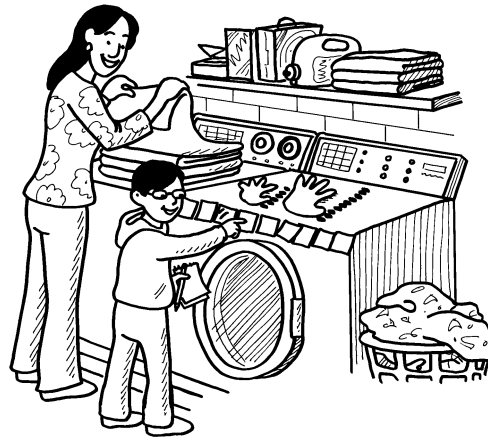
Over time, your child will learn an interesting fact: When the pinecones are closed, rain is on its way! 



Exploring measurement

Making and using his own “rulers” will give your child a good grasp of what measurement is about. Consider these ideas.

● **Hands.** Trace your youngster’s hand on a sheet of paper, and let him cut out the shape. Have him use it to measure the height of a coffee table (measuring its leg or base). How many hands high is it? Then, ask what he thinks would happen using your hand, and test to find out. (He’ll see that he won’t need as many of your “hands” to measure the same distance since your hand



is bigger.) *Idea:* Ask him to measure his “rulers.” He could line up pennies along each hand cutout and find the difference between them. (“Mommy’s hand is 4 pennies longer than my hand.”)

● **Sticky notes.** Help your child put notes evenly along the edge of a sheet of paper and number each note (say, 1 through 5). Next, he can use the sticky-note ruler to measure objects. He might find that a pencil is 2 sticky notes long and his truck is 4 sticky notes long. Or give him a pad of sticky notes, and let him measure various items. Encourage him to compare his findings: “The washing machine is 9 sticky notes across, and the dishwasher is $7\frac{1}{2}$ sticky notes. So the washing machine is wider.”



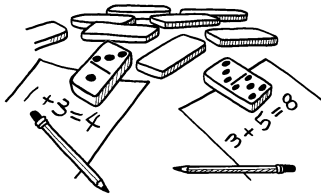
MATH CORNER

Add in fun

At school, your youngster is learning to add. Play this game together to let her practice her new skills at home.

Materials: set of dominoes, paper, pencil

1. Spread out the dominoes facedown. Have each player draw a domino and add the two numbers on it together. *Tip:* Use pencil and paper to do the math ($1 + 3 = 4$).



2. The person with the higher number gets both dominoes. If there’s a tie, pick one more each, and the winner gets all 4 dominoes.
3. Continue playing until all the dominoes are used. The player with the most wins.

Variation: Play a subtraction version where you subtract the smaller number from the bigger number ($4 - 2 = 2$). In this case, the player with the smaller number wins.

OUR PURPOSE

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

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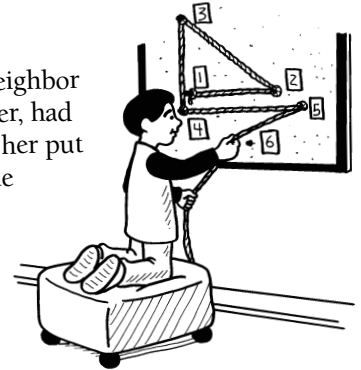
PARENT TO PARENT

Dot-to-dot

I saw the cutest idea at my neighbor Susan’s house. Susan, who’s a kindergarten teacher, had made a giant dot-to-dot for her daughter to help her put numbers in order. So I decided to try this at home with my son.

On our bulletin board, I arranged pushpins in the shape of a sailboat. By each pin, I stuck a square of masking tape. On the pieces of tape, I wrote the numbers in the order in which he should connect the pins to make the design.

Finally, I gave my son a piece of yarn to use for solving the dot-to-dot. He went from one number to the next, winding the yarn around each pushpin. By the time he got to the last number, the sailboat had appeared. Now he says he’s going to make a giant dot-to-dot for me to solve.



SCIENCE LAB

Before your eyes!

With careful observation, your little scientist will see a light-bending phenomenon.

You’ll need: drinking glass, water, straw

Here’s how: Have your child fill the glass halfway with water and stand a straw in the glass. Now she should look at the straw carefully from different viewpoints—the top half (the part above the water), the bottom (the part in the water), and then right at the midpoint where

the straw leaves the water. What does she notice?

What happens? The straw seems to jump where it leaves the water.

Why? We use light to see objects, and that light changes direction a little as it moves through air or water.

When it passes from water to air, it *refracts* (bends). So when she looks at the bottom of the straw through the water, but at the top part only through air, the straw appears to jump.

