

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

January 2020

Title I

Prince William County Public Schools

## TOOLS & TIDBITS

### Twinkle, twinkle

Stargaze together—no telescope necessary!

Share this hint with your youngster to tell if he's viewing a star or a planet: Stars appear to twinkle, but planets usually don't. Can he spot a planet (or two)? *Tip:* Get a sky guide from the library or use a free app so he learns the names of stars, constellations, and planets.

### Odd and even addresses

On many streets, houses or shops on one side have odd numbers, and those on the other side have even numbers. Look for streets like this when you and your child are out. She could read the numbers and figure out whether they're odd or even. *Hint:* A number is odd if the digit in the ones place is odd and even if the digit in the ones place is even.



### Book picks

▣ Cute little animals decide the best way to divide into equal teams in *Equal Shmequal* (Virginia Kroll).

▣ The average snowflake has 180 billion water molecules! Fascinating facts like that are sprinkled throughout *Curious About Snow* (Gina Shaw).

## Just for fun

**Q:** Who was the first animal in space?

**A:** The cow that jumped over the moon!



## Survey says: Graphs are fun!

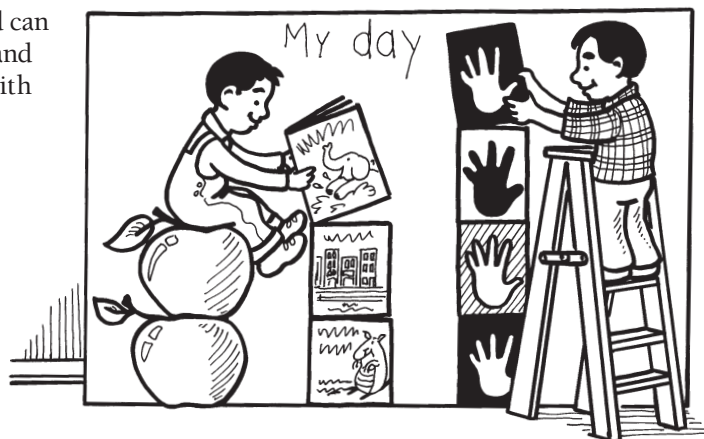
Graphs are packed with information. Your child can practice reading them and then make his own with these ideas.

### Be a detective

Encourage your youngster to learn facts from graphs. Perhaps he'll notice a graph in the doctor's office showing how much sleep kids need. Help him find his age group to see how long he should sleep. Or maybe he'll spot a graph in school about a fundraiser. How many rolls of wrapping paper did his grade sell—and which grade sold the most?

### Tell a story

Have your child make a graph based on a book. For instance, he could create a bar graph comparing the elements in a fairy tale (castles, dragons, knights). Invite him to use his graph to tell you a story. ("Once upon a time, 3 knights



lived in 1 castle. There were 6 dragons, so each knight got 2.")

### Graph your day

Keeping track of everyday activities is easy with a picture graph. Your youngster might draw an apple to stand for a meal or snack, a book to represent reading, and a hand for each time he washes his hands. At the end of the day, ask questions about his graph. ("How many times did you eat?" "How many more times did you wash your hands than read?")

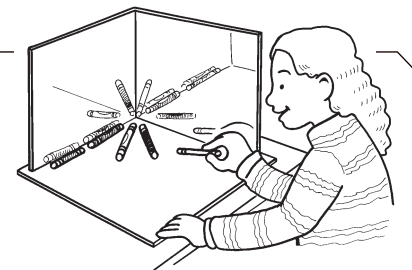
## Mirror science

Mirror, mirror, on the wall, how do you reflect it all? Here's how your youngster can explore the science behind this fascinating everyday object.

Let your child form a right angle (like an L) with two mirrors, then lay down several crayons so their tips point toward the angle. The reflections create a colorful pattern!

When light hits a mirror, everything in front of the mirror is reflected back. When two or more mirrors are placed at an angle to each other, they reflect light back and forth, creating multiple reflections—this is how a kaleidoscope works.

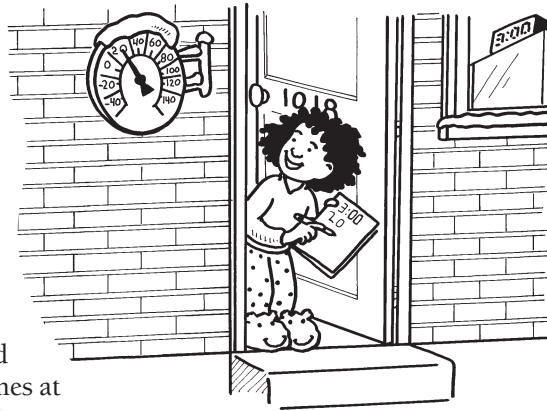
*Idea:* Encourage your youngster to experiment with other objects (googly eyes, pipe cleaners, building blocks). What patterns and shapes can she make?



# A zero's job

Poor little zero...it's often treated like "nothing." But it's just as important as any other number! Your youngster will discover what zero does with these activities.

**Add and subtract.** Take turns making up real-life story problems with zero. Your child could say, "I went down the slide 8 times at recess. The teacher said it was time to go



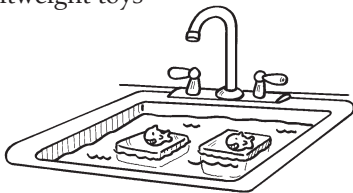
inside, so I went down zero more times. How many times did I slide?" You say the number sentence for her problem: " $8 + 0 = 8$ , so you went down the slide 8 times." Your problem might be, "I packed 12 grapes in my lunch. I ate 12 grapes. How many were left?" Your youngster should answer "Zero, because  $12 - 12 = 0$ ."

**Search.** Get notebooks and pencils, set a timer for 5 minutes, and race to find zeros around the house. Write down the numbers and where you found them. Your child might spot page 102 in a book or 20 degrees on the thermometer. What would happen without zeros? (You'd have page 12 and 2 degrees.) She'll see that zero can show there are no tens in the tens place or no ones in the ones place. 🐛

## SCIENCE LAB Floating on ice

Try this experiment where toys float on "icebergs." Your child will discover how an iceberg's mass can affect how long it floats.

**You'll need:** ruler, water, two identical small plastic containers, two identical lightweight toys



**Here's how:** Help your youngster use a ruler to measure 2 inches of water into one container and 4 inches of water into the other. Freeze 4–5 hours, until solid. Fill a sink with cold water, and have your child carefully flip over the containers and tap on the bottoms to remove the icebergs. Now he can float them in the water, put a toy on each one, and check back every few minutes.

**What happens?** The thinner iceberg melts faster, so the toy on that one winds up in the water first.

**Why?** The thinner iceberg has less mass—there is less ice to melt, so it melts before the thicker iceberg does. 🐛



## PARENT TO PARENT Domino math

My parents were coming to visit, and I wanted to think of math games my son Aaron could play with them. I asked them what games they might enjoy, and they said they both had fond memories of playing dominoes with their grandparents.



So I got a set at the dollar store and showed Aaron how to match the dots to play. We turned the tiles facedown and each drew seven. Then, we turned our dominoes faceup. Aaron put out the first tile—it had three dots on one half and four dots on the other. I made a match with a tile that had four dots on one half and one dot on the other. He looked at his tiles until he found a half with one dot.

By the time we finished, Aaron was able to quickly recognize the number of dots on each domino without counting them. And he was more than ready to play dominoes with Grandma and Grandpa when they came to town! 🐛

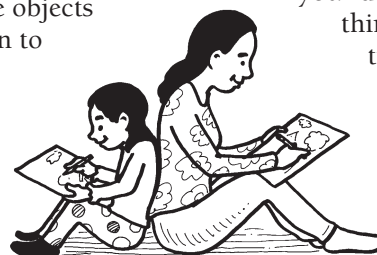
## MATH CORNER Above or below?

Is the cat *in* the hat? Or is the hat *on* the cat? Describing relative positions is an early geometry skill that your youngster can work on with this challenge.

with paper and crayons. Draw two objects on your paper (say, a house and a tree). Using words from the list, give your child instructions to draw the same items in the same positions. ("Draw a tree *beside* a house.") After she follows your directions, she draws something and gives you instructions. ("Draw a cloud *above* the house.")

**1. Make a list.** Together, brainstorm words that tell where objects are located in relation to other objects. *Examples: beside, next to, in front of, behind.*

**2. Draw and describe.** Sit back-to-back



**3. Compare your pictures.** Are the objects in the same places relative to each other? 🐛

### OUR PURPOSE

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

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www.rfeonline.com  
ISSN 1942-910X