Beginning Edition

# Math+Science Connection

Building Excitement and Success for Young Children

January 2016

Sask Rivers Public School Division

## TOOLS & TIDBITS

### Think about design

Discussing the design of everyday objects will get your little one thinking about engineering. For example, ask, "What features make my coffee mug work well?" (He may say the handle keeps you from burning your hand.) How might he design a better coffee mug? (Maybe he would add a second handle so you could hold it with both hands.)

### Shape search

This activity will encourage your child to notice shapes. On separate index cards, have her draw these seven shapes: square, circle, rectangle, triangle, trapezoid, pentagon, and hexagon. Put the cards in a small baggie to take in the car or on a walk. Can she match each shape to something she sees in the real world?

### Book picks

Teach your youngster about "taking away" with the fun rhyming rap in *The Action of Subtraction* (Brian P. Cleary). Part of the Math Is Categorical series.

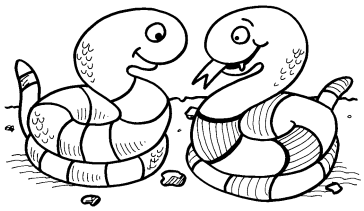
Read about the life cycle of a tree, and how trees provide shelter and food for creatures and plants, in the richly illustrated *A Log's Life* (Wendy Pfeffer).

## Just for fun

**First Snake:** I hope I'm not venomous.

**Second Snake:** Why?

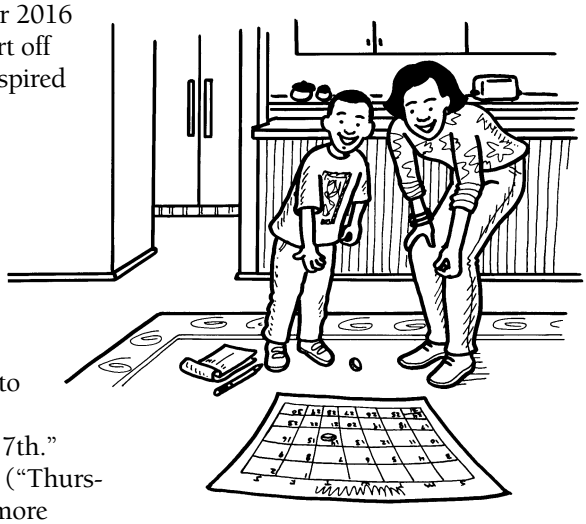
**First Snake:** I just bit my tongue.





# Put math on the calendar

Happy New Year! Open your 2016 calendar, and let your child start off the year with some calendar-inspired math fun. Try these ideas.



### Number recognition

Have your youngster number slips of paper 1–31 and shake them in a paper bag. Lay down the January calendar. Take turns pulling out a slip and placing it on the matching date. Ask your child to say each number as it's placed: "This is a 7. It goes on January 7th." *Idea:* Have him say the day, too ("Thursday, January 7th"). He'll learn more about how calendars are organized.

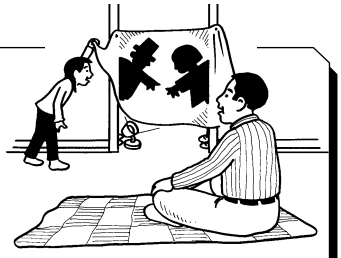
### Counting

For this game, each player places a token on January 1. Take turns rolling a die and moving the number of squares shown. For instance, roll a 5 and move to January 6, counting as you go. The first player to reach January 31 (exactly) wins. For extra fun, continue your game each month, and play through the whole calendar year—the first one to December 31 is the grand winner!

### Addition

Help your youngster make a large January calendar on poster board. Put it on the floor, and get two pennies. On each turn, toss the pennies, one at a time, onto the calendar. Add together the two numbers they land on. *Example:* Land on January 4 and January 14, and add 4 + 14 = 18. (If they're on a line or off the calendar, toss again.) Whoever scores highest each round gets a point. The first player to 10 wins the game.

## Shadow puppet theater



Enjoy imaginative family fun while your youngster experiments with shadow science.

**1. Make puppets.** Draw or print out characters and props. Color them black, or glue to black paper. Cut out the silhouettes and tape to rulers or sticks.

**2. Create your theater.** Hang a white sheet from a door frame. Shine a lamp or flashlight onto the back of the sheet.

**3. Put on your show.** Turn out the room lights, and take turns working the puppets behind the curtain. Encourage your child to test the effects of the light on the shadows. She'll learn that the closer the puppets are to the light source, the bigger the shadows are. What happens if she tilts the light source? Or if she uses a stronger or weaker light?

# Snow days

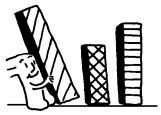
Snowfalls are not only a chance for making snowmen and drinking hot chocolate, they're also an opportunity for learning about measuring and melting.

**Measure.** Suggest that your child tape together markers, end to end, and stick her "marker ruler" in the snow. About how many markers high is the white stuff? Or have her stand a regular ruler or a yardstick in the snow, and help her read the exact height. Encourage her to record her measurement and compare it with later snowfalls. She'll be able to tell you the biggest snowstorm of the season.

**Melt.** Let your youngster bring 1 cup of snow inside. Ask her to predict how long it will take to melt, and then she can time it to find out. Does the melted water fill the cup? (She'll be surprised to find it doesn't.) Have her experiment to see how much snow she needs to melt to make a full cup of water.

*Explain the science:* There's empty space between the snowflakes because their points keep them from getting too close. When the snow melts, that space disappears. To demonstrate, have your family stand close together with your arms sticking out. You'll see it's hard to get right next to each other. Now, "melt" by putting your arms down—you'll be able to get much closer together!

SCIENCE LAB



## Where did my sense of touch go?

Wearing gloves will keep your youngster warm in the winter, but how do they affect his sense of touch?

***You'll need:*** pillowcase, household objects (golf ball, small bouncy ball, cotton swab, pear, apple), gloves

***Here's how:*** Place the objects in the pillowcase. With the gloves on and his eyes closed, have your child remove the items, one by one. Each time, he should feel the object with his hands and say what he thinks it is. Record his guesses. Then, he could remove the gloves and, with his eyes closed again, repeat the experiment.

***What happens?*** When he's wearing gloves, it's more difficult to feel the objects and harder to identify them.

***Why?*** His skin is covered with *touch receptors*—tiny cells that send messages to his brain about what he's touching. Those receptors are particularly sensitive in fingertips. When gloves cover the receptors, they hinder his sense of touch.

Q & A

## A graph a week

**Q:** *My daughter came home from school excited about how they had graphed the children's birthday months. I thought it would be fun for her to graph things at home, too. What do you recommend?*

**A:** Graphing at home is a great idea—you could even put your daughter in charge of a weekly family graph. Together, brainstorm what to graph, perhaps favorite types of books, top snack choices, or family traits like hair color or eye color. Help her write the ideas on slips of paper to keep in a jar. Each week, she can pull out one to use.

Then, she should list choices for the topic (say, fiction, nonfiction, and poetry for books) and survey family members. Encourage her to contact grandparents, aunts, uncles, and cousins, too—the more people, the more interesting her graphs will be.

Once she has her data, she can create her graph. She might draw a picture graph or make a bar graph. Let her display it and tell you all about her findings.

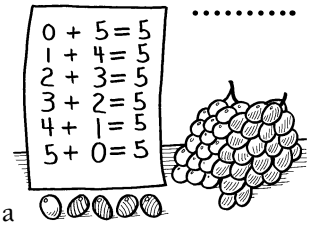
MATH CORNER

## Facts to 5

With this delicious activity, your child will see all the different ways he can add to 5.

Give your youngster two different colors of food, such as green grapes and red grapes. How many ways can he use the grapes to "build" the number 5?

For instance, he could put down 1 green grape and 4 red grapes. Help him write the equation to match (1 + 4 = 5). Encourage him to continue combining different numbers of green and red grapes until he's made all the equations that equal 5.




He could even write an organized list.

Can he spot a pattern? (The numbers on one side of the plus sign increase by one number, while the numbers on the other side decrease by one number.) Now, let him practice subtraction as he enjoys eating the grapes (5 – 1 = 4).

*Idea:* Have your child try this activity for other numbers from 1 through 20. Instead of snacks, he could use different-colored toy cars and trucks or other playthings.

**OUR PURPOSE**

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

Resources for Educators,
a division of CCH Incorporated
128 N. Royal Avenue • Front Royal, VA 22630
540-636-4280 • rfecustomer@wolterskluwer.com
www.rfeonline.com
ISSN 1942-910X