

# Math+Science Connection

Beginning Edition

Building Excitement and Success for Young Children

October 2013



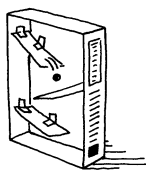
## TOOLS & TIDBITS

### Twice as big

Have your child draw a picture of a favorite object, say, a boat or a dinosaur. Then, ask him to draw it again in different sizes—twice as big or half as big. He'll enjoy drawing, and he'll learn about proportions.

### Let 'em roll

Playing with angles and motion is fun!



Help your youngster create a portable marble track from a cereal box by removing the front panel and cutting it into strips. She

can tape the strips into the open box to make ledges. Grab a few marbles, and let her experiment.

### Web picks

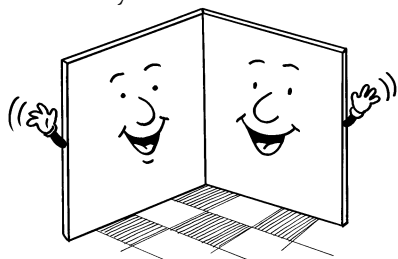
At [turtlediary.com](http://turtlediary.com), your child could spin a number wheel to read numbers, add money while “shopping,” and play other math games.

[Bbc.co.uk/schools/scienceclips](http://Bbc.co.uk/schools/scienceclips) is chock-full of animated science challenges. Your youngster might sort animals into categories, explore light, play with virtual magnets, and more.

## Just for fun

**Q:** What did one wall say to the other?

**A:** I'll meet you at the corner.



## Weights and measures

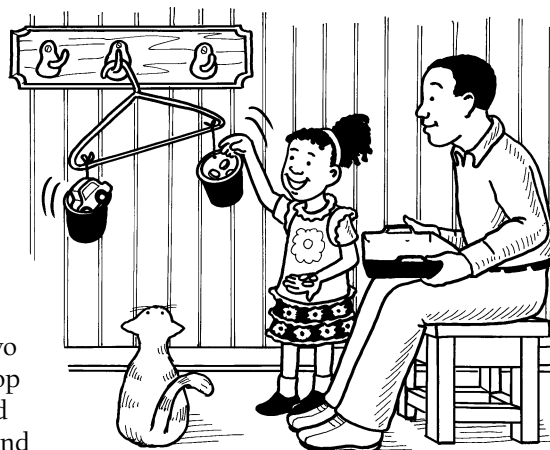
Your youngster can explore weights by making and using her own scale. With these hands-on activities, she will develop an understanding of how we use weight to measure objects.

### My own scale

To create this homemade scale, ask your child to gather a coat hanger, string or yarn, and two paper cups. Punch a hole at the top of each cup. Then, help her thread string or yarn through each hole and tie a cup to each end of the hanger. Hang the scale from a hook or a closet rod.

### Which weighs more?

Now your youngster can weigh and compare objects. For instance, she might test which weighs more—markers or crayons? First, have her predict (“I think markers will weigh more because they're bigger”). Next, she should put the same number in each cup (3 markers in one cup, 3 crayons in the other). The side that tilts down weighs more. Encourage



her to use words like *heavier than* or *lighter than* when she reports her results.

### Units of measure

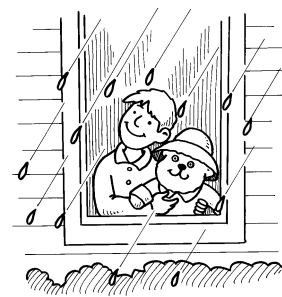
A good way for your youngster to learn about standard units of measurement, like ounces and pounds, is by coming up with her own units to use. She might, for example, weigh objects in quarters or (same-size) Legos. She could put a toy car in one cup and add quarters to the other cup until the scale balances. Then, she can tell you, “The car weighs 5 quarters.”

## Wonderful weather

Sunny or cloudy, rainy or snowy, weather is always a topic of conversation. Encourage your child to join in the discussion with suggestions like these.

**What to wear.** Let your youngster designate a stuffed animal as his “weather bear.” He can look outside or check the newspaper each day and then dress his animal for the weather (using outgrown baby clothes, for example). Have him tell you why he dressed his bear the way he did.

**Tic-tac-toe.** Draw a tic-tac-toe board. Each player chooses a type of weather (hot, snowy) and, on his turn, draws a symbol to match his weather (flip-flops, a snowman). The first to get three in a row wins. This game will help your child think about how weather affects his life.



# Learning with seeds

When you cut fruits and vegetables for meals or snacks, let your youngster scoop out the seeds. Then, he could use these fun ideas to practice math and science skills.

**Count.** Have your child count the seeds. He might find 1 in a plum, 10 in a pear, or 150 in a cucumber. He can keep track of the results by recording the numbers on a chart with two columns, one naming the fruit or vegetable and the other telling the number of seeds. Which ones have the most seeds? The fewest?



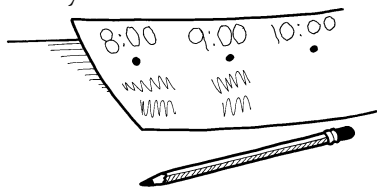
**Examine.** Encourage your youngster to look carefully at the seeds. Ask him to describe what they look and feel like (black, round, hard). Have him rinse and save the seeds. As he collects more, he can sort them by *attribute* (color, shape, size).

**File.** Suggest that he glue each type of seed to a separate index card, identify it, and illustrate it. For instance, he might glue on an apple seed, draw an apple, and write the word *apple*. Let him file the cards in a small box, and over time, he will create his own seed catalog. *Idea:* Give him seeds as you're cooking, and see if he can match them to ones in his file.



## PARENT TO PARENT Is it time yet?

My daughter, Shannon, was always asking if it was time for soccer, time to go to Grandma's, or time for supper yet. I mentioned this to her teacher, and she suggested that I help Shannon make a timeline of her day each day.



On a strip of paper, Shannon puts a dot for every hour, 8 a.m. to 8 p.m., and writes the time above it. Then I help her fill in her activities, such as school at 9 a.m., going to her friend's house at 3 p.m., and dinner at 6 p.m. Now when she wants to know how long it is until dinner, we look at the clock to see what time it is. She finds that hour on her timeline, counts the dots after it, and announces, "Only two dots until dinner!"

Shannon's teacher told me this will help my daughter learn about *sequencing*—or how things go in order—and also about *elapsed time*, or the period of time between events.

## SCIENCE LAB Water fountain

A homemade water fountain is a cool way to learn about air pressure.

**You'll need:** empty 2-liter plastic bottle, flexible straw, masking tape, water, balloon

**Here's how:** Poke a small hole in the side of the bottle, about halfway up. Have your child put in the straw, leaving the flexible end outside of the bottle and bent upward. Seal the hole with the tape. Then, let her add water to just above the straw and place the bottle in a pan. Blow up a balloon, and help her stretch it onto the mouth of the bottle.

**What happens?** The water will flow up and out of the straw, delighting her with a water fountain! As the water streams out, the balloon will deflate.

**Why?** When you blew up the balloon, it filled with air. That air flows into the bottle and pushes the water out through the straw.



## MATH CORNER What's the value?

Playing with "addition boxes" can help your child build the skills he'll need for algebra. Here's how.

### Set it up

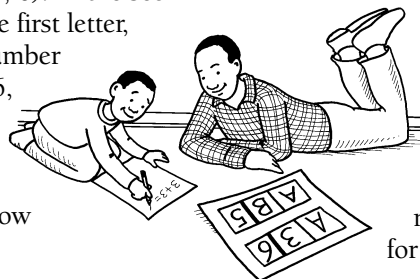
Draw two rows of three boxes—each row will contain an addition problem. In the top row, write one letter and two numbers (*example:* A, 3, 6). In the second row, write the same first letter, another letter, and a number (A, B, 5). So  $A + 3 = 6$ , and  $A + B = 5$ . **Tip:** Darken the line between the second and third box in each row to set the sum apart.

### Solve it

Your youngster's job is to figure out what numbers A and B represent. To start, you could ask, "What number would you add to 3 to make 6?" He can draw the problem or use objects to solve it. When he figures out the answer (3), he can substitute 3 for A in both rows. Then he can solve for B by thinking,

"Since  $3 + B = 5$ , what number do I have to add to 3 to make 5?" (2, so  $B = 2$ .)

**Idea:** Take turns making addition boxes for each other to solve.



## OUR PURPOSE

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

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