



Math+Science Connection

Building Excitement and Success for Young Children

October 2012

Sweetbriar Elementary



TOOLS & TIDBITS

Count the corners

Use a tissue box to help your child understand

what a *vertex* (corner) is in geometry. She can touch each corner of the box and count the number of edges that touch that corner (3). How many vertices are on a tissue box? Let her put a sticker over each one and then count her stickers.

Floating paper clip

Fill a sink with water, and give your youngster a paper clip to drop in (it will sink). Then, have him put the paper clip on a toilet paper square and lay it in the water (the paper will sink, but the clip will float). Let him look closely around the clip—he'll see the *surface tension* of the water that keeps it floating.

Web picks

Find *Cat in the Hat*-themed games at *Cat's Math Mayhem*. The site, pbskids.org/lab/show/catinthehat, features activities on measurement, shapes, and patterns.

Learn about life in space at spaceplace.nasa.gov/facts.htm. Your child can see pictures of the solar system, read a book about the sun and earth, play games, and more.

Worth quoting

"There are no greater natural scientists and engineers than young children."

JD Chesloff

Just for fun

Q: What goes up when rain comes down?

A: An umbrella.

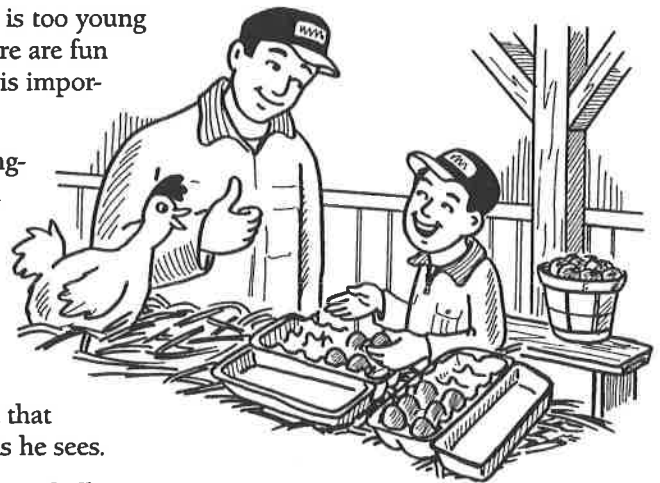


Real-life fractions

Do you think your child is too young for fractions? Not at all! Here are fun ways for him to work on this important skill.

All around. Help your youngster notice fractions around him. When you're having pizza, you could say, "Look—each slice is an *eighth* of the pizza." When he asks the time, show him "a *quarter* of 12" on the clock. Then, suggest that he draw pictures of fractions he sees.

Along a number line. Go into a hallway of your house or apartment, and designate one end as the start and the other as the end of your "number line." You can say, "I'm going to stand about a *quarter* of the way along this wall." Ask your child to move to the *halfway* point. Have a sibling go to the *three-quarters* point. (These "marks" can be approximate.) Your youngster will get the idea that fractions can be associated with lengths. *Idea:* Help him write the fractions on



separate sticky notes and tape them to each spot.

Parts of sets. Let your child see that fractions can be parts of sets. Get a full carton of eggs, and have him figure out what $\frac{1}{2}$ would be (6 eggs). Or show him 8 apples, and ask him for $\frac{1}{4}$ (2 apples). *Tip:* Help him count the total and divide them into 2 equal groups for halves or 4 equal groups for quarters. Each group is the fractional part. 🦋

Who's on my back?

Your youngster may love seeing, playing with, or reading about animals. With this guessing game, she can learn more about favorite critters.

Have each player draw the picture of an animal on an index card, label it, and tape the card to someone else's back (without her seeing it). Then, take turns asking yes-or-no questions to figure out who's on your back. *Examples:* "Do I live in the forest?" "Do I have legs?" The first person to guess correctly wins that round. Make new cards, and play again.

Ideas: To narrow the possibilities, play with specific groups of animals (farm, zoo, jungle). This will help your child with classifying skills. After you play, do research together, and write animal facts on the cards. Then she'll have a deck of animal cards to play with, sort, and read. 🦋



Estimation station

Learning to estimate will help your youngster with everything from her math homework to getting places on time. Here are strategies to try.

Guess and check

Each day, fill an “estimation jar” with up to 20 objects (Legos, toy cars). Have your child create a chart with three columns: “My estimate,” “The answer,” and “Too big or too small?” She can record her estimate in the first



column. Then, she should count the items and fill in the other two columns. Estimating and checking each day will help her improve her estimation skills.

Idea: Turn it into a family game by keeping a notepad by the jar and having each family member write an estimate.

Use data

In this method, your child uses what she learns with each estimate to make a more educated guess next time. Fill a quart-sized plastic bag with objects from outside (rocks, acorns, pine cones), and ask her to estimate the number. Then, have her count to check. Next, fill a snack-sized bag with the same type of objects. Knowing how many were in the bigger bag, how many does she think could fit in the smaller one? Try again with bigger and smaller bags.

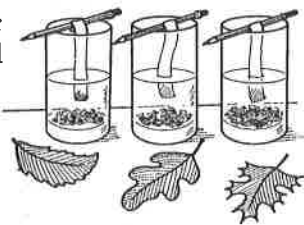
SCIENCE LAB

Changing leaves

Every fall, the leaves change from green to red, gold, orange, and yellow. But why? This experiment will help your youngster find out.

Materials: 3 green leaves (from different trees), 3 glasses, nail polish remover, spoon, tape, 3 strips cut from a paper coffee filter, 3 pencils

Here's how: Let your child tear each leaf into very small pieces and put them into separate glasses.



Pour in nail polish remover to cover the leaves, and have him use the spoon to mash the pieces into the bottom. Then, he can tape a coffee-filter strip to the middle of each pencil and lay a pencil across each glass (the filter should be submerged, but not touching the leaves). Wait a few hours.

What happens? Colors will appear on the filters.

Why? Leaves are made up of different colors. But during the spring and summer, the sun causes a chemical (*chlorophyll*) to make them green. In the fall when there is less sun and it gets colder, the green fades, and the other colors come out.



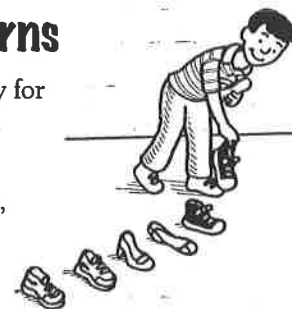
MATH CORNER

Hearing, seeing patterns

Playing with patterns is a great way for your child to develop the thinking that goes along with algebra. Try these suggestions:

- Clap a pattern for your youngster to repeat (soft, soft, soft, loud). Then, have him clap one for you to mimic. Add in a few foot stomps to expand your patterns—and the fun.

- Use household items to create a pattern for your child. His job is to figure out the rule (that is, what makes it a pattern) and add objects to keep the pattern going. For instance, you might gather shoes and create a pattern according to their style, color, or size. Encourage him to “read” the pattern out loud (“sneaker, sneaker, high heel, sandal”). On his turn, he can use different objects and try to stump you with his rule.



PARENT TO PARENT

Newspaper math

When my daughter Perry was putting newspapers into the recycling bin, she began reading numbers she saw in the sports headlines. That gave me an idea—she could use the newspaper to practice math. I mentioned this to my brother, who is a teacher, and he had some ideas.

First, he said Perry might cut numbers from the newspaper and glue them in order onto construction paper, leaving space for missing numbers in between. Perry found numbers in news articles, the temperature listings, and movie times. Each

day, she looks for more to fill in her line of numbers! My brother also said Perry could cut out words with 3 letters, 4 letters, and 5 letters and glue them onto separate pages.

Finally, he suggested a way for her to work on spatial and mapping skills. He said she might cut out pictures of furniture from newspaper ads and glue them into “rooms” on poster board. Perry is having a great time with all her newspaper activities, and

I’m happy she’s practicing what she’s learning in math!



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