

BROWN Bag Ideas For Parents

Presented by Patsy Kanter and Susan Rogalski
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OUR PHILOSOPHY

Our belief is that parents can build a bridge between the math their children do in school and what they do at home. Often this does not happen because:

1. Many parents are not comfortable with math.
2. Parents believe that the math they learned is different and cannot understand what is being taught today.
3. Parents have a shortage of ideas for ways to help their child.
4. Parents who struggled with math in school feel their child will also struggle.

We believe that parents can become more involved in math by using everyday tools and objects found around the home. These objects are more familiar and contextual for parents and children.

We call our project **BROWN BAG MATH™** because all the materials will fit in a lunch bag, and we feel the ease of use will help increase parents' comfort level with math. This sample set of ideas focuses on fractions and decimals using pennies, paper plates, string, egg cartons, and a die, or number cube. We have added handouts to make it easier for children to see multiple representations of the concepts.

You can use these materials in a few different settings:

1. **Parent meetings:** at school after school, before school or in the evening.
2. **Kickoff a unit:** send home at the beginning of a fraction and or decimal unit to help parents reinforce with their child what is happening in the classroom.
3. **Summer math:** work at home might be really enhanced with a parent summer kit including these materials and some suggestions.

MATERIALS

- Egg carton
- 2 paper plates
- String or ribbon
- Sticky notes or small pieces of paper
- 100 pennies or counters
- 1 die or number cube
- Crayon or marker
- Penny Grid and Egg Carton Grid

STRINGING YOU ALONG WITH FRACTIONS

1. Get a piece of 10-12" of string or ribbon and lay it flat on a flat surface.
2. Put a sticky note at either end of the string to mark 0 and 1.
3. Now figure out where the sticky note goes to mark $\frac{1}{2}$.
4. Next find $\frac{1}{4}$ and $\frac{3}{4}$, and mark each of them with a sticky note.
5. Find $\frac{1}{3}$ and $\frac{2}{3}$.
6. Answer these questions:
 - a. Is $\frac{1}{3}$ more or less than a half? How do you know?
 - b. Is $\frac{1}{4}$ more or less than one half? Can you prove your answer?
7. Can you find $\frac{1}{5}$ and $\frac{3}{5}$? Mark it!
 - a. Which is more, $\frac{3}{4}$ or $\frac{3}{5}$ of the string? How do you know?
 - b. Which is more, $\frac{1}{2}$ or $\frac{1}{5}$ of the string?

DIALING UP FRACTIONS AND PERCENTS WITH PAPER PLATES

1. Take two different-colored plates and cut a slit in each plate from the outside to the very center of the plate.
2. Slip these two plates together through the slit you made in them. Rotate the top plate to reveal a portion of the bottom plate.
3. Can you see that the contrasting colors form an angle, which you can open and close?
4. Now, you can imagine that if all one color is showing, it is 100% of that color.
5. Move your plates so that only 25% of the darker plate is showing. What percent of the lighter plate is showing?
6. Can you make your plate show 80%? Now show 60%.

JUST EGGING YOU INTO FRACTIONS

(using egg cartons as a set model)

1. Take out your egg carton. How many holes?
2. Put a counter in $\frac{1}{3}$ of the egg carton. How many counters did you use? Empty your carton.
3. Now put a counter in $\frac{1}{4}$ of the egg carton. How many counters did you use? How do you know this is $\frac{1}{4}$?
4. Now put counters in to represent $\frac{1}{4} + \frac{1}{3}$. How many counters did you use? How do you know this is $\frac{1}{4} + \frac{1}{3}$?
5. Prove that $\frac{7}{12}$ is the same as $\frac{1}{4} + \frac{1}{3}$.

(using egg cartons as an area model)

1. Find your drawings of an egg carton for this activity.
2. Can you use a crayon to shade in $\frac{1}{2}$ of the egg carton? (NOTE: When shading in the fractions of the cartons, all parts must be connected to an adjacent side.)
3. Show $\frac{1}{2}$. Now show $\frac{1}{2}$ in a different way.
4. Now show $\frac{1}{3}$. How many different ways can you shade in $\frac{1}{3}$?

A PENNY FOR YOUR DECIMAL AND FRACTION

1. We have provided a grid to represent a decimal/percent square. As you fill the grid, go down the columns with the counters or pennies (Preferable).
2. Toss the number cube and place that many pennies (counters) on the grid. Tell your partner the decimal that is represented by the filled portion of the grid. What fraction of the grid is filled in?
3. Continue until the grid is filled.
4. Now toss the number cube and remove that number of pennies from the grid.

Egging You Into Fractions



