

# Math Matters

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## What's That Word?

The lower part of a fraction representing the number of parts in the whole is called the **DENOMINATOR**

Two lines that cross to form right angles are called **PERPENDICULAR**

A **VARIABLE** is a quantity or function that may assume any given value or set of values

A whole number and a fraction together is called a **MIXED NUMBER**  
(Ex.  $2 \frac{1}{3}$ )

## Click It!

### Check out these websites:

- ◆ [Parent Support from Eureka!](#)  
A variety of resources to help keep parents informed and involved in supporting students.
- ◆ [Wootmath.com](#)  
A variety of activities using visual models for learning about fractions from basic understanding through more complex operations.
- ◆ [Splash Math](#)  
Students in grades 1-3 have a username and password from their teacher.

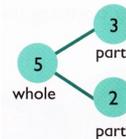
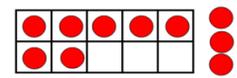
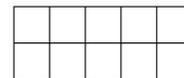
## I've Never Seen That Before!

### Visual Models for Building Understanding

Recent research about the brain shows that visual models in mathematics are not just tools for little kids. Having a strong visual understanding and connection to mathematics is actually critical for the brain when doing mathematics at any age. Check out [this research article out of Stanford University](#) and read below to learn about some of the visual models used in classrooms.

The models:

- Ten frames– a visual model that helps students internalize the benchmarks of 5 and 10
- Number Bonds– a visual model that shows the relationship between parts and totals. It can be extended through many concepts

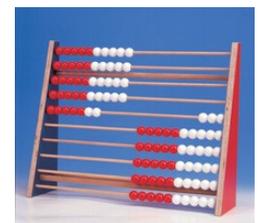


$$\frac{8}{9} + \frac{2}{3} = \frac{8}{9} + \frac{6}{9}$$

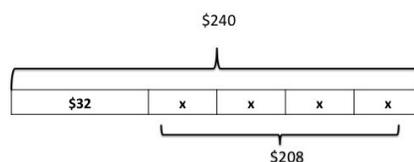
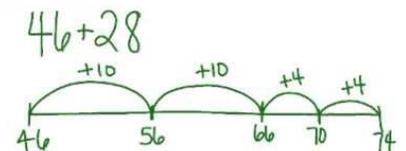
$$\frac{8}{9} + \frac{1}{9} = \frac{9}{9} = 1$$

$$1 + \frac{5}{9} = 1 \frac{5}{9}$$

- Rekenrek or Math Rack– a visual model with beads that helps students understand numbers in relation to 5's and 10's



- Open Number Line– a linear model to show a student thinking in moving from one number to another.



- Tape Diagram or Bar Model– a versatile visual representation of how quantities are related to one another, especially in word problems.



## Recommended Reading

**Fractions (grades 2-3):**

### Fraction Action

By Loreen Leedy

**Counting (grades K-1):**

### Quack and Count

By Keith Baker

**Math History (grades 4-6):**

### Mummy Math

By Cindy Neuschwander

**Math History (grades 4-6):**

### Mathematicians Are People, Too: Stories from the Lives of Great Mathematicians, Volume 1

By Luetta Reimer and Wilbert Reimer

## Math Riddles, Tips, and Tricks!

### Multiplication Tip:

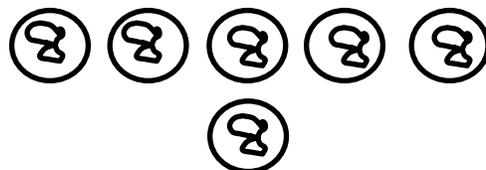
To multiply any number by 6 you can just multiply it by 5 and then add one more of the other number. Example: To multiply  $6 \times 8$  you can do

$5 \times 8$  and add one more 8

$$5 \times 8 = 40 + 8 = 48 \quad \text{So } 6 \times 8 = 48$$

Why it works:

$6 \times 8$  means 6 groups of 8 which is the same as 5 groups of 8 and one more group of 8.



### Fractions tip:

All fractions equivalent to  $1/2$  have a denominator that is twice the numerator. Examples:  $3/6$ ,  $4/8$ ,  $5/10$ , and  $15/30$  are all equivalent to  $1/2$

Try this: Find equivalent fractions to  $1/2$ .

What is the denominator for a fraction with a numerator of 6? What is the numerator for a fraction with a denominator of 4?



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*Have a great math riddle, tip, trick, website or book to share? Have questions, comments, or concerns? Contact us by email at:*

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## Figure It Out Together!

### Play It:

#### 1 Through 10 (k-2)

Using a standard deck of cards, deal ten cards to each player, face down, in two rows of five. Flip over the top card in the deck and the first player can choose to take that card or draw from the stack.

Players place the card they draw in the correct position. "1" (ace) is the top left position and continue left to right in sequence so that 10 is in the bottom right position. As you place a card, you flip over the card that was in that position. If you can use that card, place it in the correct position. If not, discard it and it's the next player's turn. S/He can take the discarded card or the top card from the stack. If you play using face cards, face cards are considered garbage cards and are not playable.

A round stops when a player places all ten cards in the correct position. Then in the next round, the winner of the previous round gets one less card dealt. The game ends when one player no longer has any cards.

#### Multiplication War (3-6)

Take a standard deck of cards and remove the kings. Jacks represent number 11 and queens are 12. Shuffle deck and deal the cards to all the players. Each player places the top two cards from his/her pile and multiplies to get the product. He/she must correctly state the multiplication equation. For example "8 times 6 equals 48" in order to win. The player with the highest product collects all the cards. In the event of a tie, players flip two more cards to determine a winner. When all cards have been played, the player with the most cards wins.