

Suggested Internet Resources

Periodically, Internet Resources are updated on our Web site at www.LibraryVideo.com

- mathforum.org/
"Math Forum," sponsored by Drexel University, contains a wealth of information about math for students and teachers. Students can tackle the "Problem of the Week," or send a question to Dr. Math. Teachers can find lots of helpful resources for teaching math, including lesson plans.
- www.harcourtschool.com/glossary/math_advantage/index.html
This multimedia math glossary offers illustrations and definitions for many mathematical concepts, individualized for grades 1 through 8.
- www.eduplace.com/math/mathsteps/2/a/index.html
This helpful site about place value explains the concept, and offers tricks, tips and lesson plans to aid students' understanding about this challenging topic.

Suggested Print Resources

- Friedman, Aileen. *The King's Commissioners*. Scholastic, New York, NY; 1994. This fictional story incorporates the mathematical concepts of counting and place value.
- Maccarone, Grace. *Monster Math Picnic*. Scholastic, New York, NY; 1998. Learn more about the number combinations that add up to ten in this story about math monsters.
- Schwartz, David M. *How Much is a Million?* Mulberry Books, New York, NY; 1993.
- Tang, Greg. *Grapes of Math: Mind-Stretching Math Riddles*. Scholastic, New York, NY; 2001.

TEACHER'S GUIDE

Kristen Lovett Casel, M.S.

Curriculum Coordinator, Schlessinger Media

TITLES

- | | | |
|-----------------------|-----------------------------|------------------|
| • Addition | • Gathering & Graphing Data | • Multiplication |
| • Decimals & Percents | • Geometry | • Number Sense |
| • Division | • Measurement | • Subtraction |
| • Fractions | • Money | • Telling Time |
-

Teacher's Guides Included
and Available Online at:



800-843-3620



Teacher's Guide and Program Copyright 2004 by Schlessinger Media,
a division of Library Video Company

P.O. Box 580, Wynnewood, PA 19096 • 800-843-3620

Executive Producer: Andrew Schlessinger

Program produced and directed by Stone House Productions, LLC

All rights reserved.

K8560
V7090



Number Sense

Grades K-4

We use math in everything we do, from catching a movie at the local theater to shopping at the grocery store! Because math is an important aspect of our everyday lives, it's crucial that students are fluent in mathematical thinking and communicating. In our ever-changing world, it's not enough for students to be able to perform calculations. Students need to be challenged to solve problems in creative ways, using various approaches. Enhancing students' mathematical understanding can help to unlock the secrets of the world around them.

Introduction

Students are bombarded by mathematical symbols in the world around them; numerals like “8” and marks like the “equals” sign are common sights. Number sense helps students to grasp the meaning behind these symbols. Developing skills like counting, comparing, ordering and estimating help to expand students’ number sense. Students can make sense of even the biggest numbers after they’ve explored the concept of place value. Mathematical ideas can easily be communicated and understood when students develop number sense!

Vocabulary

number — A symbol that stands for a group of things. The number 4 stands for a group of four objects.

counting — An action that tells how many.

pattern — A sequence of objects, events or ideas that repeats.

even number — A number that can be divided evenly into two equal groups.

odd number — A number that, when divided into two groups, always has one leftover.

equal — The same amount.

ordinal numbers — Numbers that show position, like *first*, *second* and *third*.

place value — The value given to the place that a digit has within a number.

digits — Numbers from zero to nine.

estimation — Finding a number that is reasonable for a situation.

rounding — A type of estimation in which a number is replaced with another number that tells about how many or about how much.

front end estimation — A type of estimation in which the digits in the greatest place (the front end digits) are used to estimate.

Pre-viewing Discussion

- Place a large collection of items on a table and ask students to discuss how they would go about finding out how many items there are. Compare the different methods. Is one method the most accurate? The quickest? Under which conditions would each of the methods be useful?
- Encourage students to examine a hundreds chart and discuss the patterns that they can find.
- Numbers are everywhere! Encourage students to conduct a scavenger hunt for numbers in your classroom. Keep a running log of all of the places where numbers appear (e.g., on the clock, pages of books). Discuss with students why they think numbers are important. What would happen if we didn’t have numbers?

Follow-up Discussion

- Discuss with students why they think place value is necessary. What would happen without it?

(Continued)

- Encourage students to brainstorm a list of situations in which estimation would be useful. When do they use estimation in their lives? When is it okay to estimate? When is it not okay to estimate? Why not?
- Discuss patterns students see in the world around them (e.g., rhyming poetry, songs, striped shirts, pottery or patterned dishes). With your students, compare these patterns and foster a class discussion about how they are similar to and different from number patterns.

Follow-up Activities

- Share Jon Scieszka’s *Math Curse* (Viking, 1995) with your students. Help students to see how everything around them can be thought of as a math problem. Encourage students to make a record of the math they encounter during a day.
- Make a memory game for students with numerals and their corresponding word names. On separate index cards, write numerals up to ten and their word names. With partners, students can flip these cards over and try to make matches.
- Encourage students to make ten in different ways using ten frames and counters. See www.harcourtschool.com/glossary/math2/define/gr2/ten_frame2.html for a sample of a ten frame. Students can discuss how many ways they can find to make ten.
- Practice skip counting as a class. Present skip counting challenges to students, such as skip counting by twos starting with 3, or skip counting by fives starting with 4. Students can also mark skip counting patterns on printable hundreds charts. (See mathforum.org/pow/support/prealg/hundred.chart.doc.pdf for an example of a hundreds chart.)
- With your class, plot even and odd numbers on a hundreds chart. Discuss the pattern that emerges. Students can also read *Even Steven and Odd Todd* by Kathryn Cristaldi (Scholastic, 1996) and they can write their own stories that feature even and odd numbers.
- Provide students with large numbers of objects (e.g., paper clips, jelly beans) to sort into groups of tens and ones. Once the totals have been tallied, students can use place value blocks (ones, tens rods, hundreds rafts) to represent the amounts.
- The symbols for “greater than” and “less than” are often hard to remember. In small groups, students can make classroom posters to help them remember the difference between symbols.
- Patterns are everywhere! Share *Pattern Bugs* by Trudy Harris (Millbrook Press, 2001) with your class, and encourage students to find the patterns throughout the book. You can then provide students with colored blocks or counters, and they can create their own patterns.
- Bring in a variety of catalogs and encourage students to use estimation to figure out what they could buy if they had a certain amount of money. After students have made their selections, they can use calculators to verify that they would have enough money for their purchases.
- Play a game of human place value! In small groups, students can each hold a sign with a different number. Encourage the group to make the smallest and largest numbers possible. Students should justify their answers. Mix groups and repeat.