

**Fifth Grade
Math Trailblazers Unit 2**

“Big Numbers”

North Carolina Standard Course of Study

<http://www.ncpublicschools.org/curriculum/mathematics/scos/2003/k-8/27grade5>

MTB Correlation to NCSCOS

<http://www.kendallhunt.com/uploads/2/CORR-NC-MTB2.pdf>

Unit Activities

- Students review reading and writing big numbers and use estimation skills to locate numbers on a number line.
- Students play a game to practice reading large numbers.
- Students review multiplication and division facts which will continue throughout the year in the DPP (Daily Practice and Problems).
- Students review place value concepts learned in fourth grade. Students represent numbers with base-ten pieces and review the Fewest Pieces Rule. They also review the addition and subtraction algorithms by modeling these operations with the base-ten pieces.
- Students construct and use an abacus to represent numbers. They compare place value on the abacus to our own base-ten number system.
- Students multiply large numbers with ending zeros and look for patterns. They then review the all-partials methods of multiplication as well as the traditional multiplication algorithm (the compact method).
- Students use convenient numbers to estimate products.
- Using a story, “Sand Reckoning,” about the ancient mathematician Archimedes, students are prompted to think about large numbers.
- Students review the use of exponents and then learn to read large numbers written in scientific notation.
- Students solve an open-ended problem by estimating the number of pennies it will take to make a stack that reaches the moon.
- Students begin the process of putting together a math portfolio.

Unit Vocabulary

billion	digit	expanded form	million	period
place	place value chart	rounding	standard form	value
word form	divisor	fact families	factors	product
quotient	turn-around facts	base-ten pieces	bits	Fewest Pieces Rule

flats	packs	place value	skinnies	all-partials multiplication method
commutative property	compact multiplication method	partial product	convenient number	estimate
Google	Googolplex	infinite	base	exponent
power	scientific notation	standard form		

Fifth grade glossary link: http://www.kendallhut.com/uploads/2/MTB_Gr5_Glossary.pdf

Unit Manipulatives/Supplies

calculators	ruler	scissors	Base-ten pieces: packs, flats, skinnies, bits	Connecting cubes	20 pennies per group
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Unit Assessment Indicators

- Can students compare and order large numbers?
- Can students read and write large numbers?
- Can students multiply using paper and pencil?
- Can students multiply numbers with ending zeros mentally?
- Can students estimate products?
- Can students solve open-ended problems and communicate solution strategies?
- Do students demonstrate fluency with the multiplication and division facts for the 5s and 10s?

Unit Literature

- *The Magic School Bus: Lost in the Solar System* by Joanna Cole
- *Complete Poems* by Carl Sandburg
- *How Much is a Million* by David Schwartz
- *If You Made a Million* by David Schwartz
- *Our Solar System* by Seymour Simon
- *The World Almanac and Book of Facts 2000* Funk and Wagnalls

Unit Software

- *Ice Cream Truck* develops problem solving, money skills and arithmetic operations.
- *Math Arena* is a collection of math activities that reinforces many math concepts.

- *Math Munchers Deluxe* provides practice in basic facts in an arcade-like game.
- *Math Mysteries: Advanced Whole Numbers* is a series of structured multi-step word problems dealing with whole numbers.
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- *Mighty Math Calculating Crew* poses short answer questions about number operations.
- *Mighty Math Number Heroes* poses short answer questions about fractions and number operations.
- *Number Facts Fire Zapper* provides practice in number facts in an arcade-like game.
- *Puzzle Tanks* develops logical thinking while practicing math facts.
- *Ten Tricky Tiles* provides practice with number facts through engaging puzzles.

Websites

National Library of Virtual Manipulative website allows students to work with manipulative base-ten pieces, the abacus, and many others.

<http://nlvm.usu.edu/en/nav/vlibrary.html>

Rainforest Math – Click on Level E and choose “place value” or “ordering, expanding” located on the top row of the menu.

<http://www.rainforestmaths.com/>

AAAMath – Place Values of six digit numbers

http://www.aaaknow.com/g5_31_x1.htm

AAAMath – Place Values – Expanded Form

http://www.aaaknow.com/g5_31dx1.htm

AAA Math – Identifying Place Value

http://www.aaaknow.com/g5_41ax1.htm

AAA Math – Specific Place Value

http://www.aaaknow.com/g5_41ax2.htm

Multiplication Facts Practice

<http://www.multiplication.com/activities.htm>

Can You Say Really Big Numbers?

<http://www.mathcats.com/explore/reallybignumbers.html>

You Can Help Your Child

- Talk about big numbers you see in the newspaper, magazines, etc. Ask your child to read the number back to you. Make a game of seeing who can find the biggest number of all in the newspaper.
- Review multiplication and division facts with your child. Use the *Triangle Flash Cards* to practice the multiplication and division facts for fives and tens.
- While driving, allow students to add street numbers of houses, exit sign numbers, mile markers, etc.
- Practice estimation in the grocery store by having your child estimate the cost of groceries. Also ask your child questions such as:
 - How many beans come in a can?
 - How much do we need to make 4 servings?
 - How many groceries can we buy for 50 dollars?
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