

Math Trailblazers: A Parent Guide

Grade 1



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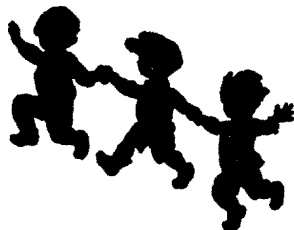
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Math Trailblazers is...

based on the belief that mathematics is best learned in real-world contexts that make sense to children. Lessons are grounded in everyday situations. A fundamental principle is that mathematical ideas are internalized through active involvement in solving real problems.

New mathematical content is included but traditional topics are not neglected. Topics including number sense, estimation, geometry, measurement, algebraic sense (patterns and relationships) and statistics (using data) are investigated at each grade. Students using Math Trailblazers will have the opportunity to become proficient problem solvers, know when and how to apply the mathematics they have learned, and communicate clearly their mathematical knowledge. They will recognize connections between the mathematics learned in school and the mathematics used in everyday life.

For more information
about the program -
contact the website for
Kendall-Hunt Publishing
<http://www.kendallhunt.com/elhi>



A Parent Letter will be sent home at the beginning of each unit during the school year. This will introduce and explain the important ideas and skills that will be covered in the unit. If you feel you need more information, please check with your child's classroom teacher.

Strategies for assisting your child...

- Establish a homework routine including a consistent time and place. Keep it short and make it fun!
- Ask questions that enable you to find out what your child really understands:

Tell me how you did this.

Explain your reason.

How else could you do this?

What would happen if...?

- Encourage independence.



If your child does not understand the work...

- Review the parent letter sent home for the specific unit.
- Write a note to the teacher explaining any problem your child has in completing the assignment so that the teacher can determine the next best steps.

On-going skills to practice at home...

It is important to keep a close connection to real objects such as buttons, beans, coins, etc. as your child develops math skills. Keep the practice sessions short and make it fun and interesting!

- Beginning to learn addition and subtraction strategies to find sums up to 12
- Knowing names and values of coins (pennies, nickels, dimes, quarters)
- Counting by 1's, 2's, 5's, 10's (skip counting)
- Beginning to tell time on an analog clock (a clock with hands) using hours and five-minute intervals
- Solving everyday problems (Example: " We have ten cookies. How will we divide them evenly among our family?")

Unit Summaries:

The following provides a quick preview of the first grade units in the Trailblazers Program. Teachers will cover most of these units this year but they may not be taught in the listed order.

Unit 1 - Welcome to first grade

Key concepts - 1-1 correspondence

Unit 2 - Pennies, Pockets, and Parts

Key concepts - counting with tally marks, writing number sentences, collecting data, and constructing a bar graph, partitioning a number into 2 and 3 parts

Unit 3 - Exploring Shapes

Key concepts - gathering, recording and organizing data in a table, sketching shapes, identifying and communicating the properties of shapes

Unit 4 - Adding to Solve Problems

Key concepts - relating even and odd numbers to groupings of objects, solving addition problems and sharing thinking, solving addition problems by counting on

Unit 5 - Grouping and Counting

Key concepts - counting objects by 2's, grouping and counting by 1's, 5's, and 10's, partitioning and describing numbers

Unit 6 - Measurement: Length

Key concepts - using nonstandard units to measure length, using a number and a unit to report a length, using a ruler to measure length and width

Unit 7 - Patterns and Designs

Key concepts - naming, extending, translating, and recording patterns

Unit 8 - Subtracting to Solve Problems

Key concepts - telling and acting out subtraction stories, writing number sentences for subtraction problems, using the counting up strategy to find the number of the missing part

Unit 9 - Grouping by 10's

Key concepts - grouping objects by 10's, naming numbers using grouping language (ex: 6 tens and 3 ones) and conventional names (ex: 63), representing a number with stacks of 10 cubes and leftover cubes, connecting two digit numerals with groupings of 10's and 1's, comparing and ordering numbers

Unit 10 - Measurement: Area

Key concepts - using a nonstandard unit to estimate area, finding the area of rectangles in square inches, using a ruler to measure length

Unit 11 - Looking at 100

Key concepts - counting objects grouped in 10's, partitioning 100 into two and three parts, counting on by five and ten to 100, combining the values of dimes, nickels, and quarters to make \$1.00, counting pennies and dimes up to \$1.00



Unit 12 - Cubes and Volume

Key concept - exploring the relationship between shape and volume

Unit 13 - Thinking about Addition and Subtraction

Key concepts - working with numbers whose sum equals 10, modeling doubles with manipulatives, writing number sentences for doubles, developing a visual sense of "doubles plus one" and "double minus 1", reviewing odd and even, solving addition and subtraction problems using a range of strategies

Unit 14 - Exploring Multiplication and Division

Key concepts - working with multiples of 2, 3, and 5, using multiplication and division strategies to solve problems

Unit 15 - Exploring 3 D Shapes

Key concept - observing and classifying three-dimensional shapes according to their attributes and functions

Unit 16 - Collecting and Organizing Data

Key concept - classifying food items into categories



Unit 17 - Moving beyond 100

Key concepts - grouping and counting objects numbering more than 100 but less than 200, representing amounts pictorially and symbolically, grouping and counting objects by 1's, 10's, and 100's, extending addition strategies to larger numbers

Unit 18 - Pieces, Parts, and Symmetry

Key concepts - identifying and counting the number of equal fractional parts in a shape, writing the fraction names $\frac{1}{2}$ and $\frac{1}{4}$, identifying line of symmetry, understanding and illustrating fractions

Unit 19 - Measurement and Mapping

Key concept - using a one-dimensional map to find the distance and direction of objects

Unit 20 - Looking Back at First Grade

Key concept - assessing problem solving strategies and concepts learned

Glossary:

approximate: Good guess, close to

area: The amount of space covered by a shape

bar graph: A graph that uses bars to show how often different events happen

counting on: $6 + 4 = 10$, start counting from six and count up 4 more to ten ("6... 7, 8, 9, 10")

data table: A chart that organizes information

interval: Example - The interval 1 - 20 includes the numbers which are between 1 and 20.

line of symmetry: If a figure has line symmetry, it can be folded so that the two parts match in size and shape.

median: The middle number in a set of ordered numerical data. Example: For the numbers 2, 3, 4, 5, and 6, the number 4 is the median number.

number sentence: Examples - $6+4=10$, $8+1=9$, $2+2=4$

skip counting: Example - Counting by 1's, 2's, 5's and 10's

square units: Area is expressed in square units

tally: A method of keeping count with slash marks

ten frames - A tool for counting combinations of 10

Additional Resources and References

Suggested Software

Mighty Math Zoo Zillions
Math Blaster 6-9
Math Rabbit Deluxe
Number Maze Challenge

Web-sites for Parents

**Eisenhower National Clearinghouse:
Family Involvement in Education**
<http://www.enc.org/topics/famcomm/home/>

Helping Your Child Learn Math
<http://www.ed.gov/pubs/parents/Math>

Eduplace: Math and Your Child
<http://www.eduplace.com/math/mathsteps/1/>

Discovery School
<http://school.discovery.com/parents/>

For more information please contact
the Department of Teaching and Learning Services
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