

Mackay Elementary School



Grade Level: 4

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Mackay Elementary

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SUBJECT INFORMATION

Mathematics

4th grade math is divided into five main categories: Numbers and Operations, Concepts and Principles of Measurement, Concepts and Language of Algebra and Functions, Concepts and Principles of Geometry, and Data Analysis, Probability, and Statistics.

COMMON CORE / STATE CONTENT STANDARDS/VOCABULARY OBJECTIVES

By the end of Grade 4, the student will be able to:

- * Read, write, compare, and order whole numbers to 1,000,000.
- * Identify and apply place value in whole numbers.
- * Count the value of a collection of bills and coins up to \$100.00.
- * Read, write, compare, and order commonly used fractions with pictorial representations.
- * Use decimal numbers with money.
- * Add and subtract whole numbers.
- * Multiply up to two-digit by two-digit whole numbers and divide whole numbers by one-digit divisors.
- * Add and subtract fractions with like denominators that do not require simplification.
- * Add and subtract decimals using money.
- * Select and use appropriate operations to solve word problems and show or explain work.
- * Select and use appropriate units and tools to make the formal measurements of length, temperature, and weight in both standard and metric systems.
- * Estimate length, time, weight, and temperature in real-world problems using standard units.
- * Tell time to the nearest minute using digital and analog clocks.

- * Convert units of length and time within the U.S. Customary system.
- * Recall length and volume (capacity) equivalences involving inches, feet, yards, cups, pints, quarts, and gallons in the U.S. Customary system.
- * Write a division problem using a bracket and/or the division symbol.
- * Write a number sentence using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number.
- * Show the relationship between multiplication and division using fact families.
- * Read and use symbols ($<$, $>$, $=$) to express relationships with numbers through 1,000,000.
- * Identify the rule (function) for a pattern using whole numbers and addition, and then extend the pattern.
- * Identify, compare, and analyze attributes of two-and three-dimensional shapes, including parallel, intersecting, and perpendicular lines, and develop vocabulary to describe the attributes.
- * Read and interpret simple tables, charts, bar graphs, and line graphs.

Vocabulary

- Cent~the base unit of money, one one-hundredth of a dollar, a penny.
- Decimal~ a number that uses place value, numbers, and a decimal point to show part of a whole.
- Denominator~ the bottom number in a fraction, in $\frac{5}{6}$ the denominator is 6.
- Digit~ a symbol used to write numbers, the ten digits are 0-9.
- Divide~ an operation on two numbers in which the first number is split into the same number of equal groups as the second number.
- Dividend~ a number that is being divided, ex: $\frac{19}{3}$ 19 is the dividend.
- Divisor~ the number by which the dividend is being divided, ex $\frac{19}{3}$, 3 is the divisor.
- Eighth~ ordinal number.
- Evaluate~ find the value of an expression.
- Expanded form~ a number written as the sum of the value of its digits, ex: $2,345 = 2,000 + 300 + 40 + 5$.
- Fifth~ ordinal number.
- Hundred~ the largest value in each place value.
- Thousand~ the second period in the place value.
- Million~ the third period in the place value.
- Numerator~ the top number in a fraction ex in $\frac{5}{6}$ the numerator is 5.
- Quotient~ the result of a division problem.
- Regroup (borrow, carry)~ to use place value to exchange equal amounts when renaming a number.
- Rounding~ to change the value of a number to one that is easier to work with. To find the nearest value of a number based on a given place value.
- Sequence~ a list of numbers in a particular order
- Convert~change a unit of measurement.
- Elapsed Time~ the amount of time that has passed from beginning to end.
- Equivalence~ two or more fractions with the same value.
- Gram ~ the base unit of measurement for weight.
- Kilogram~ one thousand grams.
- Millimeter~ a unit of measurement for length that is a thousandth of the base unit meter.
- Per~ to, for, or by each, ex: 60 miles per hour.
- Width~ distance across from side to side.
- Division~ an operation on two numbers in which the first number is split into the same number of equal groups as the second number, ex: $\frac{16}{4} = 4$.
- Formula~ an equation that states a rule for the relationship between certain quantities.
- Function~a relationship in which one number depends on another number.
- identity property of multiplication~ if you multiply a number by 1 the product is the same as the given number ex: $8 \times 1 = 8$.
- identity property of addition~ for any number, zero plus that number is that number, ex: $3 + 0 = 3$.
- zero property~ the property that states any number multiplied by zero is zero.

Area~ the measure of the space inside a two- dimensional figure; area is measured in square units.
 Coordinate Grid~ a grid that contains two perpendicular axes (x and y) intersecting at a point called (0,0).
 Face~ the flat part of a three dimensional figure.
 First Quadrant ~ the quarter of a coordinate grid divided by x and y axes only containing positive integers.
 Intersecting~ lines that meet or cross at a point.
 Ordered Pair~ a pair of numbers that are the coordinates of a point in a coordinate plane or grid in this order (horizontal coordinate, vertical coordinate).
 Parallel~ two distinct lines or planes which do not intersect.
 Perimeter~ the distance around a shape or region.
 Perpendicular~ intersecting at a 90 degree angle.
 Polygon~ a closed plane figure formed using line segments that meet only at their endpoints.
 Prism~ a polyhedron with two parallel, congruent faces called bases.
 Quadrilateral~ a shape that has 4 sides and 4 angles.
 Three Dimensional Shape~ having three dimensions of length, width, and height.
 Two Dimensional Shape ~ having only the two dimensions of length and width.
 Axes Labels~ both the side and bottom of the coordinate grid having labels that tells what kind of data is shown.
 Axes Scales~ the numbers that show the units on a coordinate grid.
 Circle Graph (pie chart)
 Experiment~a circular graph having radii dividing the circle into sectors proportional in angle and area to the relative size of the quantities represented.
 Label~ both the side and bottom of the graph having label that tells what kind of data is shown.
 Line Graph~ a graph that uses points connected by line segments to represent data.
 Mode~ the number or numbers that occurs most often in a set of data. A set can have more than one mode.
 Probability ~ a number between 0 and 1 that measures the likelihood of an event happening.
 Title~ a few key words that explain what the graph is about.

INSTRUCTIONAL MATERIALS

Scott Foresman/Addison Wesley--**enVision Math**
 Student Text and Teacher Resources
 The Quiz Show
 Envision Math Online Materials--PearsonVue

UNITS WITH INSTRUCTIONAL DATES

The Following lesson schedule is subject to revision according to schedule changes.

2011-2012

| Quarter | Lesson | Description |
|-----------------------------|----------------------------------|---|
| 1 8/22/11 to 10/20/11 | Beginning of the year assessment | |
| | Topic 1 | Place-value –thousands and millions Comparing and ordering whole numbers, rounding whole numbers, and using money to understand decimals Counting money and making change and problem solving making an |

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| | | organized list, Topic 1 Test |
| | Topic 2 | Using mental math to add and subtract, estimating sums and differences of whole numbers, problem solving using missing or extra information, and adding whole numbers Subtracting whole numbers, subtracting across zeros, and problem solving by drawing a picture and writing an equation, Topic 2 Test |
| | Topic 3 | Meanings of multiplication, patterns for facts, multiplication Using 6, 7, 9, 10, 11, and 12 as factors; problem solving: drawing a picture and writing an equation, Topic 3 Test |
| | Topic 4 | Meanings of division, relating multiplication and division, special quotients, and using multiplication facts to find division facts Problem solving: Drawing a picture and writing an equation, Topic 4 Test |
| | Cumulative Test, Benchmark Test | |
| | | End of 1st Quarter |
| 2 10/21/11 to 12/20/11 | Topic 5 | Multiply by multiples of 10 and 100, and using mental math to multiply, using mental math to multiply, using rounding to estimate, and problem solving: reasonableness, using an expanded algorithm, multiply 2-digit by 1-digit numbers, multiplying 3-digit by 1 digit numbers, and problem solving: draw a picture and write an equation, Topic 5 Test |
| | Topic 6 | Variables and expressions, addition and subtraction expressions, and multiplication and division expressions, problem solving: use objects and reasoning, Topic 6 Test |
| | Topic 7 | Using mental math to multiply 2-digit numbers, and estimating products, arrays and an expanded algorithm, multiplying 2-digit numbers by multiples of ten, and multiplying 2-digit by 2-digit numbers, special cases, problem solving: two-question problems, Topic 7 Test |
| | Topic 8 | Using mental math to divide, estimating quotients, dividing with remainders, connecting models and symbols, and dividing 2-digit by 1-digit numbers, dividing 3-digit by 1-digit numbers, deciding where to start dividing, factors, and prime and composite numbers, problem solving: multiple-step problems, Topic 8 Test |

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| | | End of 2nd Quarter |
| 3 12/21/11 to 3/8/12 | Cumulative Test, Benchmark Test | |
| | Topic 9 | Points, lines, planes, line segments, rays, angles, measuring angles, and polygons, triangles, quadrilaterals, and problem solving: make and test generalizations, Topic 9 Test |

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| | Topic 10 | Regions and sets, fractions and division, estimating fractional amounts, and equivalent fractions, fractions in simplest form, improper fractions and mixed numbers, comparing fractions, and ordering fractions, problem solving: writing to explain, Topic 10 Test |
| | Topic 11 | Adding and subtracting fractions with like denominators, and adding fractions with unlike denominators, subtracting fractions with unlike denominators, problem solving: draw a picture and write an equation, Topic 11 Test |
| | Topic 12 | Decimal place value, comparing and ordering decimals, fractions and decimals, fractions and decimals on the number line, mixed numbers and decimals on the number line, problem solving: draw a picture, Topic 12 Test |
| | Cumulative Test, Benchmark Test | |
| | Topic 13 | Rounding decimals, estimating sums and differences of decimals, modeling addition and subtraction of decimals, and adding and subtracting decimals, multiplying a whole number by a decimal, dividing a decimal by a whole number, problem solving: try, check, and revise, Topic 13 Test |
| | Topic 14 | Understanding area, area of squares and rectangles, area of irregular shapes, and area of parallelograms, area of a triangle, perimeter, same perimeter, different area, and same area, different perimeter, problem solving: solve a simpler problem and make a table, Topic 14 Test |
| | | End of 3rd Quarter |
| 4 3/9/12 to 5/24/12 | Topic 15 | Solids, views of solids: nets, views of solids: perspective, volume, problem solving: look for a pattern, Topic 15 Test |
| | Topic 16 | Use customary units of length, customary units of capacity, units of weight, changing customary units, using metric units of length, metric units of capacity, units of mass, changing metric units, units of time, elapsed time, temperature, and problem solving: work backward, Topic 16 Test |
| | Cumulative Test Benchmark Test | |
| | Topic 17 | Data from surveys, interpreting graphs, line plots, ordered pairs, line graphs, mean, median, mode, range, and stem-and-leaf plots, reading circle graphs, problem solving: make a graph, equal or not equal, Topic 17 Test |
| | Topic 18 | Solving addition and subtraction equations, solving multiplication and division equations, understanding inequalities, and problem solving: work backward, Topic 18 Test |
| | Topic 19 | Translations, reflections, rotations, congruent figures, line symmetry, and problem solving: draw a picture, Topic 19 Test |
| | Topic 20 | Finding combinations, outcomes and tree diagrams, working probability as a fraction, and problem solving: using reasoning, Topic 20 Test |

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| | Cumulative Test, Benchmark Test, | |
| | End-of-the-year Test, Review | |

ASSESSMENTS / TESTS

Beginning of the Year and Ending of the year Assessments, Topic Tests, Cumulative and Benchmark Tests every 4 Topics, Daily Spiral Review, and Daily Quick Checks

GRADING PROCEDURES

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| Daily Homework (1 per lesson) | 100 points each |
| Daily Math Lesson | 100 points each |
| Topic Tests | 100 points each |

Percentage Values:

99-100—A+
94-98—A
90-93—A-
86-89—B+
83-85—B
80-82—B-
76-79—C+
73-75—C
70-72—C-
66-69—D+
63-65—D
60-62—D-
59↓-- F

*Students will be able to correct errors on homework for additional points to increase their scores

CLASS RULES

We will listen to ALL adults in the building.
We will work quietly.
We will come to class prepared and with our school work completed.
We will respect our school, classmates, and the belongings of our classmates.
We will not bully others.
We will speak only when others are not speaking.
We will finish all schoolwork first.
We will put away all items correctly and keep all areas of the room clean.

My Pledge to Students

The following is a list of goals that I have set for myself this year. I will make every effort to live up to these goals:

- 1) I will treat you with respect, so you will know how to treat me.
- 2) Feel free to do anything that doesn't cause a problem for anyone else.
- 3) If you can't solve a problem, or choose not to, I will do something.
- 4) What I do will depend on the special person and the special situation.
- 5) If you feel something is unfair, whisper to me, "I'm not sure that is fair," and we will talk.

- 6) I will greet students each morning with a smile, and will be generous with my smiles throughout the day.
- 7) I will look for opportunities to reward and praise students for their work and good behavior.
- 8) I will not show favoritism, and will try to be fair to all.
- 9) I will use fair and appropriate methods of discipline.
- 10) I will try to make classroom instruction as interesting as possible and look for new and diverse ways of presenting materials.
- 11) I will maintain a positive atmosphere for learning.
- 12) I will treat my students with respect and will not embarrass them in front of their classmates.
- 13) I will make myself available and approachable to students.

- 14) I will recognize the individuality of my students and will provide opportunities for each of them to experience success. I pledge to work diligently to make this a very successful year for us all.

MISCELLANEOUS

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