

OAK LAWN-HOMETOWN SCHOOL DISTRICT 123

THIRD GRADE MATH ESSENTIAL OUTCOMES

STATE GOAL 6: DEMONSTRATE AND APPLY A KNOWLEDGE AND SENSE OF NUMBERS, INCLUDING NUMERATION AND OPERATIONS (ADDITION, SUBTRACTION, MULTIPLICATION, DIVISION) PATTERNS, RATIOS, AND PROPORTIONS.

Why this goal is important: Numbers and operations on numbers play fundamental roles in helping us make sense of the world around us. Operations such as addition, subtraction, multiplication, and division as well as the ability to find powers and roots, extend the notion of numbers to create tools to model situations and solve problems in our everyday lives.

GOAL 6 - STANDARD A: Demonstrate knowledge and use numbers and their representations in a broad range of theoretical and practical settings.

- Recognize a fraction represented by a pictorial model.
- Identify and write whole numbers up to 100,000.
- Order and compare whole numbers up to 10,000 using words and symbols (e.g., $<$, $>$).
- Understand division as “equal sharing” and “equal grouping”.
- Identify and locate whole numbers and halves on a number line.
- Understand that a decimal represents a part of a whole (e.g., $0.2 < 1$).

GOAL 6 - STANDARD B: Investigate, represent, and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms, and relationships.

- Demonstrate automaticity with $\times 0$, $\times 1$, $\times 2$, $\times 5$, and $\times 10$ multiplication facts; use strategies to compute remaining facts up to 10×10 .
- Solve problems and number sentences involving addition and subtraction with regrouping; describe strategies used (e.g., proof drawings).
- Use the inverse relationships between addition and subtraction to complete basic fact sentences and solve problems (e.g., $5+3=8$ and $8-3=?$).
- Use arrays, mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving multiplication of 2- and 3-digit whole numbers by 1-digit whole numbers; describe the strategies used.

GOAL 6 - STANDARD C: Compute and estimate using mental mathematics, paper- and pencil methods, calculators, and computers.

- Make reasonable estimates for whole number addition and subtraction problems; explain how the estimates were obtained.
- Use a variety of methods and appropriate tools for computing with 2-digit whole numbers; e.g., mental math, paper and pencil, and calculator.

GOAL 6 - STANDARD D: Solve problems using comparison of quantities, ratios, proportions, and percents.

- Use the symbols $>$, $<$, and $=$ to compare numbers and money amounts.

STATE GOAL 7: ESTIMATE, MAKE, AND USE MEASUREMENTS OF OBJECTS, QUANTITIES, AND RELATIONSHIPS AND DETERMINE ACCEPTABLE LEVELS OF ACCURACY.

Why this goal is important: Measurement provides a way to answer questions about “how many,” “how much,” and “how far.” It is an indispensable component of business, manufacturing, art medicine, and many other aspects of life. All people must be able to choose an appropriate level of accuracy for a measurement, to select what measuring instruments to use, and to correctly determine the measures of objects, space, and time.

OAK LAWN-HOMETOWN SCHOOL DISTRICT 123

THIRD GRADE MATH ESSENTIAL OUTCOMES

GOAL 7 - STANDARD A: Measure and compare quantities using appropriate units, instruments and methods.

- Tell and show time to the nearest minute using an analog clock.
- Describe relationships among inches, feet, and yards; describe relationships between minutes in an hour.
- Measure temperature to the nearest degree.
- Select and use appropriate standard units and tools to measure length to the nearest $\frac{1}{2}$ inch or $\frac{1}{2}$ centimeter.

GOAL 7 - STANDARD B: Estimate measurements and determine acceptable levels of accuracy.

- Understand relationships between U.S. customary and metric (e.g., one centimeter is shorter than one inch).
- Compare and estimate length, including perimeter and area.

GOAL 7 - STANDARD C: Select and use appropriate technology, instruments, and formulas to solve problems, interpret results, and communicate findings.

- Solve problems involving perimeter of a polygon when given side lengths.

STATE GOAL 8: USE ALGEBRAIC AND ANALYTICAL METHODS TO IDENTIFY AND DESCRIBE PATTERNS AND RELATIONSHIPS IN DATA, SOLVE PROBLEMS, AND PREDICT RESULTS.

Why this goal is important: Algebra unites patterns and quantities in patterns with the means of describing change through the use of variables and functions. Its concepts and analytical methods allow people to consider general solutions to problems with common characteristics and develop related formulas. All people must be able to use algebraic methods to construct and examine tables of values; to interpret the relationships expressed by patterns in these tables; to relate change and variation in changes; and to find solutions to everyday problems using algebra's symbolic manipulation and formulas.

GOAL 8 - STANDARD A: Describe numerical relationships using variables and patterns.

- Use words and symbols to describe and write an expression or number sentence to model number stories or patterns (e.g., "What's my rule?").

GOAL 8 - STANDARD B: Interpret and describe numerical relationships using tables, graphs, and symbols.

- Describe situations with constant rates of change using words, tables, and graphs (e.g., A caterpillar crawls two inches each day. How far does it crawl in seven days?)

GOAL 8 - STANDARD C: Solve problems using systems of numbers and their properties.

- Represent simple mathematical relationships with number sentences (equations and inequalities).

GOAL 8 – STANDARD D: Use algebraic concepts and procedures to represent and solve problems.

- Solve one-step addition and subtraction equations that have a missing number or missing operation sign (e.g., change-to-more, change-to-less).
- Model situations that involve whole numbers using the strategy "find the pattern" using an additive pattern.

OAK LAWN-HOMETOWN SCHOOL DISTRICT 123

THIRD GRADE MATH ESSENTIAL OUTCOMES

STATE GOAL 9: USE GEOMETRIC METHODS TO ANALYZE, CATEGORIZE, AND DRAW CONCLUSIONS ABOUT POINTS, LINES, PLANES, AND SPACE.

Why this goal is important: Geometry provides important methods for reasoning and solving problems with points, lines, planes, and space. While we still use modern technology and employ a wider variety of mathematical tools today, we still study geometry to understand the shapes and dimensions of our world. Historically, geometry is a way to develop skill in forming convincing arguments and proofs. This goal of developing a means to argument and validation remains an important part of our reasons for studying geometry today.

GOAL 9 - STANDARD A: Demonstrate and apply geometric concepts involving points, lines, planes, and space.

- Analyze and describe properties of two-dimensional shapes and three-dimensional objects using terms such as vertex, edge, angle, side and face.
- Identify parallel lines.
- Sketch the line of symmetry in a given shape.
- Sketch two-dimensional shapes according to the number of sides, length of sides, and number of vertices.

GOAL 9 - STANDARD B: Identify, describe, classify, and compare relationships using points, lines, planes, and solids.

- Identify a three-dimensional object from its net.
- Solve problems involving simple unit conversions within the same measurement system for time and length.
- Specify locations and plot ordered pairs on a coordinate plane, using first quadrant points.

STATE GOAL 10: COLLECT, ORGANIZE, AND ANALYZE DATA USING STATISTICAL METHODS; PREDICT RESULTS; AND INTERPRET UNCERTAINTY USING CONCEPTS OF PROBABILITY.

Why this goal is important: The ability to understand and interpret data (e.g., opinion polls, stock prices, tax rates, crime statistics, scientific studies, weather reports) grows more important each day. Students must be able to organize data, make sense of variables and patterns, and judge the logical reasonableness of any claims and interpretations made. All students need to understand and apply the role probability plays in data collection and decision making. Data analysis and use are important abilities necessary for all careers.

GOAL 10 - STANDARD A: Organize, describe and make predictions from existing data.

- Analyze and create bar graphs with intervals greater than one.
- Complete missing parts of various types of graphs for a given set of data.
- Represent data using tables and graphs such as tallies and bar graphs.

GOAL 10 - STANDARD B: Formulate questions, design data collection methods, gather, and analyze data and communicate findings.

- Identify the mode of a data set.

GOAL 10 - STANDARD C: Determine, describe, and apply the probabilities of events.

- Predict the outcomes of experiments and test the predictions using manipulatives; summarize the results and use them to predict future events.

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