BROWNELL TALBOT

Grade 5 Prioritized Math Standards

The prioritized standards listed align with both the NCTM (National Council for Teachers of Mathematics) and the Nebraska State Standards. The NCTM also includes a set of Process Standards for grades preschool through 12 that highlight mathematical processes that students draw on to acquire and use their content knowledge (see the link on the next page).

Number & Operations	
Understand numbers, ways of representing numbers, relationships among numbers, and number systems	Generate equivalent forms of commonly used fractions, decimals, and percents. Explore numbers less than 0 by extending the number line and through familiar applications.
Understand meanings of operations and how they relate to one another	Understand and use properties of operations, such as distributivity of multiplication over addition.
Compute fluently and make reasonable estimates	Apply strategies to estimate computations involving fractions and decimals in situations relevant to student's experience. Use visual models, benchmarks, and equivalent forms to add and subtract fractions and decimals.
Algebra	
Understand patterns, relations, & functions	Analyze patterns and functions, using words, tables, and graphs.
Represent and analyze mathematical situations and structures using algebraic symbols	Accurately express mathematical relationships using equations. (e.g. commutative, associative, distributive)
Use mathematical models to represent and understand quantitative relationships	Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.
Analyze change in various contexts	Identify and describe situations with constant or varying rates of change.

Geometry	
Analyze characteristics and properties of two and three dimensional geometric shapes and develop mathematical arguments about geometric relationships	Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions.
Specify locations and describe spatial relationships using coordinate geometry and other representational systems	Use coordinate systems to specify locations and to describe paths.
Use visualization, spatial reasoning, and geometric modeling to solve problems	Use geometric models to solve problems in other areas of mathematics, such as number and measurement. Recognize geometric ideas and relationships and apply them to other disciplines and to problems that arise in the classroom of everyday life.

Measurement	
Understand measurable attributes of objects and the units, systems, and processes of measurement	Explain and apply measuring with standard units in the customary and metric systems. Compute unit conversions within a system of measurement. Compare measurement approximations and differences in units.
Apply appropriate techniques, tools, and formulas to determine measurements	Use formulas to find the area of rectangles and related triangles and parallelograms. Develop strategies to determine the surface areas and volumes of rectangular solids.

Data Analysis & Probability	
Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them	Design an investigation to address more than one question and explain how data collection methods affect the nature of the data set. Collect and compare data using observations, surveys, and experiments.
Select and use appropriate statistical methods to analyze data	Use measures of center, focusing on the median, and understand what each does and does not indicate about the data set.
Develop and evaluate inferences and predictions that are based on data	Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions or predictions.

NCTM Process Standards: brownell.edu/nctm