Wallingford Public Schools Pacing Calendar Mathematics Grade 6

Draft 2010-2011

UNIT AND DATE	GRADE LEVEL EXPECTATIONS
Factors & Order of Operations 5 weeks	*2.2.21 Apply the order of operations* and algebraic properties (commutative, associative, distributive, inverse operations, and the additive and multiplicative identities) to compute and solve multistep problems, and explain solutions in writing. *2.2.8 Understand place value and patterns in place value* when multiplying and dividing decimals by powers of 10. 2.2.4 Represent chain multiplication, including powers of 10, in exponential and standard form such as $5 \times 5 \times 5 = 5^3 = 125$. *2.2.5 Factor composite numbers and express them as a product of primes using exponents.* 2.2.20 *Understand and use divisibility rules, factors of composite numbers and powers of 10 to find products* and quotients.
Fractions & Decimals 6.5-7 weeks	*1.3.6 Write, model and solve one-step equations using mental math, tables,* substitution and *concrete models that demonstrate equivalence, and justify the solutions.* 2.1.6 Determine equivalent fraction, decimal and percentage representations and choose among these forms to solve problems. 2.1.1 *Locate and label whole numbers, fractions, decimals* and positive and negative integers on *number lines, scales*, coordinate grids (all four quadrants) and *measurement tools*. *2.1.2 Compare and order whole numbers, fractions, decimals and positive* and negative integers in context using number lines and scales. 2.2.10 Estimate and find percentages of a number in context using benchmarks, number patterns and ratios to one hundred. 2.2.11 Solve practical problems involving rates, *ratios, percentages* and proportionality. 2.2.8 Understand place value and patterns in place value when multiplying and dividing decimals by powers of 10. 2.1.3 Represent and compare whole numbers (to a billion) and decimals (to thousandths) in expanded notation. For example: $75.654 = (7 \times 10) + (5 \times 1) + (6 \times 0.1) + (5 \times 0.01) + (4 \times 0.001)$. *2.1.7 Use ratios and rates (involving different units) to compare quantities.*

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Polygons & Symmetry 5 weeks	*3.1.1 Classify sets and subsets of polygons using the relationships of the sides (length, parallel and perpendicular) and angles (types and measures).* 3.1.2 Make and test conjectures about polygons and congruence using side and angle relationships and describe the results in writing. *3.1.3 Identify lines of symmetry and reflections, rotations and translations of geometric figures.* 2.2.17 *Determine when an estimate is sufficient or when an exact answer is needed.* 3.3.8 Select and use appropriate strategies, tools and units to estimate and solve measurement problems involving length, perimeter, area, volume, capacity, mass and weight. 3.3.9 Use ratios to convert between customary units of length, mass, capacity and time. 3.2.6 *Use and describe concrete strategies for finding the volume of rectangular solids and cylinders.*
Fractions and Decimals -Part 2 4 weeks	*2.2.12 Add, subtract, multiply and divide by fractions and decimals in context.* *2.2.13 Describe situations in writing that connect multiplying fractions to determining the fractional part of a set.* 2.2.14 Use the inverse relationship between multiplication and division to make sense of procedures for multiplying and dividing fractions. 2.2.16 Understand and defend in writing the magnitude of the result of multiplication or division problems involving fractions or decimals. 2.2.17 Determine when an estimate is sufficient or when an exact answer is needed. 2.2.18 *Estimate solutions to problems, and justify the reasonableness of estimates in writing.* 2.2.19 *Write and solve multistep problems in context involving addition, subtraction, multiplication and division with whole numbers, fractions, decimals*, money and simple percentages
Fractions and Decimals – Part 3 5 weeks	2.2.20 Understand and use divisibility rules, factors of composite numbers and powers of 10 to find products and quotients. 2.2.19 *Write and solve multistep problems in context involving addition, subtraction, multiplication and division with whole numbers, fractions, decimals, money and simple percentages.* 2.2.17 *Determine when an estimate is sufficient or when an exact answer is needed.* 2.2.18 Estimate solutions to problems, and justify the reasonableness of estimates in writing. 2.2.11 *Solve practical problems involving rates, ratios, percentages and proportionality.* 3.3.10 *Use ratios and powers of 10 to convert between metric units.*

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Length, Perimeter and Area 4 weeks	3.1.1 Use rectangles as basic shapes to model and develop formulas for finding the area of triangles, parallelograms and trapezoids. 3.1.2 Recognize the relationships among the radius, diameter, circumference and area of circles and develop formulas for finding the circumference and area based on these relationships. 3.3.8 Select and use appropriate strategies, tools and units to estimate and solve measurement problems involving length, perimeter, area, volume, capacity, mass and weight 3.2.7 Use measurements to examine the ratios between corresponding side lengths of scale models and similar figures.
Data Analysis and Coordinate Graphs 3 weeks	*4.1.1 Compare sets of data between two populations such as heights of two classes of students or within a population such as height vs. arm length of sixth-grade students using a variety of graphical representations.* *4.1.2 Select, create and use appropriate graphical representations of data including, circle graphs, scatter plots, histograms, and stem-and-leaf plots.* 4.2.3 *Describe the shape of numerical data sets using measures of spread (range) and central tendency (mean, median, mode) and outliers.* 4.2.4 Determine how the mean, median, mode and range change as a result of changes in the data set and describe the changes in writing.
Probability 3 weeks	*4.3.5 Investigate and describe the relationship between the number of trials in an experiment and the predicted outcomes.* 4.3.6 Investigate and describe the relationship between the number of trials in an experiment and the predicted outcomes. *4.3.7 Express probabilities as fractions, ratios, decimals and percentages.* 4.3.8 Find all possible outcomes using systematic listing and counting strategies to solve problems.