OREGON DEPARTMENT OF EDUCATION

Standards By Design:

Fourth Grade for Mathematics

Mathematics

Fourth Grade

Fourth grade mathematics students continue to refine their multiplication and division skills by developing strategies for multi-digit multiplication and division. Additionally, they represent and compare simple fractions and decimals. In geometry they study the perimeter and area of rectangles and squares.

*It is essential that these standards be addressed in contexts that promote problem solving, reasoning, communication, making connections, and designing and analyzing representations.

4.1 Number and Operations: Develop an understanding of decimals, including the connections between fractions and decimals.

4.1.1 Extend the base-ten system to read, write, and represent decimal numbers (to the hundredths) between 0 and 1, between 1 and 2, etc.

4.1.2 Use models to connect and compare equivalent fractions and decimals.

4.1.3 Determine decimal equivalents or approximations of common fractions.

4.1.4 Compare and order fractions and decimals.

4.1.5 Estimate decimal or fractional amounts in problem solving.

4.1.6 Represent money amounts to $10.00 in dollars and cents, and apply to situations involving purchasing ability and making change.

4.2 Number and Operations and Algebra: Develop fluency with multiplication facts and related division facts, and with multi-digit whole number multiplication.

4.2.1 Apply with fluency multiplication facts to 10 times 10 and related division facts.

4.2.2 Apply understanding of models for multiplication (e.g., equal-sized groups, arrays, area models, equal intervals on the number line), place value, and properties of operations (commutative, associative, and distributive).

Mathematics Numbering Key Example: H.2.A.1
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2 = Core Standard number
A = Math Discipline (High School only). Disciplines are A = Algebra; G = Geometry; S = Statistics
1 = Number of the content standard for this grade, core standard, and discipline

4.2.3 Select and use appropriate estimation strategies for multiplication (e.g., use benchmarks, overestimate, underestimate, round) to calculate mentally based on the problem situation when computing with whole numbers.

4.2.4 Develop and use accurate, efficient, and generalizable methods to multiply multi-digit whole numbers.

4.2.5 Develop fluency with efficient procedures for multiplying multi-digit whole numbers and justify why the procedures work on the basis of place value and number properties.

4.3 Measurement: Develop an understanding of area and determine the areas of two-dimensional shapes.

4.3.1 Recognize area as an attribute of two-dimensional regions.

4.3.2 Determine area by finding the total number of same-sized units of area that cover a shape without gaps or overlaps.

4.3.3 Recognize a square that is one unit on a side as the standard unit for measuring area.

4.3.4 Determine the appropriate units, strategies, and tools to solving problems that involve estimating or measuring area.

4.3.5 Connect area measure to the area model used to represent multiplication and use this to justify the formula for area of a rectangle.

4.3.6 Find the areas of complex shapes that can be subdivided into rectangles.

4.3.7 Solve problems involving perimeters and areas of rectangles and squares.

4.3.8 Recognize that rectangles with the same area can have different perimeters and that rectangles with the same perimeter can have different areas.

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