Washington Mathematics

Grade 3

Standards for Mathematical Practice

1 **Make sense of problems and persevere in solving them.** 1

2 **Reason abstractly and quantitatively.** 2

3 **Construct viable arguments and critique the reasoning of others.** 3

4 **Model with mathematics.** 4

5 **Use appropriate tools strategically.** 5

6 **Attend to precision.** 6

7 **Look for and make use of structure.** 7

8 **Look for and express regularity in repeated reasoning.** 8

Operations and Algebraic Thinking

A **Represent and solve problems involving multiplication and division.**

1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. 3.OA.A.1

2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. 3.OA.A.2

3 Use multiplication and division within 100 to flexibly, efficiently, and accurately solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. 3.OA.A.3

4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. 3.OA.A.4

B **Explore and use properties of multiplication to understand the relationship between multiplication and division.**

5 Use strategies to multiply and divide by applying and extending understanding of the properties of operations. 3.OA.B.5

6 Demonstrate understanding of division as an unknown-factor problem. 3.OA.B.6

C Multiply and Divide within 100.

7 Flexibly, efficiently, and accurately multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. 3.OA.C.7

D Solve problems involving the four operations and identify and explain patterns in arithmetic.

8 Flexibly, efficiently, and accurately solve two-step word problems using the four operations. Represent these problems using visual models and equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental and estimation strategies. 3.OA.D.8

9 Identify arithmetic patterns (including patterns in the addition table or multiplication table and explain them using properties of operations. 3.OA.D.9

Numbers and Operations in Base Ten

A Use place value understanding and properties of operations to perform multidigit arithmetic.

1 Use place value understanding to round whole numbers to the nearest 10 or 100. 3.NBT.A.1

2 Flexibly, accurately, and efficiently add and subtract within 1000 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. 3.NBT.A.2

3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. 3.NBT.A.3

Numbers and Operations—Fractions

A Develop understanding of fractions as numbers.

1 Understand a unit fraction as the quantity formed when a whole is partitioned into equal parts and explain that a unit fraction is one of those parts (e.g., 1414); understand fractions are composed of unit fractions. 3.NF.A.1

2 Understand a fraction as a number and that it can be represented on the number line; represent fractions on a number line diagram. 3.NF.A.2

3 Explain equivalence of fractions and compare fractions by reasoning about their size. 3.NF.A.3

Measurement and Data

A Solve problems involving measurement and estimation.

1. Tell and write time to the nearest minute and measure time intervals in minutes. Flexibly, efficiently, and accurately solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. 3.MD.A.1
2. Measure and estimate liquid volumes and masses of objects using standard units of grams (gggg), kilograms (kg$kkkk$), and liters (lll). Add, subtract, multiply, or divide to flexibly, efficiently, and accurately solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. 3.MD.A.2

B Represent and Interpret Data.

3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. 3.MD.B.3
4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. 3.MD.B.4

C Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement. 3.MD.B.5
6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). 3.MD.B.6
7. Relate area to the operations of multiplication and addition. 3.MD.B.7

D Geometric measurement: recognize perimeter.

8. Flexibly, efficiently, and accurately solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. 3.MD.D.8

Geometry

A Reason with shapes and their attributes.

1. Demonstrate understanding that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. 3.G.A.1
2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. 3.G.A.2

Data Science

Formulate statistical investigative questions.

1 Generate questions to investigate situations of interest to students that can be answered with a variety of data or data sets. 3.DS.1

Collect data/ consider data.

2 Collect and consider data in a variety of ways including surveys, groupings, measurement, etc., and ask in what ways can the data be collected to capture as much information as necessary to inform the investigative question. 3.DS.2

Analyze the data.

3 Represent data in a variety of ways including technology. Critically analyze data visualizations, including bar graphs, line plots, and scaled picture graphs with various scales. Analyze data sets with several categories by making comparisons, looking for patterns and/or making predictions and recognize the source and amount of data collected may impact the accuracy. 3.DS.3

Interpret results.

4 Interpret and communicate results, describing difference between groups, with teacher guidance. Make a statement(s) about the data collected to support the answer to the investigative question. 3.DS.4