Alabama Mathematics

Grade 3

Adopted 2019

Student Mathematical Practices

1. **Make sense of problems and persevere in solving them.** MP.1
2. **Reason abstractly and quantitatively.** MP.2
3. **Construct viable arguments and critique the reasoning of others.** MP.3
4. **Model with mathematics.** MP.4
5. **Use appropriate tools strategically.** MP.5
6. **Attend to precision.** MP.6
7. **Look for and make use of structure.** MP.7
8. **Look for and express regularity in repeated reasoning.** MP.8

Operations and Algebraic Thinking

A. Represent and solve problems involving multiplication and division. 3.OA.A

1. Illustrate the product of two whole numbers as equal groups by identifying the number of groups and the number in each group and represent as a written expression. 3.OA.A.1
2. Illustrate and interpret the quotient of two whole numbers as the number of objects in each group or the number of groups when the whole is partitioned into equal shares. 3.OA.A.2
3. Solve word situations using multiplication and division within 100 involving equal groups, arrays, and measurement quantities; represent the situation using models, drawings, and equations with a symbol for the unknown number. 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. Understand properties of multiplication and the relationship between multiplication and division. 3.OA.B

5. Develop and apply properties of operations as strategies to multiply and divide. 3.OA.B.5
6. Use the relationship between multiplication and division to represent division as an equation with an unknown factor. 3.OA.B.6

Multiply and divide within 100. 3.OA.C

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7. Use strategies based on properties and patterns of multiplication to demonstrate fluency with multiplication and division within 100. 3.OA.C.7

   a. Fluently determine all products obtained by multiplying two one-digit numbers. 3.OA.C.7.A

   b. State automatically all products of two one-digit numbers by the end of third grade. 3.OA.C.7.B

D. Solve problems involving the four operations and identify and explain patterns in arithmetic. 3.OA.D

8. Determine and justify solutions for two-step word problems using the four operations and write an equation with a letter standing for the unknown quantity. Determine reasonableness of answers using number sense, context, mental computation, and estimation strategies including rounding. 3.OA.D.8

9. Recognize and explain arithmetic patterns using properties of operations. 3.OA.D.9

Operations with Numbers: Base Ten

A. Use place value understanding and properties of operations to perform multi-digit arithmetic. 3.NBT.A

10. Identify the nearest 10 or 100 when rounding whole numbers, using place value understanding. 3.NBT.A.10

11. Use various strategies to add and subtract fluently within 1000. 3.NBT.A.11

12. Use concrete materials and pictorial models based on place value and properties of operations to find the product of a one-digit whole number by a multiple of ten (from 10 to 90). 3.NBT.A.12

Operations with Numbers: Fractions

A. Develop understanding of fractions as numbers. 3.NF.A

13. Demonstrate that a unit fraction represents one part of an area model or length model of a whole that has been equally partitioned; explain that a numerator greater than one indicates the number of unit pieces represented by the fraction. 3.NF.A.13

14. Interpret a fraction as a number on the number line; locate or represent fractions on a number line diagram. 3.NF.A.14

   a. Represent a unit fraction (1/b) on a number line by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts as specified by the denominator. 3.NF.A.14.A

   b. Represent a fraction (a/b) on a number line by marking off a lengths of size (1/b) from zero. 3.NF.A.14.B

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15. Explain equivalence and compare fractions by reasoning about their size using visual fraction models and number lines. 3.NF.A.15

    a. Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. 3.NF.A.15.A

    b. Compare two fractions with the same numerator or with the same denominator by reasoning about their size (recognizing that fractions must refer to the same whole for the comparison to be valid). Record comparisons using < , >, or = and justify conclusions. 3.NF.A.15.B

Data Analysis

A. Represent and interpret data. 3.DA.A

16. For a given or collected set of data, create a scaled (one-to-many) picture graph and scaled bar graph to represent a data set with several categories. 3.DA.A.16

    a. Determine a simple probability from a context that includes a picture. 3.DA.A.16.A

    b. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled graphs. 3.DA.A.16.B

17. Measure lengths using rulers marked with halves and fourths of an inch to generate data and create a line plot marked off in appropriate units to display the data. 3.DA.A.17

Measurement

A. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. 3.M.A

18. Tell and write time to the nearest minute; measure time intervals in minutes (within 90 minutes.) 3.M.A.18

    a. Solve real-world problems involving addition and subtraction of time intervals in minutes by representing the problem on a number line diagram. 3.M.A.18.A

A19. Estimate and measure liquid volumes and masses of objects using liters (l), grams (g), and kilograms (kg). 3.M.A19

    a. Use the four operations to solve one-step word problems involving masses or volumes given in the same metric units. 3.M.A.19.A

B. Geometric measurement: understand concepts of area and relate area to multiplication and to addition. 3.M.B

20. Find the area of a rectangle with whole number side lengths by tiling without gaps or overlays and counting unit squares. 3.M.B.20

21. Count unit squares (square cm, square m, square in, square ft, and improvised or non-standard units) to determine area. 3.M.B.21

22. Relate area to the operations of multiplication using real-world problems, concrete materials, mathematical reasoning, and the distributive property. 3.M.B.22

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23. Decompose rectilinear figures into smaller rectangles to find the area, using concrete materials. 3.M.B.23

C. Geometric measurement: Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. 3.M.C

24. Construct rectangles with the same perimeter and different areas or the same area and different perimeters. 3.M.C.24

25. Solve real-world problems involving perimeters of polygons, including finding the perimeter given the side lengths and finding an unknown side length of rectangles. 3.M.C.25

Geometry

A. Reason with shapes and their attributes. 3.G.A

26. Recognize and describe polygons (up to 8 sides), triangles, and quadrilaterals (rhombuses, rectangles, and squares) based on the number of sides and the presence or absence of square corners. 3.G.A.26

    a. Draw examples of quadrilaterals that are and are not rhombuses, rectangles, and squares. 3.G.A.26.A