

Mathematics
Grade-Level Expectations: Grade 5

Number and Number Relations

1. Differentiate between the terms *factor* and *multiple*, and *prime* and *composite* (N-1-M)
2. Recognize, explain, and compute equivalent fractions for common fractions (N-1-M) (N-3-M)
3. Add and subtract fractions with common denominators and use mental math to determine whether the answer is reasonable (N-2-M)
4. Compare positive fractions using number sense, symbols (i.e., $<$, $=$, $>$), and number lines (N-2-M)
5. Read, explain, and write a numerical representation for positive improper fractions, mixed numbers, and decimals from a pictorial representation and vice versa (N-3-M)
6. Select and discuss the correct operation for a given problem involving positive fractions using appropriate language such as *sum*, *difference*, *numerator*, and *denominator* (N-4-M) (N-5-M)
7. Select, sequence, and use appropriate operations to solve multi-step word problems with whole numbers (N-5-M) (N-4-M)
8. Use the whole number system (e.g., computational fluency, place value, etc.) to solve problems in real-life and other content areas (N-5-M)
9. Use mental math and estimation strategies to predict the results of computations (i.e., whole numbers, addition and subtraction of fractions) and to test the reasonableness of solutions (N-6-M) (N-2-M)
10. Determine when an estimate is sufficient and when an exact answer is needed in real-life problems using whole numbers (N-6-M) (N-5-M)
11. Explain concepts of ratios and equivalent ratios using models and pictures in real-life problems (e.g., understand that $\frac{2}{3}$ means 2 divided by 3) (N-8-M) (N-5-M)

Algebra

12. Find unknown quantities in number sentences by using mental math, backward reasoning, inverse operations (i.e., unwrapping), and manipulatives (e.g., tiles, balance scales) (A-2-M) (A-3-M)
13. Write a number sentence from a given physical model of an equation (e.g., balance scale) (A-2-M) (A-1-M)
14. Find solutions to one-step inequalities and identify positive solutions on a number line (A-2-M) (A-3-M)

Measurement

15. Model, measure, and use the names of all common units in the U.S. and metric systems (M-1-M)
16. Apply the concepts of elapsed time in real-life situations and calculate equivalent times across time zones in real-life problems (M-1-M) (M-6-M)
17. Distinguish among the processes of counting, calculating, and measuring and determine which is the most appropriate strategy for a given situation (M-2-M)
18. Estimate time, temperature, weight/mass, and length in familiar situations and explain the reasonableness of answers (M-2-M)
19. Compare the relative sizes of common units for time, temperature, weight, mass, and length in real-life situations (M-2-M) (M-4-M)
20. Identify appropriate tools and units with which to measure time, mass, weight, temperature, and length (M-3-M)
21. Measure angles to the nearest degree (M-3-M)
22. Compare and estimate measurements between the U.S. and metric systems in terms of common reference points (e.g., l vs. qt., m vs. yd.) (M-4-M)
23. Convert between units of measurement for length, weight, and time, in U.S. and metric, within the same system (M-5-M)

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Geometry

24. Use mathematical terms to classify and describe the properties of 2-dimensional shapes, including circles, triangles, and polygons (G-2-M)
25. Identify and use appropriate terminology for transformations (e.g., *translation as slide*, *reflection as flip*, and *rotation as turn*) (G-3-M)
26. Identify shapes that have rotational symmetry (G-3-M)
27. Identify and plot points on a coordinate grid in the first quadrant (G-6-M)

Data Analysis, Probability, and Discrete Math

28. Use various types of charts and graphs, including double bar graphs, to organize, display, and interpret data and discuss patterns verbally and in writing (D-1-M) (D-2-M) (P-3-M) (A-4-M)
29. Compare and contrast different scales and labels for bar and line graphs (D-1-M)
30. Organize and display data using spreadsheets, with technology (D-1-M)
31. Compare and contrast survey data from two groups relative to the same question (D-2-M)
32. Represent probabilities as common fractions and recognize that probabilities fall between 0 and 1, inclusive (D-5-M)

Patterns, Relations, and Functions

33. Fill in missing elements in sequences of designs, number patterns, positioned figures, and quantities of objects (P-1-M)