



# Essential Standards Extended Guide

## Grade 3 Mathematics

### GUIDING INFORMATION

In response to requests from schools and districts for guidance on essential standards, committees of educators from around Idaho collaborated in the summer of 2024 to categorize mathematics standards into four groups:

- **Essential standards** are explicitly taught, assessed multiple times, and receive targeted interventions for students who have not yet reached proficiency.
- **Supporting standards** are taught to reinforce essential standards and may or may not be formally assessed.
- **Additional standards** extend learning and are incorporated as time allows within course units, with assessment being optional.
- **Mathematical Big Ideas** are overarching mathematical concepts that are central to the learning of mathematics and link numerous mathematical understandings into a coherent whole. They are difficult to assess.

This guidance helps LEAs prioritize the most critical standards, recognizing that not all standards are of equal importance. This document serves as a resource—not a mandate—to assist local efforts. Importantly, this work did not remove or revise any of the adopted Idaho Content Standards and is intended to refocus time and effort.

The 2022 Idaho Content Standards for Mathematics list the standards for each grade level by domain and provide clarification statements and examples of individual standards. This *Essential Standards Extended Guide* provides examples of how teachers can group standards for mathematics instruction. Appendix A provides planning templates for using these instructional groupings to plan instructional calendars and units.

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## Instructional Grouping 1: Relationship between Multiplication and Division

### Mathematical Big Ideas:

- 3.OA.A. Represent and solve problems involving multiplication and division.
- 3.OA.B. Understand the properties of multiplication and the relationship between multiplication and division.
- 3.OA.C. Multiply and divide within 100.

#### Essential Standards

Standards to be explicitly taught, assessed more than once, and intervened upon.

*Teacher Note: Students use a progression of physical, visual, and symbolic representations to explain their reasoning strategies. Relate students' physical and visual representations to verbalized and written equations.*

3.OA.A.3. Use multiplication and division within 100 to solve word problems involving equal groups, arrays, and measurements by using visual and symbolic representations, with a symbol for an unknown number.

#### Supporting Standards

Standards that support the learning of essential standards and may or may not be formally assessed.

3.OA.A.1. Interpret a product of whole numbers as a grouping of sets, e.g.,  $5 \times 7$  as five groups of seven objects each.

3.OA.A.2. Interpret a quotient of whole numbers as equal sharing, e.g.,  $56 \div 8$  as the number in each share when 56 objects are split into 8 equal shares, or as the number of shares when 56 objects are split into equal shares of 8 objects each.

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

3.OA.B.5. Apply the properties of operations to multiply and divide.

3.OA.B.6. Understand division as determining an unknown factor in a multiplication problem.

3.OA.C.7. Demonstrate fluency for multiplication within 100.

3.OA.C.7a. Demonstrate understanding of strategies that make use of the relationship between multiplication and division or properties of operations.

3.OA.C.7b. Know from memory all products of two single-digit numbers and related division facts.

## Instructional Grouping 2: Arithmetic Patterns

### Mathematical Big Ideas:

- **3.OA.D. Solve problems involving the four operations, and identify and explain patterns in arithmetic.**
- **3.NBT.A. Use place value understanding and properties of operations to perform multi-digit arithmetic.**

#### Essential Standards

Standards to be explicitly taught, assessed more than once, and intervened upon.

3.OA.D.8. Solve two-step word problems involving whole numbers using the four operations.

3.NBT.A.2. Fluently add and subtract whole numbers within 1,000 using understanding of place value and properties of operations.

#### Supporting Standards

Standards that support the learning of essential standards and may or may not be formally assessed.

3.OA.D.8a. Represent these problems using equations with a letter standing for the unknown quantity.

3.OA.D.8b. Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.

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

3.NBT.A.1. Round a whole number to the tens or hundreds place, using place value understanding or a visual representation.

3.NBT.A.3. Multiply one-digit whole numbers by multiples of ten in the range 10– 90 using understanding of place value and properties of operations.

## Instructional Grouping 3: Comparing Fractions

### Mathematical Big Ideas:

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

<b>Essential Standards</b>
Standards to be explicitly taught, assessed more than once, and intervened upon.
3.NF.A.3. Explain equivalence of fractions and compare fractions by reasoning about their size, in limited cases.

<b>Supporting Standards</b>
Standards that support the learning of essential standards and may or may not be formally assessed.
3.NF.A.1. Understand a fraction $\frac{1}{b}$ as the quantity formed by one part when a whole (a single unit) is partitioned into $b$ equal parts; understand $\frac{a}{b}$ as the quantity formed by $a$ parts of size $\frac{1}{b}$ .
3.NF.A.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
3.NF.A.2a. Represent a unit fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into $b$ equal parts. Recognize that each part has size $\frac{1}{b}$ and that the fraction $\frac{1}{b}$ is located $\frac{1}{b}$ of a whole unit from 0 on the number line.
3.NF.A.2b. Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a length $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.
3.NF.A.3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
3.NF.A.3b. Recognize and generate simple equivalent fractions, and explain why the fractions are equivalent, such as by using a visual fraction model.
3.NF.A.3c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
3.NF.A.3d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize the comparisons are valid only when the two fractions refer to the same whole. Record the results of the comparisons with the symbols $>$ , $=$ , and $<$ , and justify the conclusion using visual representations and/or verbal reasoning.

## Instructional Grouping 5: Measurement and Data

### Mathematical Big Ideas:

- **△ 3.MD.B. Represent and interpret data.**
- **□ 3.MD.A. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.**

#### Essential Standards

Standards to be explicitly taught, assessed more than once, and intervened upon.

*Teacher Note: This standard can be integrated into other instructional groupings and into other content areas to help students see and represent their world in mathematical ways.*

3.MD.B.3. Draw a scaled picture graph and 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.

#### Supporting Standards

Standards that support the learning of essential standards and may or may not be formally assessed.

3.MD.A.1. Tell and write time to the nearest minute within the same hour and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes.

3.MD.A.2. Identify and use the appropriate tools and units of measurement, both customary and metric, to solve one-step word problems using the four operations involving weight, mass, liquid volume, and capacity (within the same system and unit).

*Teacher note: This standard builds conceptual understanding of number lines, which is an important representational tool for operations and magnitude of fractions. Integrating measuring length into Instructional Grouping 1, 2 and 3 will help build both conceptual understanding and spatial visualization of addition and subtraction.*

3.MD.B.4. Generate measurement data by measuring lengths of objects using rulers marked with halves and fourths of an inch. Record and show the data by making a line plot (dot plot), where the horizontal scale is marked off in appropriate units— whole numbers, halves, or fourths.

## Instructional Grouping 6: Geometric Measurement

### Mathematical Big Ideas:

- □ **3.MD.C. Geometric measurement: Understand concepts of area and relate area to multiplication and to addition.**
- □ **3.MD.D Geometric measurement: Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.**
- △ **3.G.A. Reason with shapes and their attributes.**

### Essential Standards

Standards to be explicitly taught, assessed more than once, and intervened upon.

*Teacher Note: Integrating this standard into Instructional Grouping 1 builds conceptual understanding and spatial visualization of multiplication and division.*

3.MD.C.7b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning.

*Teacher Note: Integrating this standard into Instructional Grouping 2 builds conceptual understanding and spatial visualization of arithmetic operations.*

3.MD.D.8. 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.

### Supporting Standards

Standards that support the learning of essential standards and may or may not be formally assessed.

3.MD.C.5. Recognize area as an attribute of plane figures and understand concepts of area measurement.

3.MD.C.5a. A square with side length one unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.

3.MD.C.5b. A plane figure which can be covered without gaps or overlaps by  $n$  unit squares is said to have an area of  $n$  square units.

3.MD.C.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and nonstandard units).

3.MD.C.7. Relate area to the operations of multiplication and addition.

3.MD.C.7a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

3.MD.C.7c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths  $a$  and  $b + c$  is the sum of  $a \times b$  and  $a \times c$ . Use area models to represent the distributive property in mathematical reasoning.

### Supporting Standards

Standards that support the learning of essential standards and may or may not be formally assessed.

3.MD.C.7d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.

3.G.A.1. Understand that shapes in different categories may share attributes, and that the shared attributes can define a larger category. Compare and classify shapes by their sides and angles. Recognize rhombi, rectangles, squares, and trapezoids as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

*Teacher Note: Partitioning shapes builds conceptual understandings that are transferred to multiplication, division and fractions.*

3.G.A.2. Partition two-dimensional figures into equal areas, and express the area of each part as a unit fraction of the whole.

## Appendix A: Planning Templates

### Instructional Calendar Template

Use this template to sequence your instructional units onto a Year At-A-Glance calendar. This template can be adapted to show semesters or trimesters.

Month	Instructional Grouping
August	
September	
October	
November	
December	
January	
February	
March	
April	
May	



## Unit Planning Template

Use this template to plan and collaborate around an instructional grouping. This template facilitates identifying curricular and assessment resources to teach and assess the content in one instructional grouping.

Instructional Grouping #:	Unit Topic:
<b>Time Allotment:</b> <i>How many instructional days do you plan to spend on this topic?</i>	
<b>Learning Activities:</b> <i>What common lessons will we teach from our curricular resources?</i>	
<b>Common Assessments:</b> <i>What common assessments will we give?</i> <i>Consider IAB and FIAB assessments in the ISAT portal if appropriate and common teacher created assessments.</i>	
<b>Team Collaboration Notes:</b> <i>What did we learn about teaching this topic from analyzing our student work samples?</i> <i>What intervention do we need to do on essential standards? Who is ready for learning additional standards?</i>	