

Achievement Level Descriptors (ALDs)

Mathematics

Grades 3-5

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The achievement level descriptors describe what a typical student scoring at each achievement level can do. A student who scores at a level would be expected to also be able to demonstrate the skills described in previous levels. A student would not necessarily demonstrate all the skills listed at a particular achievement level on a particular test in order to score at that level.

## Achievement Level Definitions

**Far Below Proficient** - Student may partially meet the standards but has significant gaps in knowledge and skills of current grade-level content.

**Below Proficient** - Student partially meets the standards and may have gaps in knowledge and skills but is capable of most grade-level content.

**Proficient** - Student meets the standards at a proficient level, demonstrating knowledge and skills of current grade-level content.

**Advanced** - Student meets the standards at an advanced level, demonstrating knowledge and skills of complex grade-level content.

## Grade 3

### Operations and Algebraic Thinking

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 3.OA.1 – 3.OA.9 | A student at this level solves one-step word problems using addition and subtraction.A student at this level calculates sums and differences of whole numbers.A student at this level finds unknown terms in addition and subtraction equations. | A student at this level solves one-step problems using all four operations.A student at this level calculates whole-number products and quotients.A student at this level finds an unknown in a multiplication equation.A student at this level extends the terms of an arithmetic pattern. | A student at this level solves two-step word problems, using any of the four operations.A student at this level applies a property of operations to multiply and divide.A student at this level calculates and interprets whole-number products and quotients up to 100.A student at this level fluently multiplies and divides up to 100.A student at this level finds unknowns in multiplication and division equations involving three whole numbers.A student at this level identifies rules for arithmetic patterns. | A student at this level solves multistep word problems, using all four operations.A student at this level applies multiple properties of operations to multiply and divide.A student at this level calculates, interprets, and creates real-world problems involving whole-number products and quotients.A student at this level explains rules for arithmetic patterns. |

### Number and Operations in Based 10

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 3.NBT.1 – 3.NBT.3 | A student at this level identifies the place values of digits in the ones, tens, and hundreds places.A student at this level adds or subtracts whole numbers up to 100. | A student at this level identifies the place values of digits in the ones, tens, hundreds, and thousands places.A student at this level multiplies single-digit numbers.A student at this level adds and subtracts whole numbers up to 100. | A student at this level rounds whole numbers to the nearest 10 or 100.A student at this level multiplies one-digit whole numbers by multiples of 10.A student at this level adds and subtracts whole numbers fluently up to 1,000 by applying a variety of strategies. | A student at this level rounds three-digit whole numbers to the nearest 10 and rounds four-digit whole numbers to the nearest 100.A student at this level multiplies one-digit whole numbers by multiples of 100.A student at this level evaluates the most efficient strategies for solving a given addition/subtraction equation.A student at this level identifies errors in a solution strategy for a given addition/subtraction equation. |

### Number and Operations – Fractions

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 3.NF.1 – 3.NF.3 | A student at this level identifies fractional parts of one whole and recognizes unit fractions on a visual model. | A student at this level understands a unit fraction as an equal part of one whole and represents unit fractions on a number line.A student at this level compares fractions with the same denominator. | A student at this level understands fractions in terms of equal parts of one whole and intervals on a number line.A student at this level recognizes fractional equivalence supported by visual models.A student at this level compares fractions with the same numerator or the same denominator, using <, >, or =. | A student at this level understands fractions, fractional equivalence, comparisons, unit fractions, and addition and subtraction of fractions in terms of equal partitions of one or more wholes and intervals on a number line.A student at this level recognizes mixed numbers as additive between a fraction and a whole number. |

### Measurement and Data

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 3.MD.1 – 3.MD.10 | A student at this level tells and writes time to the nearest five minutes.A student at this level recognizes standard and metric units of volume, such as cups and liters.A student at this level interprets a unit-scaled pictograph graph or bar graph to represent data.A student at this level recognizes the side lengths of polygons. | A student at this level tells and writes time to the minute.A student at this level measures length to the nearest whole unit.A student at this level draws and interprets unit-scaled pictographs, bar graphs, and line plots.A student at this level finds perimeters given the side lengths of polygons.  | A student at this level tells and writes time to the nearest minute and measures time intervals in minutes.A student at this level measures and estimates length to one-quarter of a unit.A student at this level measures liquid volume and mass.A student at this level draws and interprets scaled pictographs, bar graphs, and line plots.A student at this level solves problems related to perimeter (polygons), area (rectangles), and their relationships. | A student at this level solves time interval problems involving hours and minutes.A student at this level solves multistep problems involving interpreting scaled pictographs, bar graphs, and line plots.A student at this level recognizes patterns between area and perimeter. |

### Geometry

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 3.G.1 – 3.G.2 | A student at this level partitions symmetrical shapes into halves.A student at this level recognizes quadrilaterals. | A student at this level identifies the fractions associated with shapes partitioned into equal areas.A student at this level recognizes that shapes fit into different categories. | A student at this level partitions shapes into equal areas and relates the areas to unit fractions.A student at this level recognizes that shapes fit into different categories and creates examples and non-examples. | A student at this level partitions shapes into equal areas in a variety of ways and relates the areas to fractional parts. |

## Grade 4

### Operations and Algebraic Thinking

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 4.OA.1 – 4.OA.6 | A student at this level solves single-step word problems by adding, subtracting, multiplying, and dividing.A student at this level finds all factor pairs to 24. | A student at this level solves single-step word problems by multiplying and dividing with whole-number factors, products, dividends, divisors, and quotients.A student at this level recognizes multiples of a given single-digit number.A student at this level finds all factor pairs to 48.A student at this level identifies the next term in a number or shape pattern. | A student at this level interprets multiplication equations as comparisons and uses them to solve multistep word problems, using the four operations.A student at this level explains the correlations/differences between multiples and factors and identifies multiples of a given single-digit number.A student at this level finds factor pairs of whole numbers up to 100.A student at this level generates number and shape patterns that follow a given rule, including rules expressed algebraically.A student at this level determines whether a whole number up to 100 is prime or composite.A student at this level interprets remainders in context. | A student at this level interprets multiplication equations as comparisons and uses them to solve multistep word problems, using the four operations and an unknown quantity as a variable.A student at this level finds prime factors of a given number.A student at this level generates the rules for given number and shape patterns, including rules expressed algebraically.A student at this level explains the difference between prime and composite numbers. |

### Number and Operations in Base Ten

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 4.NBT.1 – 4.NBT.6 | A student at this level adds and subtracts with up to three-digit addends, subtrahends, and minuends.A student as this level uses place value to read and write numbers to 1,000 in standard form. | A student at this level adds and subtracts multi-digit whole numbers.A student at this level finds whole-number quotients to two digits, using a whole-number dividend and divisor.A student at this level multiplies a two-digit whole number by a one-digit whole number.A student at this level reads and writes numbers in standard form.A student at this level uses place value to round numbers to the greatest place value.A student at this level recognizes whole-number patterns in base ten. | A student at this level adds and subtracts fluently by applying a variety of strategies and verifies the reasonableness of results.A student at this level finds whole-number quotients to four digits, using a four-digit dividend and one-digit divisor.A student at this level multiplies a three- or four-digit whole number by a one-digit whole number.A student at this level multiplies two two-digit whole numbers.A student at this level represents place values by left and right positions as multiples or quotients of 10, 100, 1,000, or 10,000.A student at this level reads and writes multi-digit numbers in standard form and expanded notation.A student at this level estimates and rounds numbers to specified place values.A student at this level illustrates and explains calculations when multiplying and dividing. | A student at this level identifies efficient strategies for adding or subtracting multi-digit whole numbers.A student at this level identifies and corrects errors in a given strategy for adding or subtracting multi-digit whole numbers.A student at this level uses place value to explain and illustrate multiplication algorithms. |

### Number and Operations – Fractions

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 4.NF.1 – 4.NF.7 | A student at this level compares fractions with like denominators, using symbols.A student at this level identifies tenths, both as fractions and as decimals. | A student at this level compares fractions with like numerators or like denominators, using symbols.A student at this level identifies tenths and hundredths, both as fractions and as decimals, using visual models.A student at this level adds or subtracts fractions with like denominators.A student at this level solves word problems with addition or subtraction of fractions with like denominators. | A student at this level understands and uses fraction equivalence.A student at this level compares fractions symbolically, using <, >, and =.A student at this level expresses and represents equivalence between fractions with denominators of 10 and 100.A student at this level identifies unit fractions that compose fractions with numerators > 1.A student at this level adds and subtracts fractions with like denominators.A student at this level solves two-step word problems with addition and subtraction of fractions with like denominators.A student at this level multiplies fractions by whole numbers.A student at this level solves word problems with multiplication of fractions by whole numbers.A student at this level finds equivalent fractions, using tenths and hundredths.A student at this level compares and orders decimals to hundredths. | A student at this level understands, explains, and represents fraction equivalence.A student at this level orders more than two fractions.A student at this level represents and decomposes fractions as a sum of unit fractions.A student at this level adds and subtracts fractions and mixed numbers with like denominators.A student at this level solves multistep word problems with addition and subtraction of fractions with like denominators.A student at this level represents and explains multiplication of fractions by whole numbers.A student at this level solves multistep word problems with multiplication of fractions by whole numbers.A student at this level orders three or more decimals to hundredths from least to greatest or greatest to least. |

### Measurement and Data

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 4.MD.1 – 4.MD.9 | A student at this level knows that converting a measurement from larger units to smaller units increases the number of units.A student at this level orders angles by size. | A student at this level converts units of measurement, using multiplication.A student at this level identifies data from line plots in fractional units.A student at this level solves addition and subtraction problems involving angles.A student at this level finds the areas and perimeters of rectangles. | A student at this level solves one-step problems in measurement conversion, using the four operations with distance, time, liquid volume, mass, and money.A student at this level draws line plots to represent data in fractions of a unit (½, ¼, ⅛).A student at this level solves two-step problems involving interpretation of data on a line plot.A student at this level measures and draws angles and recognizes that angles are fractions of a circle that are measured in degrees.A student at this level solves addition and subtraction word problems involving angles.A student at this level finds the areas and perimeters of rectangles in real-world and mathematical problems. | A student at this level solves multistep problems in measurement conversion, using the four operations.A student at this level draws line plots in fractions of a unit to represent data.A student at this level solves multistep problems involving interpretation of data on a line plot.A student at this level solves multistep addition and subtraction word problems involving angles. |

### Geometry

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 4.G.1 – 4.G.3 | A student at this level draws points and line segments.A student at this level recognizes symmetrical and nonsymmetrical figures. | A student at this level draws points, lines, and angles and identifies them in two-dimensional figures.A student at this level identifies a line of symmetry. | A student at this level draws points, lines, line segments, rays, angles, and parallel and perpendicular lines and identifies them in two-dimensional figures.A student at this level identifies right triangles.A student at this level identifies and draws lines of symmetry in two-dimensional figures.A student at this level classifies quadrilaterals based on the presence or absence of parallel or perpendicular lines. | A student at this level draws, defines, and interprets points, lines, line segments, rays, angles, and parallel and perpendicular lines and represents them in two-dimensional figures.A student at this level identifies and generalizes right triangles.A student at this level interprets symmetry as a characteristic of two- dimensional figures.A student at this level provides examples of two- dimensional figures, given specific characteristics. |

## Grade 5

### Operations and Algebraic Thinking

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 5.OA.1 – 5.OA.3 | A student at this level evaluates one-step numerical expressions.A student at this level identifies the next term in a pattern.A student at this level identifies the coordinate plane.  | A student at this level writes simple numerical expressions and applies a set of parentheses appropriately.A student at this level identifies or generates a rule for a given pattern.A student at this level identifies ordered pairs on a coordinate plane. | A student at this level writes, evaluates, and interprets numerical expressions using parentheses.A student at this level generates two numerical patterns from two rules, identifies the corresponding terms, and explains the corresponding relationships.A student at this level translates numerical patterns into ordered pairs and plots the points on a coordinate plane. | A student at this level writes, evaluates, and interprets numerical expressions with two or more sets of grouping symbols.A student at this level generates two complex numerical patterns from two rules, identifies the corresponding terms, and explains the corresponding relationships.A student at this level translates numerical patterns into ordered pairs, plots coordinate pairs on a coordinate plane, and explains data displayed on a coordinate plane. |

### Number and Operations in Base Ten

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 5.NBT.1 – 5.NBT.7 | A student at this level identifies the place value name for a given digit or the digit for a given place value in a decimal to the tenths.A student at this level adds and subtracts decimals to the hundredths. | A student at this level identifies the place value name for a given digit or the digit for a given place value in a decimal to the thousandths.A student at this level reads, writes, and symbolically compares (using <, >, =) decimals to the hundredths.A student at this level multiplies multi-digit whole numbers.A student at this level multiplies decimals to the hundredths.A student at this level multiplies and divides by powers of ten. | A student at this level recognizes that the value of a digit differs by a factor of 10 compared with the same digit one place to the left or right.A student at this level reads, writes, and symbolically compares (using <, >, =) decimals to the thousandths in standard form.A student at this level uses place value to round decimals to the thousandths.A student at this level multiplies multi-digit whole numbers and divides multi-digit whole numbers with dividends up to four digits and divisors up to two digits.A student at this level multiplies and divides decimals to the hundredths.A student at this level uses whole-number exponents to denote powers of ten. | A student at this level reads, writes, and compares (using <, >, =) decimals to the thousandths, including in expanded form.A student at this level compares three or more decimals to the thousandths.A student at this level uses place value to round decimals to any place.A student at this level fluently multiplies and divides multi-digit numbers.A student at this level fluently adds, subtracts, multiplies, and divides decimals to the thousandths. |

### Number and Operations – Fractions

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 5.NF.1 – 5.NF.7 | A student at this level uses models to add and subtract unit fractions with unlike denominators. | A student at this level uses models to add and subtract fractions with unlike denominators.A student at this level solves single-step word problems with addition and subtraction of fractions with unlike denominators.A student at this level fluently multiplies a fraction by a whole number. | A student at this level adds and subtracts fractions and mixed numbers with unlike denominators.A student at this level solves word problems with addition and subtraction of fractions with unlike denominators.A student at this level recognizes a fraction as a numerator divided by a denominator.A student at this level solves word problems involving division of whole numbers that leads to answers in the form of fractions or mixed numbers.A student at this level fluently multiplies fractions by fractions and fractions by whole numbers.A student at this level solves problems with areas of rectangles with fractional side lengths.A student at this level interprets multiplication to modify the relative size of numbers with respect to fractions > 1 and < 1. | A student at this level solves multistep word problems with addition and subtraction of fractions.A student at this level recognizes and interprets a fraction as a numerator divided by a denominator.A student at this level solves multistep word problems involving division of whole numbers that leads to answers in the form of fractions or mixed numbers.A student at this level solves multistep problems with areas of rectangles with fractional side lengths.A student at this level understands, interprets, and represents multiplication to modify the relative size of numbers with respect to fractions > 1 and < 1.A student at this level solves multistep problems involving multiplication of fractions and mixed numbers.A student at this level represents and interprets division of fractions by dividing unit fractions by whole numbers and dividing whole numbers by unit fractions.A student at this level solves problems involving division of unit fractions and whole numbers, without the use of models. |

### Measurement and Data

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 5.MD.1 – 4.MD.7 | A student at this level calculates one-step conversions of length.A student at this level identifies measures of volume.A student at this level finds volumes of right rectangular prisms by counting unit cubes.A student at this level identifies perimeter and area as attributes of two-dimensional objects. | A student at this level calculates one-step conversions of length and mass within a given system.A student at this level creates line plots consisting of unit fractions.A student at this level identifies volume as an attribute of three-dimensional objects. | A student at this level calculates one-step conversions of time, length, volume, and mass within a given system.A student at this level creates and interprets line plots consisting of unit fractions.A student at this level identifies and represents volume as an attribute of three-dimensional objects.A student at this level finds volumes of rectangular prisms and recognizes volume relating to the multiplication of unit cubes along sides.A student at this level distinguishes between perimeter, area, and volume. | A student at this level calculates multistep conversions of time, length, volume, and mass.A student at this level creates line plots and interprets multiple characteristics of line plots.A student at this level represents and analyzes volume as an attribute of three-dimensional objects.A student at this level identifies the appropriate application of perimeter, area, and volume. |

### Geometry

| Alaska Standard | **Far Below Proficient** | **Below Proficient** | **Proficient** | **Advanced** |
| --- | --- | --- | --- | --- |
| 5.G.1 – 5.G.3 | A student at this level plots points in Quadrant I on the coordinate plane.A student at this level identifies attributes of two- dimensional figures. | A student at this level identifies ordered pairs in Quadrant I on the coordinate plane.A student at this level classifies two-dimensional figures according to their attributes. | A student at this level uses *x*/*y*-coordinate systems to graph and identify points in Quadrant I on the coordinate plane.A student at this level recognizes two-dimensional figures by hierarchy. | A student at this level uses and applies *x*/*y*-coordinate systems and interprets and graphs real-world contexts and problems in Quadrant I on the coordinate plane.A student at this level classifies two-dimensional figures by hierarchy. |