**Instructional Focus Areas**

**Grades K-3**

|  |  |  |
| --- | --- | --- |
| **Kindergarten** | **Grade 1** | **Grade 2** |
| Representing, relating, and operating on whole numbers, initially with sets of objects. | Developing understanding of addition, subtraction, and strategies for addition and subtraction. | Extending understanding of base ten notations. |
| Describing shapes and space. | Developing understanding of whole number relationships and place value, including grouping in tens and ones. | Building fluency with addition and subtraction. |
|  | Developing understanding of linear measurement and measuring lengths as iterating length units. | Using standard units of measure. |
|  | Reasoning about attributes of, and composing and decomposing geometric shapes. | Describing and analyzing shapes. |

Expanded explanations can be found on pages 110-111 of the *Alaska English/Language Arts and Mathematics Standards*.

**Instructional Focus Areas**

**Grades 3-5**

|  |  |  |
| --- | --- | --- |
| **Grade 3** | **Grade 4** | **Grade 5** |
| Developing understanding of multiplication and division strategies for multiplication and division within 100. | Developing understanding and fluency with multi-digit multiplication. | Developing fluency with addition and subtraction of fractions, and developing and understanding of the multiplication of fractions and of division of fractions in limited cases. |
| Developing understanding of fractions, especially unit fractions (fractions with numerator 1). | Developing and understanding of fraction equivalence, addition and subtraction of fractions with like denominators. | Extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations. |
| Developing understanding of the structure of rectangular arrays and of area. | Understanding that geometric figures can be analyzed and classified based on their properties. | Developing understanding of volume. |
| Describing and analyzing two-dimensional shapes. |  |  |

Expanded explanations can be found on pages 121-122 of the *Alaska English/Language Arts and Mathematics Standards*.

**Instructional Focus**

**Grades 6-8**

|  |  |  |
| --- | --- | --- |
| **Grade 6** | **Grade 7** | **Grade 8** |
| Connecting ratio and rate to whole number multiplication and division, and using concepts of ratio and rate to solve problems. | Developing understanding of and applying proportional relationships. | Formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations. |
| Completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers. | Developing understanding of operations with rational numbers and working with expressions and linear equations. | Grasping the concept of a function and using functions to describe quantitative relationships. |
| Writing, interpreting, and using expressions and equations. | Solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area and volume. | Analyzing two-and three- dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem. |
| Developing understanding of statistical thinking. | Drawing inferences about populations based on samples. |  |

Expanded explanations can be found on pages 138-140 of the *Alaska English/Language Arts and Mathematics Standards*.

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Kindergarten**, instructional time should focus on *two* areas**.** | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now?(Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Representing, relating, and operating on whole numbers, initially with sets of objects | * Know number names and the count sequence.
* Count to tell the number of objects.
* Compare numbers.
* Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
* Identify and continue patterns.
* Work with numbers 11-19 to gain foundations for place value
* Describe and compare measureable attributes.
* Classify objects and count the number of objects in each category.
* Work with time and money.
* Identify and describe shapes.
* Analyze, compare, create, an compose shapes.
 |  |
| Describing shapes and space. |

Expanded explanations of Instruction Focus can be found on pages 110-111 of the *Alaska English/Language Arts and Mathematics Standards.*

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Grade 1**, instructional time should focus on *four* areas. | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Developing understanding of addition, subtraction, and strategies for addition and subtraction. | * Know ordinal names and counting flexibility.
* Count to tell the number of objects.
* Compare numbers.
* Represent and solve problems involving addition and subtraction.
* Understand and apply properties of operations and the relationship between addition and subtraction.
* Add and subtract using numbers up to 20.
* Work with addition and subtraction equations.
* Identify and continue patterns.
* Extend the counting sequence.
* Understand place value.
* Use place value understanding and properties of operations to add and subtract.
* Measure lengths indirectly and by iterating length units.
* Work with time and money.
* Represent and interpret data.
* Reason with shapes and their attributes.
 |  |
| Developing understanding of whole number relationships and place value, including grouping in tens and ones. |
| Developing understanding of linear measurement and measuring lengths as iterating length units. |
| Reasoning about attributes of, and composing and decomposing geometric shapes. |

Expanded explanations of Instruction Focus can be found on pages 110-111 of the *Alaska English/Language Arts and Mathematics Standards.*

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Grade 2**, instructional time should focus on *four* areas. | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Extending understanding of base ten notations. | * Represent and solve problems involving addition and subtraction.
* Add and subtract using numbers up to 20.
* Work with equal groups of objects to gain foundations for multiplication.
* Identify and continue patterns.
* Understand place value.
* Use place value understanding and properties of operations toad and subtract.
* Measure and estimate lengths in standard units.
* Relate addition and subtraction to length.
* Work with time and money.
* Represent and interpret data.
* Reason with shapes and their attributes.
 |  |
| Building fluency with addition and subtraction. |
| Using standard units of measure. |
| Describing and analyzing shapes. |

Expanded explanations of Instruction Focus can be found on pages 110-111 of the *Alaska English/Language Arts and Mathematics Standards.*

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Grade 3**, instructional time should focus on *four* areas. | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Developing understanding of multiplication and division strategies for multiplication and division within 100. | * Represent and solve problems involving multiplication and division.
* Understand properties of multiplication and the relationship between multiplication and division.
* Multiply and divide up to 100.
* Solve problems involving the four operations, and identify and explain patterns in arithmetic.
* Use place value understanding and properties of operations to perform multi-digit arithmetic.
* Develop understanding of fractions as numbers.
* Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
* Represent and interpret data.
* Understand concepts of area and relate area to multiplication and division.
* Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
* Reason with shapes and their attributes.
 |  |
| Developing understanding of fractions, especially unit fractions (fractions with numerator 1). |
| Developing understanding of the structure of rectangular arrays and of area. |
| Describing and analyzing two-dimensional shapes. |

Expanded explanations of Instruction Focus can be found on pages 121-122 of the *Alaska English/Language Arts and Mathematics Standards.*

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Grade 4**, instructional time should focus on *three* areas. | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Developing understanding and fluency with multi-digit multiplication. | * Use the four operations with whole numbers to solve problems.
* Gain familiarity with factors and multiples.
* Generate and analyze patterns.
* Generalize place value understanding for multi-digit whole numbers.
* Use place value understanding and properties of operations to perform multi-digit arithmetic.
* Extend understanding of fraction equivalence and ordering.
* Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
* Understand decimal notation for fractions, and compare decimal fractions.
* Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit, and involving time.
* Represent and interpret data.
* Understand concepts of angle and measure angles.
* Draw and identify lines and angles, and classify shapes by properties of their lines and angels.
 |  |
| Developing and understanding of fraction equivalence, addition and subtraction of fractions with like denominators. |
| Understanding that geometric figures can be analyzed and classified based on their properties. |

Expanded explanations of Instruction Focus can be found on pages 121-122 of the *Alaska English/Language Arts and Mathematics Standards.*

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Grade 5**, instructional time should focus on *three* areas. | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Developing fluency with addition and subtraction of fractions, and developing and understanding of the multiplication of fractions and of division of fractions in limited cases. | * Write and interpret numerical expressions.
* Analyze patterns and relationships.
* Understand the place value system.
* Perform operations with multi-digit whole numbers and with decimals to hundredths.
* Use equivalent fractions as a strategy to add and subtract fractions.
* Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
* Convert like measurement units within a given measurement system and solve problems involving time.
* Represent and interpret data.
* Understand concepts of volume and relate volume to multiplication and division.
* Graph points on the coordinate plane to solve real-world and mathematical problems.
* Classify two-dimensional (plane) figures into categories based on their properties.
 |  |
| Extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations. |
| Developing understanding of volume. |

Expanded explanations of Instruction Focus can be found on pages 121-122 of the *Alaska English/Language Arts and Mathematics Standards.*

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Grade 6**, instructional time should focus on *four* areas. | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Connecting ratio and rate to whole number multiplication and division, and using concepts of ratio and rate to solve problems. | * Understand ratio concepts and use ratio reasoning to solve problems.
* Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
* Compute fluently with multi-digit numbers and find common factors and multiples.
* Apply and extend previous understandings of numbers to the system of rational numbers.
* Apply and extend previous understandings of arithmetic to algebraic expressions.
* Reason about and solve one-variable equations and inequalities.
* Represent and analyze quantitative relationships between dependent and independent variables.
* Solve real-world and mathematical problems involving area, surface are, and volume.
* Develop understanding of statistical variability.
* Summarize and describe distribution.
 |  |
| Completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers. |
| Writing, interpreting, and using expressions and equations. |
| Developing understanding of statistical thinking. |

Expanded explanations of Instruction Focus can be found on pages 138-140 of the *Alaska English/Language Arts and Mathematics Standards.*

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Grade 7**, instructional time should focus on *four* areas. | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Developing understanding of and applying proportional relationships. | * Analyze proportional relationships and use them to solve real-world problems.
* Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
* Use properties of operations to generate equivalent expressions.
* Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
* Draw, construct, and describe geometrical figures and describe the relationships between them.
* Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
* Use random sampling to draw inferences about a population.
* Draw informal comparative inferences about two populations.
* Investigate chance processes and develop, use, and evaluate probability models.
 |  |
| Developing understanding of operations with rational numbers and working with expressions and linear equations. |
| Solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area and volume. |
| Drawing inferences about populations based on samples. |

Expanded explanations of Instruction Focus can be found on pages 138-140 of the *Alaska English/Language Arts and Mathematics Standards.*

**Instructional Focus and Grade Level Clusters**

**Worksheet**

|  |  |  |
| --- | --- | --- |
| In **Grade 8**, instructional time should focus on *three* areas. | **Grade Level Clusters** | How does this content compare to the course you currently teach? In general, how much alike or different is this from the course you teach now? (Green: similar, Yellow: could be easily added, Red: new and I would need support) |
| Formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations.  | * Know that there are numbers that are not rational, and approximate them by rational numbers.
* Work with radicals and integer exponents.
* Understand the connections between proportional relationships, lines, and linear equations.
* Analyze and solve linear equations and pairs of simultaneous linear equations.
* Understand congruence and similarity using physical models, transparencies, or geometry software.
* Understand and apply the Pythagorean Theorem.
* Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.
* Investigate patterns of association in bivariate data.
* Define, evaluate and compare functions.
* Use functions to model relationships between quantities.
 |  |
| Grasping the concept of a function and using functions to describe quantitative relationships. |
| Analyzing two-and three- dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem. |

Expanded explanations of Instruction Focus can be found on pages 138-140 of the *Alaska English/Language Arts and Mathematics Standards.*