

SAVVAS



SuccessMaker®

Alaska
State Standards
Alignments for Mathematics

Providing rigorous mathematics intervention
for K-8 learners with unparalleled precision

AK Standard	AK Standard Text	Item Description	Item ID
K.CC.1	Count to 100 by ones and by tens.	Find a missing number in a sequence, counting by 10's (10 to 100).	smma_lo_00981
		R: Identify a written number from a spoken number (two-digit).	smma_lo_00977
K.CC.2	Count forward beginning from a given number within the known sequence.	Enter the missing date on a calendar.	smma_lo_00700
		Find the next number in a sequence, counting by 1's (1 to 5).	smma_lo_00940
		Find the number that comes before a given number, counting by 1's (1 to 9).	smma_lo_00949
		Order four numbers from least to greatest (1 to 9).	smma_lo_00950
		Find a missing number in a sequence, counting by 1's (1 to 20).	smma_lo_00951
		Find a missing number in a sequence, counting by 1's (1 to 9).	smma_lo_00960
		Find a missing number in a sequence, counting by 1's (10 to 20).	smma_lo_00970
		Find a missing number in a sequence, counting by 1's (11 to 50).	smma_lo_00982
		Find a missing number in a sequence, counting by 1's (51 to 99).	smma_lo_00983
		K.CC.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0 - 20 (with 0 representing a count of no objects).
Match a digit to a set with that number of objects (0 to 5).	smma_lo_00934		
Enter the number shown (1 to 9).	smma_lo_00942		
Identify the number of objects for a word name. (1 to 9 objects).	smma_lo_00964		
Identify a number, model, or word with the same value (1 to 9).	smma_lo_00965		
R: Enter the number shown (0 to 4).	smma_lo_00001		
R: Enter the number shown (5 to 9).	smma_lo_00002		
R: Identify a number from a spoken number (1 to 5).	smma_lo_00937		
R: Identify a number from a spoken number (6 to 9).	smma_lo_00944		
K.CC.4a	When counting objects, say the number names in standard order, pairing each object with one and only one number name and each number name with one and only one object.	Find the next number in a sequence, counting by 1's (1 to 9).	smma_lo_00948
		R: Match objects to show a one-to-one correspondence (2 to 5 objects).	smma_lo_00921
K.CC.4b	Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	Find the next number in a sequence, counting by 1's (1 to 5).	smma_lo_00939
		Count objects by pairing each object with one number 1 to 10; determine how many objects there are.	smma_lo_02092
K.CC.4c	Understand that each successive number name refers to a quantity that is one larger.	Count objects by pairing each object with one number 1 to 10; determine how many objects there are when 1 more is added.	smma_lo_02093

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
K.CC.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	Count two sets of objects to find the total (sums 2 to 4).	smma_lo_00003
		Count objects arranged in a row (1-5 objects).	smma_lo_00933
		Count objects not arranged in a row (1 to 5 objects).	smma_lo_00935
		Count specific objects within a larger set (1 to 6 objects).	smma_lo_00936
		Make a group with one to five objects.	smma_lo_00938
		Count objects not arranged in a row (6 to 9 objects).	smma_lo_00943
		Make a group with 6 to 9 objects.	smma_lo_00945
		Identify the group of objects that represent a number (1 to 5 objects).	smma_lo_00956
		Count objects arranged in a row (one to nine objects).	smma_lo_00957
		Count specific objects within a larger set (6 to 9 objects).	smma_lo_00958
		R: Move objects to show a one-to-one correspondence (1 to 5 objects).	smma_lo_00925
K.CC.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects)	Identify a set with the same number of objects as a given set (1 to 5 objects).	smma_lo_00922
		Identify a group with more objects than a given group (1 to 5 objects).	smma_lo_00923
		Identify a group with fewer objects than a given group (1 to 5 objects).	smma_lo_00924
		Make a set with the same number of objects as a given set (1 to 5 objects).	smma_lo_00926
		Make a group with one more object than a given group (one to five objects).	smma_lo_00927
		Make a group with one fewer object than a given group (1 to 5 objects).	smma_lo_00928
		Make a group with the same number of objects as a given group (6 to 9 objects).	smma_lo_00929
		Make a group with one more object than a given group (six to nine objects).	smma_lo_00930
		Make a group with one fewer object than a given group (6 to 9 objects).	smma_lo_00931
		Create a set with the same, more, or fewer number of objects than a given group (1 to 9 objects).	smma_lo_00953
		Create a set with one more object than a given set (1 to 9 objects).	smma_lo_00954
		Create a set with one fewer object than a given set (1 to 9 objects).	smma_lo_00955
		Identify the group with the greatest number of shapes of a given type (1 to 6).	smma_lo_00959
		K.CC.7	Compare and order two numbers between 1 and 10 presented as written numerals.
Identify two numbers within a range (1 to 9).	smma_lo_00963		
Identify whole numbers on a number line that satisfy the inequality (0 to 10).	smma_lo_01023		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
K.G.1	Describe objects in the environment using names of shapes and describe their relative positions.	Identify the object on the top, in the middle, or on the bottom.	smma_lo_00524
		Identify the object on the left or the right.	smma_lo_00525
		Identify the picture on the left or right.	smma_lo_00526
		Identify the object inside or outside a convex figure.	smma_lo_00532
		Identify the object that is the top, middle or bottom one.	smma_lo_00540
		Identify the object that is the top, middle, or bottom one.	smma_lo_00543
		Determine whether points are outside, inside, or on a geometric figure.	smma_lo_00552
		Identify the object modeled by a geometric figure.	smma_lo_00570
		Identify the object that is near or far from another object.	smma_lo_00574
		Identify objects inside or outside a convex figure.	smma_lo_00575
		Identify the object behind or in front of another object in a three-dimensional perspective.	smma_lo_00584
		Move an object to a specified location (upper left, upper right, lower left, or lower right corner).	smma_lo_00590
		R: Match pictures with shapes that are alike.	smma_lo_00517
		R: Match the face of a geometric solid to a plane figure.	smma_lo_00518
		R: Identify the rectangle with the same size and shape as a given rectangle.	smma_lo_00736
K.G.2	Name shapes regardless of their orientation or overall size.	Identify circles or squares by name.	smma_lo_00529
		Identify triangles or rectangles by name.	smma_lo_00530
		Identify a geometric figure (circle, triangle, rectangle, or square).	smma_lo_00531
		Identify circles or squares by name.	smma_lo_00544
		Identify triangles or rectangles by name.	smma_lo_00546
		Identify 3-, 4-, and 5-sided figures.	smma_lo_00550
		Identify a shape by two positive tests, e.g., red, circle.	smma_lo_00565
		Match a geometric figure to its name (circle, triangle, square, or rectangle).	smma_lo_00568
		Identify the figure that is not of a given type (rectangle or triangle).	smma_lo_00571
		Count the geometric figures in a picture.	smma_lo_00572
		Identify a geometric solid (cylinder, pyramid, or rectangular prism).	smma_lo_00616
		Identify geometric solids (cones, cubes, cylinders, pyramids, rectangular prisms, spheres).	smma_lo_00622

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
K.G.3	Identify shapes as two-dimensional (flat) or three-dimensional (solid).	Sort two-dimensional and three-dimensional shapes.	smma_lo_01677
K.G.4	Analyze and compare two- and three dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices), and other attributes (e.g., having sides of equal lengths).	Match same size and shape (congruent) irregular polygons.	smma_lo_00545
		Identify the figure that has a different number of sides from a given figure.	smma_lo_00553
		Match similar irregular polygons.	smma_lo_00555
		Identify matching congruent figures under rotation and/or reflection.	smma_lo_00557
		Match similar figures in different orientations.	smma_lo_00566
		Identify matching congruent geometric solids.	smma_lo_00567
		Match complex congruent figures in different orientations.	smma_lo_00581
		Count the number of sides in a polygon.	smma_lo_00586
		Identify figures with more or fewer than a given number of sides.	smma_lo_00587
		Identify corners (vertices) of polygons.	smma_lo_00589
		Identify similar three-dimensional figures.	smma_lo_00592
		Count the corners (vertices) of a polygon (3 to 7 corners).	smma_lo_00596
		R: Match simple geometric figures that have the same size, shape, and color.	smma_lo_00514
		R: Match pictures that are identical.	smma_lo_00515
		R: Match geometric figures that have the same size and shape (simple figures).	smma_lo_00516
		R: Move puzzle pieces to complete a puzzle (2 pieces).	smma_lo_00534
		R: Match congruent irregular polygons.	smma_lo_00545
		R: Match a shape to a picture containing that shape.	smma_lo_00548
		R: Identify shapes that are alike.	smma_lo_00549
		R: Identify matching congruent geometric solids.	smma_lo_00567
K.G.5	Build shapes (e.g., using sticks and clay) and draw shapes.	Connect points on a geoboard to copy a figure.	smma_lo_00611
K.MD.1	Describe measurable attributes of objects (e.g., length or weight). Match measuring tools to attribute (e.g., ruler to length). Describe several measurable attributes of a single object.	R: Identify the tool for a particular use (thermometer, scale, clock).	smma_lo_00761

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
K.MD.2	Make comparisons between two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	Match amounts of liquid in containers (3 amounts).	smma_lo_00689
		Identify the tallest object.	smma_lo_00694
		Identify the biggest or smallest object.	smma_lo_00695
		Identify the container with the greatest or least capacity.	smma_lo_00696
		Identify the object that is a different length.	smma_lo_00709
		Identify the object that is a different height.	smma_lo_00712
		Identify the objects that are taller or shorter than a nonstandard unit.	smma_lo_00743
		Identify the smaller or bigger rectangle.	smma_lo_00747
K.MD.3	Classify objects into given categories (attributes). Count the number of objects in each category (limit category counts to be less than or equal to 10).	Identify the figure that is a different color from a given figure.	smma_lo_00541
		Identify the figure with a different shape.	smma_lo_00547
		Classify geometric figures by a shape attribute.	smma_lo_00576
		Identify a pair of objects that are not the same size.	smma_lo_00692
		R: Use logical reasoning to identify the item that does not belong in a group.	smma_lo_01227
		R: Formulate questions around numerical data.	smma_lo_01642
K.MD.5	Tell time to the hour using both analog and digital clocks.	Tell time to the hour using an analog clock.	smma_lo_00714
		Tell time to the hour using digital and analog clocks.	smma_lo_00716
		R: Identify the hour or minute hand of a clock.	smma_lo_00697
K.MD.6	Identify coins by name.	Identify nickels or dimes.	smma_lo_00698
K.NBT.1	Compose and decompose numbers from 11 to 19 into ten ones and some further ones (e.g., by using objects or drawings) and record each composition and decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.	Find a number equal to 2 to 9 ones.	smma_lo_00972
		Enter the number equal to 1 to 9 ones.	smma_lo_00973
		Decompose numbers from 11 to 19 into ten ones and some further ones.	smma_lo_02094
		Compose numbers from 11 to 19 given ten ones and some further ones by using objects.	smma_lo_02095

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
K.OA.1	Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps) acting out situations, verbal explanations, expressions, or equations.	Count two sets of objects to find the total (sums 4 to 6).	smma_lo_00004
		Count two sets of objects to find the total (sums 2 to 5).	smma_lo_00005
		Count two sets of objects to find the total (sums 6 to 10).	smma_lo_00006
		Count the objects in two sets (sums 1 to 5).	smma_lo_00007
		Count the objects in two sets (sums 6 to 10).	smma_lo_00008
		Add using basic math facts displayed horizontally (sums 6 to 10).	smma_lo_00013
		Identify sets of objects that combined have a given sum (sums 6 to 9).	smma_lo_00726
		Identify a picture that represents an addition problem (sums 2 to 6).	smma_lo_01228
		Write a number sentence for an addition problem (sums 2 to 5).	smma_lo_01229
		Write a number sentence for an addition problem (sums 2 to 10).	smma_lo_01230
		Identify a picture that represents a subtraction problem (minuends 5 to 10).	smma_lo_01235
		Solve a subtraction problem in context (minuends 2 to 5, pictorial models).	smma_lo_01412
		Subtract using basic math facts (minuends 2 to 10).	smma_lo_01413
		Identify the expression that represents a picture (minuends 2 to 9).	smma_lo_01414
		Subtract using basic math facts displayed horizontally (minuends 6 to 9).	smma_lo_01417
		Identify the pictorial solution to a subtraction problem (minuends 2 to 9).	smma_lo_01422
		Identify the pictorial solution to a problem in context (minuends 4 to 9).	smma_lo_01423
		Model and apply joining stories to solve problems (sums 1 to 9).	smma_lo_01863
		R: Identify the picture that represents a subtraction problem in context (minuends 2 to 10).	smma_lo_01542

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
K.OA.2	Add or subtract whole numbers to 10 (e.g., by using objects or drawings to solve word problems).	Add zero to a number (sums 1 to 9).	smma_lo_00035
		Solve a subtraction problem in context (minuends 2 to 5, pictorial models).	smma_lo_01411
		Solve a problem in context by adding or subtracting 1.	smma_lo_01535
		Act out the solution to a subtraction problem in context (minuends 1 to 6).	smma_lo_01536
		Solve an addition problem in context (same objects, sums 2 to 5).	smma_lo_01540
		R: Write an addition number sentence to represent a picture (sums 1 to 9).	smma_lo_00036
K.OA.3	Decompose numbers less than or equal to 10 into pairs in more than one way (e.g., by using objects or drawings, and record each decomposition by a drawing or equation). For example, $5 = 2 + 3$ and $5 = 4 + 1$.	Decompose numbers 2–10 into pairs in more than one way by using objects.	smma_lo_02096
K.OA.4	For any number from 1- 4, find the number that makes 5 when added to the given number and, for any number from 1- 9, find the number that makes 10 when added to the given number (e.g., by using objects, drawings or 10 frames) and record the answer with a drawing or equation.	Model the number that makes 10 when added to a given number from 1 to 9; then identify the number.	smma_lo_02097
K.OA.5	Fluently add and subtract numbers up to 5.	Add using basic math facts (sums 1 to 5).	smma_lo_00010
		Add using basic math facts displayed horizontally (sums 2 to 5).	smma_lo_00011
		Subtract using basic math facts displayed horizontally (minuends 0 to 5).	smma_lo_01415
		Subtract using basic math facts (minuends 0 to 5).	smma_lo_01416
K.OA.6	Recognize, identify and continue simple patterns of color, shape, and size.	Match patterns of geometric figures.	smma_lo_00539
1.CC.1	Skip count by 2s and 5s.	Find a missing number in a sequence, counting by 5's (5 to 50).	smma_lo_01003
1.CC.2	Use ordinal numbers correctly when identifying object position (e.g., first, second, third, etc.).	Identify the nth object in a sequence (first to fifth).	smma_lo_00941
		Identify the ordinal word for the nth object in a sequence (first to fifth).	smma_lo_00968
1.CC.3	Order numbers from 1 - 100. Demonstrate ability in counting forward and backward.	Identify four numbers ordered from least to greatest (two-digit).	smma_lo_00985
		R: Identify the number with the greatest value (1 to 9).	smma_lo_00947
1.CC.4	Count a large quantity of objects by grouping into 10s and counting by 10s and 1s to find the quantity.	Find a missing number in a sequence, counting by 10's (10 to 100, visual support).	smma_lo_00971
1.CC.5	Use the symbols for greater than, less than or equal to when comparing two numbers or groups of objects.	Identify two numbers that make an inequality true (two-digit).	smma_lo_00997

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
1.G.1	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes. Identify shapes that have non-defining attributes (e.g., color, orientation, overall size). Build and draw shapes given specified attributes.	R: Identify open and closed figures.	smma_lo_00580
		R: Match compound figures that have the same shape (different sizes).	smma_lo_00594
1.G.2	Compose (put together) two-dimensional or three-dimensional shapes to create a larger, composite shape, and compose new shapes from the composite shape.	Identify puzzle pieces needed to make a given shape, and then complete the puzzle (4 to 6 pieces).	smma_lo_00564
		R: Match a plane figure to a geometric design that uses the figure.	smma_lo_00554
1.G.3	Partition circles and rectangles into two and four equal shares. Describe the shares using the words halves, fourths, and quarters and phrases half of, fourth of and quarter of. Describe the whole as two or four of the shares. Understand for these examples that decomposing (break apart) into more equal shares creates smaller shares.	Describe fractions in terms of the number of parts in a whole and the relative size of those parts (e.g., larger, smaller).	smma_lo_02137
1.MD.1	Measure and compare three objects using standard or non-standard units.	Order three objects by length.	smma_lo_02147
		R: Match objects of the same height (3 heights).	smma_lo_00687
		R: Match objects of the same length (3 lengths).	smma_lo_00688
		R: Given 3 objects, Identify the shortest or longest object.	smma_lo_00693
1.MD.2	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.	Find the height (2 to 9 nonstandard units).	smma_lo_00710
		Count to find the height and width (2 to 5 nonstandard units).	smma_lo_00713
		Find the total length of two objects (nonstandard units, sums 2 to 5).	smma_lo_00720
		Estimate the height and width (2 to 5 nonstandard units).	smma_lo_00721
		Measure the length of an object (2 to 7 nonstandard units).	smma_lo_00777
		R: Identify the group of objects that is 1 to 5 nonstandard units long or tall.	smma_lo_00701
		R: Count to find how long or tall (2 to 9 nonstandard units).	smma_lo_00705
		R: Identify an object given the height and width in nonstandard units.	smma_lo_00725
		R: Find the distance between two objects (2 to 8 nonstandard units).	smma_lo_00732
1.MD.3	Tell and write time in half hours using both analog and digital clocks.	Tell time to the half-hour using an analog clock.	smma_lo_00724

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
1.MD.5	Recognize and read money symbols including \$ and ¢.	Show a decimal money amount in dollars and coins (\$1.00 to \$5.00).	smma_lo_00774
1.MD.7	Organize, represent, and interpret data with up to three categories. Ask and answer comparison and quantity questions about the data.	Read and interpret a horizontal or vertical pictograph (four to six items).	smma_lo_00131
		Determine the most or the least from a horizontal or vertical pictograph (four to six items).	smma_lo_00135
		Read and interpret a horizontal or vertical pictograph (six items).	smma_lo_00150
		Read a pictograph (3 categories, 1 to 9 items per category).	smma_lo_01124
		Create a table from a vertical bar graph.	smma_lo_01132
		Within the context of repeated selections without replacement from a bag containing two balls of the same color, label events as certain or impossible.	smma_lo_01141
		Read and interpret a pictograph about birds counted (2 to 5 birds in each row).	smma_lo_01299
		R: Match each set of tally marks to a total (1 to 9).	smma_lo_00952
1.NBT.1	Count to 120. In this range, read, write and order numerals and represent a number of objects with a written numeral.	Identify a written number from a spoken number (two-digit).	smma_lo_00977
		Enter the number for a word name (two-digit).	smma_lo_01001
1.NBT.2a	10 can be thought of as a bundle of ten ones, called a "ten".	Given a number (1-9) of objects, determine how many more objects are needed to make a ten.	smma_lo_02017
1.NBT.2b	The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight or nine ones.	Model the numbers from 11 to 19 with place value blocks.	smma_lo_02018
1.NBT.2c	Model and identify place value positions of two digit numbers. Include: The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90, refer to one, two, three, four, five, six, seven,	Enter the number equal to 1 to 9 tens.	smma_lo_00974
		Enter the number of tens for a given multiple of ten (10 to 90).	smma_lo_00975
		Model multiples of 10 (from 10 to 90) with place value blocks.	smma_lo_02019
1.NBT.3	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, $<$.	Compare numbers using $<$ or $>$ symbols (20 to 99).	smma_lo_00328
		Identify two numbers that make an inequality true (two-digit).	smma_lo_00997
		Find two numbers within a range (two-digit).	smma_lo_00998
		Identify the greatest or least number (two-digit).	smma_lo_00999
		Identify the value that is greater than one number and less than another in context.	smma_lo_01554
		R: Compare numbers using $<$ or $>$ symbols (1 to 19).	smma_lo_00325
		R: Compare sums (sums 1 to 9).	smma_lo_00326
		R: Compare differences (minuends 1 to 9).	smma_lo_00337
R: Identify two numbers that make an inequality true (0 to 9).	smma_lo_00994		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
1.NBT.4	<p>Add using numbers up to 100 including adding a two-digit number and a one-digit number and adding a two-digit number and a multiple of 10. Use:</p> <ul style="list-style-type: none"> • concrete models or drawings and strategies based on place value • properties of operations • and/or relationship between addition and subtraction. <p>Relate the strategy to a written method and explain the reasoning used.</p> <p>Demonstrate in adding two-digit numbers, tens and tens are added, ones and ones are added and sometimes it is necessary to compose a ten from ten ones.</p>	Add two multiples of 10 (student choice, sums 20 to 90).	smma_lo_00025
		Add two addends (one- and two-digit addends, sums 11 to 99, no regrouping).	smma_lo_00033
		Add two addends (student choice, a one-digit and a two-digit addend, sums 20 to 98, regrouping).	smma_lo_00054
		Find a number that is one less or one more than a given number (two-digit).	smma_lo_00984
1.NBT.5	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	Mentally find 10 more or 10 less than a given two-digit number; model the solution with place value blocks.	smma_lo_02020
1.NBT.6	<p>Subtract multiples of 10 up to 100. Use:</p> <ul style="list-style-type: none"> • concrete models or drawings • strategies based on place value • properties of operations • and/or the relationship between addition and subtraction. <p>Relate the strategy to a written method and explain the reasoning used.</p>	Subtract two multiples of 10 (student choice, minuends 20 to 90, subtrahends 10 to 80).	smma_lo_01426
		Subtract multiples of 10 (student choice, minuends 20 to 90, subtrahends 10 to 80).	smma_lo_01437
		Subtract multiples of 10 (minuends 20 to 90, subtrahends 10 to 80, horizontal presentation).	smma_lo_01438
		Subtract 10 from a two-digit number (student choice, minuends 11 to 19).	smma_lo_01441
1.OA.1	<p>Use addition and subtraction strategies to solve word problems (using numbers up to 20), involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions, using a number line (e.g., by using objects, drawings and equations). Record and explain using equation symbols and a symbol for the unknown number to represent the problem.</p>	Use a picture to solve a missing addend problem (sums 2 to 6).	smma_lo_01232
		Choose the expression that can represent a problem with extra information; then solve (addition or subtraction).	smma_lo_01239
		Solve an addition problem in context (different objects, sums 2 to 5).	smma_lo_01544
		Solve a subtraction problem in context (minuends 2 to 5).	smma_lo_01545
		Solve a problem in context by finding a missing addend (sums 2 to 5).	smma_lo_01546
		Solve a subtraction problem in context by finding how many more (minuends 2 to 5).	smma_lo_01550
		Identify and solve a number sentence for an addition problem in context (sums 2 to 9).	smma_lo_01553
		Identify and solve a number sentence for an addition problem in context (sums 2 to 9).	smma_lo_01555
Identify the expression that represents a subtraction problem in context (minuends 2 to 5).	smma_lo_01559		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
1.OA.1	Use addition and subtraction strategies to solve word problems (using numbers up to 20), involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions, using a number line (e.g., by using objects, drawings and equations). Record and explain using equation symbols and a symbol for the unknown number to represent the problem.	Identify and solve the number sentence for a subtraction problem in context (minuends 2 to 5).	smma_lo_01562
		Identify and solve a number sentence for a subtraction problem in context (minuends 2 to 5).	smma_lo_01568
		R: Identify the operation from pictures and contexts (sums 6 to 9, minuends 6 to 9).	smma_lo_00321
		R: Identify a picture that represents a subtraction problem (one or two-digit).	smma_lo_01244
		R: Identify the picture that can be used to solve an addition or subtraction problem.	smma_lo_01255
		R: Identify the number sentence that solves a subtraction problem in context (minuends 11 to 18, subtrahends 1 to 9).	smma_lo_01439
1.OA.2	Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20 (e.g., by using objects, drawings and equations). Record and explain using equation symbols and a symbol for the unknown number to represent the problem.	Act out the problem to find the sum (basic facts).	smma_lo_01241
		Identify a number sentence that can be used to solve a problem with extra information (addition or subtraction, basic facts).	smma_lo_01242
		Act out a problem to find the sum of three numbers (one-digit addends).	smma_lo_01249
		Act out the solution to an addition problem in context (three addends, sums 1 to 9).	smma_lo_01537
		Solve an addition problem with three addends in context (sums 3 to 10).	smma_lo_01549
		Solve an addition problem with three addends in context (sums 3 to 10).	smma_lo_01557
		Solve an addition problem in context (three addends, sums 9 to 18).	smma_lo_01576
		R: Add three addends (sums 2 to 5).	smma_lo_00026
		R: Add three addends (audio presentation, sums 3 to 5).	smma_lo_00027
		R: Add three addends (sums 6 to 10).	smma_lo_00028
		R: Add three addends displayed horizontally (sums 6 to 10).	smma_lo_00029
		R: Add three addends (one-digit addends, sums 11 to 19).	smma_lo_00031
		R: Add three addends (one-digit addends, sums 10 to 19).	smma_lo_00032
		R: Find the missing addend in a number sentence (three addends, sums 1 to 9).	smma_lo_00052
		R: Find the missing addend in a number sentence (three addends, sums 10 to 19).	smma_lo_00066

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
1.OA.3	Apply properties of operations as strategies to add and subtract. (Students need not know the name of the property.) For example: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known (Commutative property of addition). To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$ (Associative property of addition). Demonstrate that when adding zero to any number, the quantity does not change (Identity property of addition).	Apply the Commutative Property of Addition as a strategy to add two numbers; use fact families as a strategy to subtract two numbers.	smma_lo_02021
		Use the Associative Property of Addition to add two numbers by regrouping the numbers into a ten and some ones.	smma_lo_02022
		Subtract two numbers by regrouping the numbers into a ten and some ones.	smma_lo_02026
		Apply the Associative Property of Addition to add three numbers.	smma_lo_02135
1.OA.4	Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.	Solve a subtraction problem by finding the missing addend.	smma_lo_02023
1.OA.6	Add and subtract using numbers up to 20, demonstrating fluency for addition and subtraction up to 10. Use strategies such as <ul style="list-style-type: none"> counting on making ten ($8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$) decomposing a number leading to a ten ($13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$) using the relationship between addition and subtraction, such as fact families, ($8 + 4 = 12$ and $12 - 8 = 4$) creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 3$). 	Add two addends (sums 6 to 10).	smma_lo_00012
		Add using basic math facts (addends 0 to 5, sums 1 to 5).	smma_lo_00014
		Add 1 to a number (sums 1 to 10).	smma_lo_00015
		Add two addends (one-digit addends, sums 6 to 10).	smma_lo_00016
		Add doubles (sums 2 to 18).	smma_lo_00017
		Add two consecutive addends (one-digit addends, sums 1 to 17).	smma_lo_00020
		Add two consecutive addends displayed horizontally (one-digit addends, sums 1 to 17).	smma_lo_00021
		Add using basic math facts (sums 11 to 18).	smma_lo_00022
		Add using basic math facts displayed horizontally (sums 10 to 18).	smma_lo_00023
		Add using basic math facts (sums 1 to 18).	smma_lo_00024
		Add four addends (one-digit addends, sums 3 to 10).	smma_lo_00030
		Add 10 to a number (sums 11 to 19).	smma_lo_00038
		Add 1- and 2-digit addends (sums 11-19, audio presentation).	smma_lo_00039
		Add two addends (sums 10 to 18).	smma_lo_00041
		Add using basic math facts displayed horizontally (sums 10 to 18).	smma_lo_00042
		Add 9 to a number (sums 10 to 18).	smma_lo_00045
		Use guess and check to solve an addition and subtraction problem (basic facts).	smma_lo_01240
		Subtract using basic math facts (minuends 6 to 9).	smma_lo_01418
		Subtract using basic math facts (minuends 1 to 9).	smma_lo_01419
Subtract using basic math facts (differences are 0).	smma_lo_01420		
Subtract 1 from a number (minuends 1 to 9).	smma_lo_01421		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
1.OA.6	Add and subtract using numbers up to 20, demonstrating fluency for addition and subtraction up to 10. Use strategies such as <ul style="list-style-type: none"> counting on making ten ($8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$) decomposing a number leading to a ten ($13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$) using the relationship between addition and subtraction, such as fact families, ($8 + 4 = 12$ and $12 - 8 = 4$) creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 3$). 	Subtract a number from 10 (subtrahends 1 to 9).	smma_lo_01424
		Subtract a number from its double (differences 1 to 9).	smma_lo_01425
		Subtract 1 from a number (two-digit minuends, no regrouping).	smma_lo_01427
		Subtract using basic math facts displayed horizontally (minuends 10 to 14, subtrahends 1 to 9).	smma_lo_01429
		Subtract (student choice, minuends 10 to 15, subtrahends 0 to 5, no regrouping).	smma_lo_01430
		Subtract using basic math facts (student choice, minuends 16 to 19, subtrahends 1 to 9).	smma_lo_01433
		Subtract using basic math facts (minuends 15 to 18, subtrahends 6 to 9).	smma_lo_01434
		Subtract using basic math facts (minuends 11 to 19, subtrahends 1 to 8).	smma_lo_01435
		Subtract using basic math facts (minuends 11 to 18, subtrahends 1 to 9).	smma_lo_01436
		Subtract 10 from a number (minuends 11 to 19, horizontal presentation).	smma_lo_01442
		Subtract a one-digit number from a two-digit number displayed horizontally (minuends 11 to 19, subtrahends 1 to 9).	smma_lo_01443
		Subtract using basic math facts (minuends 15 to 18, subtrahends 6 to 9).	smma_lo_01444
		Subtract (minuends 11 to 19, subtrahends 1 to 9, no regrouping).	smma_lo_01445
		1.OA.7	Understand the meaning of the equal sign (e.g., read equal sign as "same as") and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.
1.OA.8	Determine the unknown whole number in an addition or subtraction equation. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $6 + 6 = ?$, $5 = ? - 3$.	Find the missing addend in a number sentence.	smma_lo_00037
		Find the missing addend in a number sentence (sums 10 to 18).	smma_lo_00048
		Find the missing addend in a number sentence (a multiple of 10 and a one-digit addend, sums 11 to 99, no regrouping).	smma_lo_00050
		Complete fact families with four facts (sums 3 to 10).	smma_lo_00322
		Solve for c in $a + b = c$ (sums 0 to 9).	smma_lo_00323
		Solve for c in $a - b = c$ (differences 1 to 9).	smma_lo_00324
		Solve for c in $a + b = c$ (sums 10 to 18).	smma_lo_00327
		Solve for c in $a - b = c$ (differences 1 to 9).	smma_lo_00329
		Solve for a or b in $a + b = c$ (sums 0 to 9).	smma_lo_00330
		Solve for a or b in $a - b = c$ (differences 0 to 9).	smma_lo_00331

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
1.OA.8	Determine the unknown whole number in an addition or subtraction equation. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $6 + 6 = ?$, $5 = ? - 3$.	Solve for a or b in $a + b = c$ (sums 10 to 18).	smma_lo_00332
		Solve for a or b in $a - b = c$ (differences 0 to 18).	smma_lo_00333
		Identify a missing number in an addition and subtraction fact family.	smma_lo_01035
		Find the missing subtrahend in a subtraction number sentence (minuends 0 to 9).	smma_lo_01432
		Find the missing minuend in a subtraction number sentence (minuends 0 to 9).	smma_lo_01440
		Find the missing subtrahend in a subtraction number sentence (minuends 10 to 14).	smma_lo_01446
		Find the missing subtrahend in a subtraction number sentence (minuends 15 to 18).	smma_lo_01449
		Find the missing minuend in a subtraction number sentence (minuends 10 to 14).	smma_lo_01451
		Find the missing minuend in a subtraction number sentence (minuends 15 to 18).	smma_lo_01455
		Find the missing subtrahend in a subtraction number sentence (minuends 11 to 19).	smma_lo_01464
		Find the missing minuend in a subtraction number sentence (minuends 11 to 19).	smma_lo_01468
		Solve for the unknown in an addition equation (addends and sums less than 16).	smma_lo_01656
		Create a fact family (addition and subtraction).	smma_lo_01857
		Identify the missing number (addend or sum) in an addition equation, for numbers 20 and less.	smma_lo_02010
1.OA.9	Identify, continue and label patterns (e.g., aabb, abab). Create patterns using number, shape, size, rhythm or color.	Extend a 1-2-1-2 pattern of pictures.	smma_lo_00519
		Extend a 1-2-1-2 pattern of geometric figures.	smma_lo_00520
		Extend a 1-1-2-2 pattern of pictures.	smma_lo_00521
		Extend a 1-1-2-2 pattern of geometric figures.	smma_lo_00522
		Extend a 1-2-2 pattern of pictures.	smma_lo_00556
		Extend a 1-1-2 or 1-2-2 pattern of congruent shapes.	smma_lo_00558
		Extend a 1-2-3 pattern of similar figures.	smma_lo_00560
		Extend a 1-2-3 pattern of geometric figures.	smma_lo_00585
		Identify the missing geometric figure in a 1-2-1-2 pattern.	smma_lo_00591
Identify the missing picture in a 1-2-3-1-2-3 pattern.	smma_lo_00607		
2.G.1	Identify and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces compared visually, not by measuring. Identify triangles, quadrilaterals, pentagons, hexagons and cubes.	Identify a shape with positive and negative tests.	smma_lo_00578
		Identify polygons and circles (pentagons, hexagons, octagons, parallelograms).	smma_lo_00627
2.G.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	Count squares to find the area (2 to 8 units).	smma_lo_00706

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
2.G.3	Partition circles and rectangles into shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	R: Match halves of figures (left and right).	smma_lo_00561
		R: Match halves of figures (top and bottom).	smma_lo_00563
2.MD.1	Measure the length of an object by selecting and using standard tools such as rulers, yardsticks, meter sticks, and measuring tapes.	Measure the length of an object to the nearest inch (2 to 6 inches).	smma_lo_00703
		Measure the length of an object to the nearest centimeter (3 to 12 cm).	smma_lo_00750
		Measure the length of an object to the nearest inch (1 to 6 inches).	smma_lo_00755
		Measure the length of an object to the nearest centimeter (4 to 12 centimeters).	smma_lo_00762
		Measure the length of an object in centimeters or inches (whole numbers).	smma_lo_00785
		R: Identify a vertical distance (2 to 9 centimeters).	smma_lo_00758
		R: Select the appropriate ruler to measure vertical or horizontal lengths.	smma_lo_00812
2.MD.2	Measure the length of an object twice using different length units for the two measurements. Describe how the two measurements relate to the size of the unit chosen.	Measure the length of an object in cm and inches; relate the two measurements to the sizes of the units.	smma_lo_02003
2.MD.3	Estimate lengths using units of inches, feet, centimeters, and meters.	Identify an object given the estimated height and width in customary units.	smma_lo_00728
2.MD.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	Measure two objects in inches; determine how much longer one object is than the other.	smma_lo_02015
2.MD.5	Solve addition and subtraction word problems using numbers up to 100 involving length that are given in the same units (e.g., by using drawings of rulers). Write an equation with a symbol for the unknown to represent the problem.	Find the total length of two to four objects laid end to end (2 to 6 inches).	smma_lo_00748
		Measure two lengths and find the sum (metric, sums 2 to 9).	smma_lo_00753
		Measure two metric lengths, write an addition problem, and find the sum (sums 2 to 12 centimeters).	smma_lo_00756
2.MD.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.	Find a missing number on a number line (0 to 9).	smma_lo_00961
		Find a number that is one fewer or one greater than a given number (1 to 9).	smma_lo_00962
		Identify two numbers within a range (1 to 9), number line in feedback.	smma_lo_00963
		Identify a number on a number line between two given numbers (1 to 9).	smma_lo_00993
		Find a missing number for a point on a number line (two-digit).	smma_lo_00996
		Find the missing numbers on a number line counting by 3's or 9's (3 to 81).	smma_lo_01034
		Enter a number on a partially numbered number line (100 to 999).	smma_lo_01037

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
2.MD.7	Tell and write time to the nearest five minutes using a.m. and p.m. from analog and digital clocks.	Show time to 5-minute intervals using digital and analog clocks.	smma_lo_00744
		Identify another way to state the time (minutes before or after the hour).	smma_lo_00779
		Match digital times with descriptions (e.g., quarter to or quarter past).	smma_lo_00806
2.MD.8	Solve word problems involving dollar bills and coins using the \$ and ¢ symbols appropriately.	Determine the number of cents in 1 to 100 pennies, 1 to 20 nickels, or 1 to 10 dimes.	smma_lo_00143
		Determine the value of a combination of nickels, dimes, and quarters (values to \$5.00).	smma_lo_00165
		Identify the number of dollars and dimes that represent a given amount (\$1.10 to \$3.50).	smma_lo_00180
		Write the value of a set of dimes in dollar form (\$1.10 to \$3.90).	smma_lo_00183
		Enter the amount of money shown (1 to 5 cents in pennies).	smma_lo_00699
		Enter the amount of money shown (6 to 9 cents in pennies).	smma_lo_00704
		Enter the amount of money shown (11 to 50 cents in pennies and dimes).	smma_lo_00715
		Enter the amount of money shown (10 to 19 cents in pennies, nickels, and dimes).	smma_lo_00722
		Find equivalence of nickels and dimes (1 to 5 dimes).	smma_lo_00738
		Identify the given amount of money in coins (5 to 50 cents in nickels and dimes).	smma_lo_00740
		Show another way to represent an amount of money (10 to 24 cents in pennies, nickels, and dimes).	smma_lo_00745
		Enter the amount of money shown (10 to 99 cents).	smma_lo_00760
		Identify the set of coins that has greater value (16 to 75 cents in pennies, nickels, dimes, and quarters).	smma_lo_00765
		Show a decimal money amount in dollars and coins (\$1.00 to \$5.00).	smma_lo_00774
		Show the given amount of money in coins (25 to 90 cents in pennies, nickels, dimes, and quarters).	smma_lo_00778
		Write the value of a set of coins as a decimal amount (\$1.00 to \$3.20).	smma_lo_00784
		Identify items that can be purchased for a nickel.	smma_lo_01541
		Solve an addition problem involving money (sums 3 to 9 cents).	smma_lo_01543
		Solve a subtraction problem involving coins (two-digit numbers, no regrouping).	smma_lo_01579
		Make a picture to solve a multiplication problem involving total cost (2 to 5 items, 5, 10, or 15 cents each).	smma_lo_01584
Find the total value of a group of quarters, dimes, nickels, and pennies (sums to \$1.65).	smma_lo_01611		
R: Identify the coin worth 1, 5, 10, or 25 cents.	smma_lo_00702		
R: Identify the coin equivalent to 5, 10, or 25 pennies.	smma_lo_00727		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
2.MD.9	Collect, record, interpret, represent, and describe data in a table, graph or line plot.	Analyze a line plot to find the total number of items that fall at, above, or below a given value.	smma_lo_01156
		Given a chart of tree growth, infer which of two years there was more rainfall.	smma_lo_01305
		Read and interpret a line graph.	smma_lo_01764
2.MD.10	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart and compare problems using information presented in a bar graph.	Read and interpret a horizontal or vertical pictograph (four to six items).	smma_lo_00138
		Create a vertical bar graph from a table and interpret data in the graph.	smma_lo_01130
		Interpret the shorter or taller bar of a vertical bar graph as having fewer or more items.	smma_lo_01131
		Identify the two-column vertical bar graph that shows one category has fewer than, the same number as, or more than the other category.	smma_lo_01133
		Identify the vertical bar graph that shows a strictly increasing or decreasing trend.	smma_lo_01135
		Collect, tally, and graph the results generated by a spinner.	smma_lo_01144
		Construct a vertical bar graph based on data from a horizontal bar graph.	smma_lo_01146
		Identify the number of categories in a vertical bar graph that are less than, equal to, and greater than a given value.	smma_lo_01148
		Construct a horizontal bar graph based on data from a vertical bar graph.	smma_lo_01150
		Read and interpret data about tree growth from a bar graph.	smma_lo_01302
		Given a bar graph of tree growth, calculate the height a tree grew from one year to another.	smma_lo_01303
		Read a bar graph and answer questions about tree growth over time.	smma_lo_01304
		R: Identify a vertical bar graph that represents data in a table.	smma_lo_01134
		R: Identify the table that represents the data in a vertical bar graph.	smma_lo_01136
		R: Label the categories of a vertical bar graph based on data from a table.	smma_lo_01138
		R: Analyze a bar graph to find the number of bars that fall within a given range.	smma_lo_01154
		R: Create a table based on data from a bar graph.	smma_lo_01645
2.NBT.1a	100 can be thought of as a bundle of ten tens --called a "hundred".	Given a number (1-9) of groups of 10 objects, determine how many more groups of 10 objects are needed to make a hundred.	smma_lo_02011
2.NBT.1b	The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	Find a number equal to 1 to 9 hundreds.	smma_lo_01007
		Find the number of hundreds equivalent to a multiple of 100 (100 to 900).	smma_lo_01008

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
2.NBT.2	Count within 1000; skip-count by 5s, 10s, and 100s.	Find a missing number in a sequence, counting by 10's (two-digit, non multiples of 10).	smma_lo_00992
		Find a missing number in a sequence, counting up or down by 5's (two-digit).	smma_lo_01004
		Identify four numbers that are in consecutive order (three-digit).	smma_lo_01021
		Count by 2's, 4's, 5's, or 10's (2 to 20, 4 to 40, 5 to 50, 80 to 200).	smma_lo_01030
		Find the missing number in a sequence, counting by 5's or 10's.	smma_lo_01231
2.NBT.3	Read, write, order up to 1000 using base-ten numerals, number names and expanded form.	Identify the word name for a three-digit number.	smma_lo_01009
		Identify the number represented by a set of objects (pictorial models of hundreds, tens, and ones; three-digit).	smma_lo_01010
		Identify the number, model, word name, or expanded notation that has a different value (three-digit).	smma_lo_01018
		Enter the number for a word name (100 to 999).	smma_lo_01042
		Find a number equal to 1 to 9 hundreds, 0 to 9 tens, and 0 to 9 ones.	smma_lo_01047
2.NBT.4	Compare two three-digit numbers based on the meanings of the hundreds, tens and ones digits, using $>$, $=$, $<$ symbols to record the results.	Compare sums (two-digit addends, multiples of 10).	smma_lo_00334
		Identify the greatest or least number (three-digit).	smma_lo_01019
		Find a number between two given numbers (1 to 999).	smma_lo_01020
		Identify the greatest or least number (three-digit).	smma_lo_01026
		Identify a number that is between two numbers, or before, after, or closer to a number (101 to 999).	smma_lo_01027
		Identify four numbers that are in consecutive order (three-digit).	smma_lo_01029
2.NBT.5	Fluently add and subtract using numbers up to 100. Use: <ul style="list-style-type: none"> • strategies based on place value • properties of operations • and/or the relationship between addition and subtraction. 	Add a multiple of 10 and a one-digit number displayed horizontally (sums 11 to 99).	smma_lo_00040
		Add two multiples of 10 displayed horizontally (sums 20 to 90).	smma_lo_00044
		Add two addends displayed horizontally (one- and two-digit addends, sums 11 to 99).	smma_lo_00049
		Find the sum of two numbers displayed horizontally (a one-digit and a two-digit addend, sums 20 to 98, regrouping).	smma_lo_00055
		Add three addends displayed horizontally (one-digit addends, sums 20 to 27).	smma_lo_00062
		Add two addends displayed horizontally (two-digit addends, sums 21 to 99).	smma_lo_00064
		Add two addends (student choice, two-digit addends, sums 30 to 98, regrouping).	smma_lo_00067
		Add three addends (student choice, one-digit addends, sums 20 to 27).	smma_lo_00069
		Find the missing addend in a number sentence (a one-digit and a two-digit addend, sums 10 to 99, no regrouping).	smma_lo_00070

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
2.NBT.5	Fluently add and subtract using numbers up to 100. Use: <ul style="list-style-type: none"> • strategies based on place value • properties of operations • and/or the relationship between addition and subtraction. 	Find the missing addend in a number sentence (three addends, sums 20 to 27, regrouping).	smma_lo_00082
		Find the missing addend in a number sentence (two addends, sums 20 to 98, regrouping).	smma_lo_00084
		Solve for a or b in $a + b = c$ (sums 10 to 108).	smma_lo_00336
		Solve for c in $a - b = c$ (minuends 20 to 99, subtrahends 1 to 9, no regrouping).	smma_lo_00338
		Solve for c in $a - b = c$ (minuends 20 to 99, two-digit subtrahends, no regrouping).	smma_lo_00340
		Solve for a or b in $a + b = c$ (sums 12 to 98).	smma_lo_00341
		Solve for c in $a - b = c$ (minuends 20 to 99, regrouping).	smma_lo_00342
		Solve for a or b in $a - b = c$ (minuends 20 to 99, no regrouping).	smma_lo_00343
		Solve for a or b in $a - b = c$ (minuends 21 to 99, subtrahends 1 to 9, no regrouping).	smma_lo_00347
		Find the sum or difference when a two-digit number is added to or subtracted from a number (base-ten block models).	smma_lo_00989
		Identify a missing number in related addition and subtraction number sentences (two-digit sums, two-digit differences).	smma_lo_01060
		Subtract (student choice, minuends 21 to 95, subtrahends 1 to 9, no regrouping).	smma_lo_01428
		Subtract (minuends 21 to 99, subtrahends 1 to 9, no regrouping).	smma_lo_01450
		Subtract a multiple of 10 from a 2-digit number (minuends 11-99, vertical presentation).	smma_lo_01452
		Subtract (student choice, minuends 21 to 99, no regrouping).	smma_lo_01454
		Subtract two numbers displayed horizontally (counting up strategy, minuends 21 to 98, subtrahends 2 to 9, regrouping).	smma_lo_01462
		Subtract two-digit numbers with regrouping (vertical presentation).	smma_lo_01463
		Find the missing subtrahend in a subtraction number sentence (minuends 21 to 99).	smma_lo_01470
		Subtract two numbers displayed horizontally (counting up strategy, minuends 25 to 98, subtrahends 6 to 9, regrouping).	smma_lo_01472
		Subtract two-digit numbers with regrouping (vertical presentation).	smma_lo_01473
		Find the missing minuend in a number sentence (minuends 21 to 99).	smma_lo_01478
		Find the missing subtrahend in a number sentence (minuends 10 to 99).	smma_lo_01480
		Find the missing minuend in a subtraction number sentence (minuends 10 to 99, no regrouping).	smma_lo_01486
		Find the difference of two whole numbers (two-digit numbers, regrouping).	smma_lo_01488
Find the missing minuend in a subtraction number sentence (minuends 20 to 98, subtrahends 11 to 89).	smma_lo_01491		
2.NBT.6	Add up to four two-digit numbers using strategies based on place	Add three multiples of 10 (student choice, sums 30 to 90).	smma_lo_00043

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
	value and properties of operations.	Add three multiples of 10 (sums 100 to 190, regrouping).	smma_lo_00051
		Add three addends (two-digit addends, sums 33 to 99, no regrouping).	smma_lo_00056
		Add three addends (student choice, two-digit addends, sums 100 to 199, regrouping from tens to hundreds place).	smma_lo_00060
		Add three addends (student choice, one-digit and two-digit addends, sums 21 to 99, no regrouping).	smma_lo_00079
		Add three addends (student choice, one- and two-digit addends, sums 100 to 198, no regrouping).	smma_lo_00087
		Add three addends (student choice, one- and two-digit addends, sums 30 to 98, regrouping).	smma_lo_00090
		Add three addends (student choice, one- and two-digit addends, sums 100 to 207, regrouping).	smma_lo_00092
		Add three addends (student choice, two-digit addends, sums 40 to 297, regrouping).	smma_lo_00095
2.NBT.7	Add and subtract using numbers up to 1000. Use: <ul style="list-style-type: none"> concrete models or drawings and strategies based on place value properties of operations and/or relationship between addition and subtraction. <p>Relate the strategy to a written method and explain the reasoning used.</p> <p>Demonstrate in adding or subtracting three digit numbers, hundreds and hundreds are added or subtracted, tens and tens are added or subtracted, ones and ones are added or subtracted and sometimes it is necessary to compose a ten from ten ones or a hundred from ten tens.</p>	Add two multiples of 100 (student choice, sums 200 to 900).	smma_lo_00046
		Add two multiples of 10 (student choice, sums 100 to 180).	smma_lo_00047
		Add two addends (student choice, two-digit addends, sums 100 to 189, regrouping 10's to 100's).	smma_lo_00053
		Add two 3-digit numbers without regrouping (sums 200-999).	smma_lo_00058
		Add two addends (student choice, a two-digit and a three-digit addend, sums 120 to 998, regrouping).	smma_lo_00059
		Add two addends (student choice, three-digit addends, sums 200 to 998, regrouping).	smma_lo_00061
		Add two addends (student choice, a two-digit and a three-digit addend, sums 100 to 999, no regrouping).	smma_lo_00065
		Add two addends displayed horizontally (multiples of 10, sums 100 to 180, regrouping).	smma_lo_00068
		Add two addends (student choice, three-digit addends, sums 200 to 999, no regrouping).	smma_lo_00071
		Find the missing addend in a number sentence (multiples of 10, sums 100 to 180).	smma_lo_00074
		Add two addends (student choice, two-digit addends, sums 100 to 198, regrouping).	smma_lo_00075
		Add two addends (student choice, three-digit addends, sums 300 to 989, no regrouping).	smma_lo_00081
		Add two addends (student choice, a two-digit and a three-digit addend, sums 120 to 999, regrouping).	smma_lo_00083
		Add two addends (student choice, three-digit addends, sums 210 to 999, regrouping).	smma_lo_00085

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
2.NBT.7	<p>Add and subtract using numbers up to 1000. Use:</p> <ul style="list-style-type: none"> • concrete models or drawings and strategies based on place value • properties of operations • and/or relationship between addition and subtraction. <p>Relate the strategy to a written method and explain the reasoning used.</p> <p>Demonstrate in adding or subtracting three digit numbers, hundreds and hundreds are added or subtracted, tens and tens are added or subtracted, ones and ones are added or subtracted and sometimes it is necessary to compose a ten from ten ones or a hundred from ten tens.</p>	Find the missing addend in a number sentence (two addends, sums 100 to 199, regrouping).	smma_lo_00086
		Find the missing addend in an number sentence (a two-digit and a three-digit addend, multiples of 10, sums 110 to 990).	smma_lo_00088
		Solve for a or b in $a + b = c$ (sums 101 to 199, no regrouping).	smma_lo_00345
		Find a number that is one fewer, one greater, just before, or just after a three-digit number.	smma_lo_01016
		Find the sum or difference when ones, tens, or hundreds are added to or subtracted from a three-digit number (base-ten block models).	smma_lo_01017
		Subtract two multiples of 100 (student choice, minuends 200 to 900, subtrahends 100 to 800).	smma_lo_01447
		Subtract two multiples of 10 (minuends 100 to 180, subtrahends 10 to 90).	smma_lo_01448
		Subtract (student choice, minuends 110 to 199, two-digit subtrahends, no regrouping).	smma_lo_01456
		Subtract (student choice, minuends 122 to 199, subtrahends 11 to 88, no regrouping).	smma_lo_01457
		Subtract a three-digit multiple of 10 from a number (student choice, minuends 222 to 999, no regrouping).	smma_lo_01458
		Subtract (student choice, minuends and subtrahends 110 to 999).	smma_lo_01460
		Find the difference of two three-digit numbers.	smma_lo_01467
		Find the difference of two three-digit numbers (no regrouping).	smma_lo_01469
		Find the difference of two whole numbers (student choice, three-digit minuends, two-digit subtrahends, regrouping from hundreds place to tens place).	smma_lo_01471
		Find the difference of two whole numbers (student choice, three-digit minuends, two-digit subtrahends, regrouping from tens place to ones place).	smma_lo_01475
		Find the difference of two three-digit numbers (student choice, no regrouping).	smma_lo_01477
		Find the difference of two whole numbers (student choice, minuends 201 to 999, subtrahends 11 to 99, regrouping).	smma_lo_01479
		Find the difference of two whole numbers (student choice, three-digit minuends, two-digit subtrahends, regrouping from hundreds place to tens place).	smma_lo_01481
		Find the difference of two three-digit numbers (student choice, regrouping from the tens to the ones place).	smma_lo_01483
		Find the difference of two three-digit numbers (student choice, regrouping from the tens to the ones place).	smma_lo_01485

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
2.NBT.7	<p>Add and subtract using numbers up to 1000. Use:</p> <ul style="list-style-type: none"> • concrete models or drawings and strategies based on place value • properties of operations • and/or relationship between addition and subtraction. <p>Relate the strategy to a written method and explain the reasoning used.</p> <p>Demonstrate in adding or subtracting three digit numbers, hundreds and hundreds are added or subtracted, tens and tens are added or subtracted, ones and ones are added or subtracted and sometimes it is necessary to compose a ten from ten ones or a hundred from ten tens.</p>	Find the difference of two three-digit numbers (student choice, regrouping from the tens to the ones place).	smma_lo_01487
		Find the difference of two whole numbers (student choice, regrouping from tens place to ones place and hundreds place to tens place).	smma_lo_01489
		Find the difference of two three-digit numbers (student choice, regrouping from the tens to the ones place and the hundreds to the tens place).	smma_lo_01490
		Subtract a two-digit number from a three-digit number (regrouping from the tens place and hundreds place).	smma_lo_01492
2.NBT.8	Mentally add 10 or 100 to a given number 100-900 and mentally subtract 10 or 100 from a given number.	Add two addends (100 and a three-digit number, sums 200 to 900).	smma_lo_00057
		Subtract 100 from a three-digit number presented in a sentence.	smma_lo_01459
2.NBT.9	Explain or illustrate the processes of addition or subtraction and their relationship using place value and the properties of operations.	Explain how to solve an addition problem, either by using place value blocks or by rewriting the problem.	smma_lo_02012
		Explain how to solve a subtraction problem, either by using place value blocks or by rewriting the problem as an addition problem.	smma_lo_02013
2.OA.1	Use addition and subtraction strategies to estimate, then solve one- and two-step word problems (using numbers up to 100) involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions (e.g., by using objects, drawings and equations). Record and explain using equation symbols and a symbol for the unknown number to represent the problem.	Find the difference between two numbers (two-digit, presented as a sentence).	smma_lo_01000
		Choose an operation to solve a problem with extra information; then solve (addition or subtraction, basic facts).	smma_lo_01247
		Identify a number sentence that can be used to solve a problem with extra information (addition or subtraction, basic facts).	smma_lo_01250
		Work backwards to solve a problem with a missing number.	smma_lo_01266
		Calculate the difference between the life spans of two animals (differences 2 to 59).	smma_lo_01310
		Act out the solution to multi-step problem in context (addends, minuends 1 to 4).	smma_lo_01538
		Make a picture to solve a two-step problem in context (addition and subtraction).	smma_lo_01551
		Make a picture to solve a two-step problem in context (addition and subtraction).	smma_lo_01552
		Solve an addition problem in context (two-digit addends, sums less than 100, no regrouping).	smma_lo_01556
		Solve a problem with extra information (addition).	smma_lo_01558

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
2.OA.1	Use addition and subtraction strategies to estimate, then solve one- and two-step word problems (using numbers up to 100) involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions (e.g., by using objects, drawings and equations). Record and explain using equation symbols and a symbol for the unknown number to represent the problem.	Solve a subtraction problem in context (two-digit minuends, one-digit subtrahends, no regrouping).	smma_lo_01560
		Solve a subtraction problem in context to find how much is left (two-digit numbers, no regrouping).	smma_lo_01561
		Solve a subtraction problem to find a person's age (minuends 1 to 99, subtrahends 1 to 9, no regrouping).	smma_lo_01563
		Solve an addition problem in context (extra information, sums to 50, no regrouping).	smma_lo_01567
		Solve a problem in context by finding a missing addend (three addends, sums to 20).	smma_lo_01574
		Solve a subtraction problem in context (extra information, minuends 2 to 99, no regrouping).	smma_lo_01581
		Solve an addition problem in context (four addends, sums 0 to 25).	smma_lo_01587
		Read and interpret a table about temperature.	smma_lo_01646
		Solve a one-step equation (addition, sums to 100).	smma_lo_01686
		Identify the missing variable of addition or subtraction equations (sums 10 to 50, minuends 10 to 50).	smma_lo_01687
		Read and interpret a table.	smma_lo_01695
2.OA.2	Fluently add and subtract using numbers up to 20 using mental strategies. Know from memory all sums of two one-digit numbers.	Identify the missing number (minuend, subtrahend, or difference) in a subtraction equation, for numbers 20 and less.	smma_lo_02014
2.OA.3	Determine whether a group of objects (up to 20) is odd or even (e.g., by pairing objects and comparing, counting by 2s). Model an even number as two equal groups of objects and then write an equation as a sum of two equal addends.	R: Find a missing number in a sequence, counting by 2's (0 to 10).	smma_lo_00966
		R: Find the missing two-digit number in a sequence of odd or even numbers.	smma_lo_01002
2.OA.4	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns. Write an equation to express the total as repeated addition (e.g., array of 4 by 5 would be $5 + 5 + 5 + 5 = 20$).	Use repeated addition to multiply (products 2×2 to 5×5).	smma_lo_00852
		Solve addition problems with doubles as prelude to multiplication.	smma_lo_00853
		R: Add doubles (sums 4 to 18).	smma_lo_00019
3.G.1	Categorize shapes by different attribute classifications and recognize that shared attributes can define a larger category. Generalize to create examples or nonexamples.	Identify the quadrilaterals in a set of figures.	smma_lo_00615
		Identify parallelograms, rhombuses, and trapezoids.	smma_lo_00620
		Identify the quadrilaterals that are trapezoids or rhombuses.	smma_lo_00659

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.G.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape.	Identify a model that represents a fraction (halves, thirds, fourths).	smma_lo_00404
		Identify a fraction that represents a model (halves, thirds, fourths).	smma_lo_00405
		Draw one to two segments to divide a figure into two to four congruent parts.	smma_lo_00640
		Partition shapes into equal parts.	smma_lo_02000
		R: Identify the model that is divided into equal parts (2 to 8 parts).	smma_lo_00400
		R: Count the number of equal parts in a fractional model (2 to 8 parts).	smma_lo_00402
		R: Identify the figure divided into equal parts (halves to eighths).	smma_lo_00417
3.MD.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes or hours (e.g., by representing the problem on a number line diagram or clock).	Find the elapsed time (differences from 1 to 6 hours, does not cross 12 o'clock).	smma_lo_00142
		Find the time one to five hours before or after a given time (not crossing 12 o'clock).	smma_lo_00153
		Compare the difference of two times to a given time (1 to 24 hours, across 12 o'clock).	smma_lo_00155
		Find the time one to five hours before or after a given time (across 12 o'clock).	smma_lo_00162
		Find the time one to twelve hours and ten to fifty-five minutes from a starting time.	smma_lo_00175
		Determine elapsed time (1 to 6 hours, start and end times on the hour, can cross 12 o'clock).	smma_lo_00731
		Find the elapsed time ($1\frac{1}{2}$ to $6\frac{1}{2}$ hours, start times and end times on the hour or half-hour, can cross 12 o'clock).	smma_lo_00770
		Show time to the minute using digital and analog clocks.	smma_lo_00771
		Show time 1 to 11 hours and 5 to 55 minutes before or after the time shown (analog and digital clocks).	smma_lo_00775
		Find the time 5 to 50 minutes after the time shown (analog clock).	smma_lo_00798
		Solve a problem by identifying the time 1 to 2 hours after a given time (not crossing 12 o'clock).	smma_lo_01547
		Set the digital clock to match the time on the analog clock to the exact minute.	smma_lo_01670
		Show time 1 to 11 hours and 5 to 55 minutes before or after the time shown (analog and digital clocks).	smma_lo_02155

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.MD.2	Estimate and measure liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). (Excludes compound units such as cm ³ and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve and create one-step word problems involving masses or volumes that are given in the same units (e.g., by using drawings, such as a beaker with a measurement scale, to represent the problem). (Excludes multiplicative comparison problems [problems involving notions of “times as much.”])	Add units of capacity (pints, sums 2 to 6).	smma_lo_00764
		Read weights from a chart; choose two weights that equal a given total (sums to 1,500).	smma_lo_01301
		R: Add nonstandard units of capacity (sums 2 to 8).	smma_lo_00739
		R: Subtract nonstandard units of capacity (differences 0 to 3).	smma_lo_00742
		R: Find the capacity of a container (3 to 10 nonstandard units).	smma_lo_00754
		R: Choose the appropriate customary units of liquid measure (cups, quarts, and gallons).	smma_lo_01674
3.MD.3	Select an appropriate unit of English, metric, or non-standard measurement to estimate the length, time, weight, or temperature	Select the appropriate standard unit of measurement for length, capacity, and weight (customary).	smma_lo_00729
		Select the appropriate standard unit of measurement for length, capacity, and weight (metric).	smma_lo_00767
		Identify the reasonable length of an object (inches, feet, and yards).	smma_lo_00780
		Identify the reasonable weight of an object (ounces, pounds, and tons).	smma_lo_00787
3.MD.4	Draw a scaled picture graph and a 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. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.	Read and interpret a horizontal pictograph with a scale of 2 (five items).	smma_lo_00140
		Make a pictograph from a set of data.	smma_lo_00146
		Read and interpret a pictograph with a scale of 2, 5 or 10.	smma_lo_01158
		Compare the amounts of two rows in a pictograph whose scale is 2, 5, or 10 items per picture.	smma_lo_01172
		Compare the amounts of two rows in a pictograph whose scale is 2, 5, or 10 items per picture.	smma_lo_01174
		Complete and interpret a pictograph.	smma_lo_01207
		Create a bar graph using data from a chart of values.	smma_lo_01696
		Create a bar graph.	smma_lo_01769
3.MD.5	Measure and record lengths using rulers marked with halves and fourths of an inch. Make a line plot with the data, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	Measure the length of a bar to the nearest 1/4 inch or 0.5 cm.	smma_lo_00822
3.MD.7a	A square with side length 1 unit is said to have “one square unit” and can be used to measure area.	Identify a unit square and what attribute it is used to measure.	smma_lo_02027

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.MD.7b	Demonstrate that a plane figure which can be covered without gaps or overlaps by n (e.g., 6) unit squares is said to have an area of n (e.g., 6) square units.	Find the area of a plane figure made up of square units and halves of square units.	smma_lo_02028
3.MD.8	Measure areas by tiling with unit squares (square centimeters, square meters, square inches, square feet, and improvised units).	Find the sum of the areas of two figures (sums 3 to 8, nonstandard units).	smma_lo_00752
		Find the area of a rectangle (5 to 25 square centimeters).	smma_lo_00773
		Identify the figure in a set with the least or greatest area (figures are made up of squares).	smma_lo_00776
		Count squares and half squares to find the area of a figure in square centimeters.	smma_lo_00783
		Using a grid, find the area of a simple figure (8 to 60 nonstandard units).	smma_lo_00786
		Identify a figure with a given area on a geoboard (4 to 15 square units).	smma_lo_00802
		Estimate the area of a figure on a grid (3 to 11 square units).	smma_lo_00808
		Find the area of an irregular figure displayed on a grid (12 to 50 square units).	smma_lo_01280
3.MD.9a	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. For example, after tiling rectangles, develop a rule for finding the area of any rectangle.	Find the area of a rectangle by tiling it; complete an equation to show that the area is the same as would be found by multiplying the side lengths.	smma_lo_02029
3.MD.9b	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.	Find the area of a rectangle (36 to 144 customary or metric square units).	smma_lo_00173
		Identify rectangles that have equal areas, but different dimensions.	smma_lo_00823
		Multiply side lengths to find the area of a rectangle in a real-world context; use area to represent a whole-number product by arranging tiles in a rectangle.	smma_lo_02030
3.MD.9c	Use area models (rectangular arrays) to represent the distributive property in mathematical reasoning. 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 $a \times c$.	Identify equivalent arrays with different factors.	smma_lo_01715
		Use partial sums and arrays to solve a two-digit by a one-digit multiplication problem.	smma_lo_01716
		Tile a rectangle to find its area; represent the area of the rectangle in two different ways (length times width and the sum of the areas of two smaller rectangles).	smma_lo_02031

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.MD.9d	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. For example, the area of a 7 by 8 rectangle can be determined by decomposing it into a 7 by 3 rectangle and a 7 by 5 rectangle.	Find the area of a rectilinear figure in a context by decomposing it into two rectangles.	smma_lo_02032
3.MD.10	Solve real-world and mathematical problems involving perimeters of polygons, including: <ul style="list-style-type: none"> • finding the perimeter given the side lengths, • finding an unknown side length, • exhibiting rectangles with the same perimeter and different areas, • exhibiting rectangles with the same area and different perimeters. 	Find the perimeter of a rectangle (24 to 48 customary or metric units).	smma_lo_00169
		Given the length of one side of a rectangle, measure another side, and then find the perimeter.	smma_lo_00788
		Given the lengths of all sides, find the perimeter of a rectangle.	smma_lo_00821
		Given a perimeter, mark equilateral polygons with the same side measures.	smma_lo_00849
		Identify examples of relationships between area and perimeter.	smma_lo_00850
		R: Count to find the perimeter (3 to 9 nonstandard units).	smma_lo_00708
		R: Identify the shape with the greater perimeter (3 to 11 nonstandard units).	smma_lo_00734
		R: Find the perimeter of a figure (3 to 10 nonstandard units).	smma_lo_00757
R: Identify the expression for the perimeter of a figure.	smma_lo_00818		
3.NBT.1	Use place value understanding to round whole numbers to the nearest 10 or 100.	Round a two-digit number to the nearest ten.	smma_lo_01028
		Round a three-digit number to the nearest hundred.	smma_lo_01036
		Identify the best estimate for a sum of two numbers (two-digit addends, round to the nearest 10).	smma_lo_01052
		Round a two-digit or three-digit number to the nearest ten.	smma_lo_01059
		Round a three- to five-digit number to the nearest hundred.	smma_lo_01081
		Determine the reasonableness of a sum or difference (two- and three-digit numbers).	smma_lo_01259
		Estimate the sum by rounding to the nearest 10 (two-digit addends).	smma_lo_01615
		Round two-digit numbers to the nearest ten.	smma_lo_01647
		Round a two-digit number to the nearest ten (hundreds chart).	smma_lo_01648
		Round a two-digit number to the nearest ten.	smma_lo_01649
Round a three-digit number to the nearest hundred.	smma_lo_01650		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.NBT.1	Use place value understanding to round whole numbers to the nearest 10 or 100.	Round a three-digit number to the nearest hundred.	smma_lo_01651
		Round a three-digit number to the nearest hundred.	smma_lo_01652
		Estimate the difference (three-digit, differences 100 to 800).	smma_lo_01676
3.NBT.2	Use strategies and/or algorithms to fluently add and subtract with numbers up to 1000, demonstrating understanding of place value, properties of operations, and/or the relationship between addition and subtraction.	Add two addends (a two-digit and a three-digit addend, sums 111 to 899, regrouping).	smma_lo_00089
3.NBT.3	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 10×60) using strategies based on place value and properties of operations.	Multiply whole numbers (student choice, products 20×2 to 90×9 , multiples of 10).	smma_lo_00878
		Multiply whole numbers (products 2×20 to 90×9 , multiples of 10).	smma_lo_00885
3.NF.1	Understand a fraction $1/b$ (e.g., $1/4$) as the quantity formed by 1 part when a whole is partitioned into b (e.g., 4) equal parts; understand a fraction a/b (e.g., $2/4$) as the quantity formed by a (e.g., 2) parts of size $1/b$. (e.g., $1/4$)	Identify the set of shapes that represents a fraction (halves, thirds, fourths).	smma_lo_00406
		Identify the figure showing a fractional part shaded (halves, thirds, fourths).	smma_lo_00409
		Identify the fraction representing a shaded region (halves, thirds, fourths).	smma_lo_00410
		Identify the figure showing the fraction of a set shaded (halves, thirds, fourths).	smma_lo_00413
		Identify the fraction representing shaded items in a set (halves, thirds, fourths).	smma_lo_00414
		Identify a fractional portion of a set (halves, thirds, fourths).	smma_lo_00415
		Identify the figure showing a fraction of a region shaded (halves to eighths).	smma_lo_00420
		Identify a fraction representing the shaded part (halves to eighths).	smma_lo_00421
		Enter the fraction representing the shaded amount (halves to eighths).	smma_lo_00422
		Solve a problem by finding the fractional amount of a set (halves to eighths).	smma_lo_00424
		Identify a fractional portion of a set (halves to eighths).	smma_lo_00425
		Partition shapes into equal parts.	smma_lo_02000
		Model a fraction a/b by filling in a out of b sections in a fraction model.	smma_lo_02034
		R: Count the fractional parts and total number of parts in a region (halves, thirds, fourths).	smma_lo_00403
		R: Match the word name of a fraction to a fraction (halves, thirds, fourths).	smma_lo_00411
R: Count the fractional parts and total number of parts in a set (halves, thirds, fourths).	smma_lo_00412		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.NF.1	Understand a fraction $1/b$ (e.g., $1/4$) as the quantity formed by 1 part when a whole is partitioned into b (e.g., 4) equal parts; understand a fraction a/b (e.g., $2/4$) as the quantity formed by a (e.g., 2) parts of size $1/b$. (e.g., $1/4$)	R: Match the word name of the fraction to the fraction (halves to eighths).	smma_lo_00416
		R: Count shaded parts and the total number of parts (halves to eighths).	smma_lo_00419
		R: Count the shaded and total number of elements in a set (halves to eighths).	smma_lo_00423
3.NF.2a	Represent a fraction $1/b$ (e.g., $1/4$) on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b (e.g., 4) equal parts. Recognize that each part has size $1/b$ (e.g., $1/4$) and that the endpoint of the part based at 0 locates the number $1/b$ (e.g., $1/4$) on the number line.	Represent a unit fraction $1/b$ by partitioning a number line and then finding $1/b$ on it.	smma_lo_02148
3.NF.2b	Represent a fraction a/b (e.g., $2/8$) on a number line diagram or ruler by marking off a lengths $1/b$ (e.g., $1/8$) from 0. Recognize that the resulting interval has size a/b (e.g., $2/8$) and that its endpoint locates the number a/b (e.g., $2/8$) on the number line.	Enter the missing fraction on a number line (halves to eighths).	smma_lo_00430
		Identify a fraction for a given point on a number line divided into tenths, twelfths, or sixteenths.	smma_lo_00431
3.NF.3a	Understand two fractions as equivalent if they are the same size (modeled) or the same point on a number line.	Model equivalent fractions; identify equivalent fractions on a number line.	smma_lo_02035
3.NF.3b	Recognize and generate simple equivalent fractions (e.g., $1/2 = 2/4$, $4/6 = 2/3$). Explain why the fractions are equivalent (e.g., by using a visual fraction model).	Using models, find equivalent fractions (halves to sixteenths).	smma_lo_00433
		Determine if a fraction can be simplified; simplify if possible (simplified fractions $1/2$ to $3/4$).	smma_lo_00452
		Identify two equivalent fractions for $1/2$.	smma_lo_01708
3.NF.3c	Express and model whole numbers as fractions, and recognize and construct fractions that are equivalent to whole numbers. For example: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.	Find a fraction equal to 1 (halves to eighths).	smma_lo_00427
		Using a model, rewrite a whole number as a fraction (halves to eighths).	smma_lo_00443
3.NF.3d	Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions (e.g., by using a visual fraction model).	Using a number line, compare fractions (like denominators, halves to sixteenths).	smma_lo_00434
		Using models, compare fractions (unlike denominators, numerators equal to one, halves to sixteenths).	smma_lo_00435
		Compare fractions (like denominators, thirds to sixteenths).	smma_lo_00447

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.OA.1	Interpret products of whole numbers (e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each). For example, show objects in rectangular arrays or describe a context in which a total number of objects can be expressed as 5×7 .	Make a picture to solve a multiplication problem (basic facts).	smma_lo_01237
		Identify a picture that represents a multiplication problem (basic facts).	smma_lo_01246
		R: Solve addition and multiplication problems (products 2×6 to 2×9).	smma_lo_00854
3.OA.2	Interpret whole-number quotients of whole numbers (e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each). For example, deconstruct rectangular arrays or describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.	Make a picture to solve a division problem (math facts).	smma_lo_01238
		Identify a picture that represents a division problem (math facts).	smma_lo_01245
3.OA.3	Use multiplication and division numbers up to 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	Divide using graphic models (combinations to 5 x 5).	smma_lo_00279
		Identify the method to solve a multiplication problem with extra information.	smma_lo_01267
		Identify the method to solve a division problem with extra information.	smma_lo_01268
		Identify the missing information needed to solve a multiplication problem in context; then solve the problem.	smma_lo_01283
		Make a picture to solve a partitive division problem (dividends to 20).	smma_lo_01564
		Make a picture to solve a quotitive division problem (dividends to 20).	smma_lo_01565
		Identify and solve an expression that represents a multiplication problem in context (model shown, products to 32).	smma_lo_01570
		Find twice the amount of the money shown (products to 20).	smma_lo_01571
		Solve a multiplication problem in context (counting feedback, products 2×2 to 5×5).	smma_lo_01572
		Solve a multiplication problem in context (repeated addition feedback, products 2×2 to 5×5).	smma_lo_01578
		Solve a multiplication problem in context with extra information.	smma_lo_01589
		Identify and solve an expression that represents a multiplication problem in context (products 3×4 to 9×9).	smma_lo_01590
Solve a problem using data in a table (twice, half, three times, or four times an amount).	smma_lo_01593		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.OA.3	Use multiplication and division numbers up to 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	Solve a one-step division problem (math facts 2×2 to 9×9).	smma_lo_01600
		Identify the expression that represents a division problem in context; then solve the problem (dividends 12 to 81).	smma_lo_01605
		Use repeated subtraction to solve a division problem (dividends 4 to 24).	smma_lo_01664
		Identify four arrays for a given product (products 6 to 30).	smma_lo_01858
		R: Identify the number sentence that represents a division problem in context (model shown, dividends to 20).	smma_lo_01569
		R: Create arrays for a given product (products 6 to 30).	smma_lo_01859
3.OA.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = ? \div 3$, $6 \times 6 = ?$	Find the missing dividend or divisor (combinations 4×4 to 7×7).	smma_lo_00285
		Solve for a or b in $a \times b = c$ (products 1×2 to 5×9).	smma_lo_00351
		Solve for a or b in $a \div b = c$ (combinations 1×2 to 5×5).	smma_lo_00352
		Solve for a or b in $a \div b = c$ (combinations 6×6 to 9×9).	smma_lo_00354
		Find the missing factor (products to 5×5).	smma_lo_00856
		Find the missing factor (products to 5×5).	smma_lo_00858
		Find the missing factor (products 1×6 to 5×9).	smma_lo_00860
		Find the missing factor (products 1×6 to 5×9).	smma_lo_00862
		Find the missing factor (products 1×6 to 9×5).	smma_lo_00864
		Find the missing factor (products 6×1 to 9×5).	smma_lo_00866
		Find the missing factor (products 6×6 to 9×9).	smma_lo_00873
		Find the missing factor (products 6×6 to 9×9).	smma_lo_00877
		Find the missing factor (products 2×2 to 12×12).	smma_lo_00881
		Find the missing factor (products 20×11 to 90×99 , multiples of 10).	smma_lo_00891
R: Complete fact families with four facts (products 2×3 to 8×9).	smma_lo_00344		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.OA.5	<p>Make, test, support, draw conclusions and justify conjectures about properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.)</p> <ul style="list-style-type: none"> • Commutative property of multiplication: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. • Associative property of multiplication: $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. • Distributive property: Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. • Inverse property (relationship) of multiplication and division. 	Apply the Commutative Property of Multiplication as a strategy to multiply and divide whole numbers.	smma_lo_02036
		Apply the Associative Property of Multiplication as a strategy to multiply whole numbers.	smma_lo_02037
		Apply the Distributive Property as a strategy to multiply whole numbers.	smma_lo_02038
3.OA.6	Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.	Represent a division problem as an unknown-factor problem; then find the missing factor.	smma_lo_02039
3.OA.7	Fluently multiply and divide numbers up to 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	Divide using basic facts (combinations 5×5).	smma_lo_00280
		Divide using basic facts (combinations 2×6 to 9×5).	smma_lo_00282
		Divide (combinations 6×6 to 9×9).	smma_lo_00284
		Divide (combinations 2×10 to 5×12).	smma_lo_00286
		Divide (combinations 5×9 to 6×12).	smma_lo_00288
		Divide (combinations 2×13 to 5×19 , no remainder).	smma_lo_00305
		Solve for c in $a \times b = c$ (products 1×2 to 5×9).	smma_lo_00346
		Find the quotient (dividends 6×6 to 9×9).	smma_lo_00349
		Compare products (products 2×2 to 9×9).	smma_lo_00350
		Solve for c in $a \times b = c$ (products 6×2 to 9×12).	smma_lo_00353
		Compare quotients (combinations 2×2 to 9×9).	smma_lo_00355
		Multiply whole numbers (products to 5×5).	smma_lo_00855
		Multiply whole numbers (products 6×1 to 9×5).	smma_lo_00857
		Multiply whole numbers displayed horizontally (products 1×6 to 5×9).	smma_lo_00859
Multiply whole numbers (products 1×2 to 5×5).	smma_lo_00861		
Multiply whole numbers (products 1×6 to 5×9).	smma_lo_00863		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
3.OA.7	Fluently multiply and divide numbers up to 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	Multiply whole numbers (products 6×2 to 9×5).	smma_lo_00865
		Multiply whole numbers (products 6×6 to 9×9).	smma_lo_00867
		Multiply whole numbers displayed horizontally (products 6×6 to 9×9).	smma_lo_00868
3.OA.8	Solve and create two-step word problems using any of the four operations. Represent these problems using equations with a symbol (box, circle, question mark) standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Work backward to solve a two-step problem.	smma_lo_01288
		Find the missing information needed to solve a problem; then solve.	smma_lo_01293
		Make a picture to find the change received from a purchase (change back from \$1.00).	smma_lo_01583
		Estimate the distance by rounding ($d = rt$).	smma_lo_01606
		Solve a two-step multiplication and addition problem in context.	smma_lo_01633
		R: Solve for a, b, or c in $a + b + c = d$ (sums 10 to 19).	smma_lo_00335
		R: Solve for d in $a + b + c = d$ (one-digit addends, sums 20 to 27).	smma_lo_00339
		R: Identify the missing operation in a subtraction or addition number sentence (basic facts).	smma_lo_01031
		R: Identify the missing operation (sums 20 to 99, differences 10 to 70).	smma_lo_01055
		R: Identify the missing operation in a number sentence (all operations).	smma_lo_01074
		R: Identify a number sentence that can be used to solve an addition, a subtraction, or a multiplication problem (one- or two-digit).	smma_lo_01254
		R: Identify a number sentence that could be used to solve a multiplication problem.	smma_lo_01270
		R: Identify extra information in a problem.	smma_lo_01272
		R: Identify the missing information needed to solve a two-step problem; then solve the problem.	smma_lo_01274
		R: Identify an expression that can be used to solve a problem (inverse operations).	smma_lo_01275
		R: Estimate the number of objects to the nearest ten (21 to 49 objects).	smma_lo_01548
R: Solve a problem in context that involves finding the difference of 2 three-digit numbers.	smma_lo_01610		
3.OA.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.	Identify if the sum, difference, or product of two numbers is even or odd.	smma_lo_01086

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
4.G.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular, parallel, and intersecting line segments. Identify these in two-dimensional (plane) figures.	Identify line segments in three- and four-sided figures.	smma_lo_00579
		Identify right, acute, and obtuse angles in polygons.	smma_lo_00630
		Draw parallel, perpendicular, or intersecting lines on a grid.	smma_lo_00638
		Identify the pairs of parallel line segments in a geometric drawing.	smma_lo_00639
		Draw a line segment using a ruler (to 1/4 inch and 0.5 cm).	smma_lo_00800
		R: Predict whether or not lines will intersect.	smma_lo_00598
		R: Identify line segments.	smma_lo_00605
		R: Identify parallel and perpendicular streets on a map.	smma_lo_00619
		R: Determine whether an angle is larger than, smaller than, or the same size as a right angle.	smma_lo_00624
		R: Identify the set of vertices on a grid can be connected to form a figure (triangle, quadrilateral, rectangle, or square).	smma_lo_00625
		R: Identify an angle as acute, right, or obtuse.	smma_lo_00628
4.G.2	Classify two-dimensional (plane) figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	In a set of quadrilaterals, identify all the parallelograms.	smma_lo_00621
		Identify acute, obtuse, and right triangles.	smma_lo_00655
		Classify and sort two-dimensional geometric figures by properties and attributes.	smma_lo_01728
		Identify all triangles of a particular class (acute, right, or obtuse).	smma_lo_01774
4.G.3	Recognize a line of symmetry for a two-dimensional (plane) figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	Identify the vertical line of symmetry.	smma_lo_00595
		Identify the horizontal line of symmetry.	smma_lo_00597
		Draw a vertical or horizontal line of symmetry.	smma_lo_00608
		Identify lines that are lines of symmetry.	smma_lo_00623
		Complete a symmetrical drawing.	smma_lo_00647
		Identify the lines of symmetry in an object.	smma_lo_01699
		Identify the shape with a given number of lines of symmetry.	smma_lo_01773
4.MD.1	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4-ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).	Compare unlike customary units of length (inches, feet, and yards).	smma_lo_00792
		Identify the reasonable customary capacity of an object (cups, pints, quarts, and gallons).	smma_lo_00794
		Compare unlike customary units of capacity (cups, pints, quarts, and gallons).	smma_lo_00799
		Identify the reasonable length, width, or height of an object (millimeters, centimeters, and meters).	smma_lo_00803
		Identify the reasonable mass for an object (grams and kilograms).	smma_lo_00807
		Identify the reasonable capacity of an object (milliliters and liters).	smma_lo_00811
		Compare unlike metric units and identify the correct statement (mm, cm, m, km; mL, L; mg, g, kg).	smma_lo_00820

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
4.MD.1	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4-ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).	Convert hours to minutes.	smma_lo_01672
		Identify distances or objects that would be measured in cm, m, or km.	smma_lo_01703
		Identify the appropriate unit of measure (l, kl, g, kg, m, km).	smma_lo_01704
		Identify the appropriate unit of weight.	smma_lo_01730
		Choose the appropriate unit of capacity (ounce, cup, pint, quart, and gallon).	smma_lo_01864
4.MD.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	Find the perimeter of a polygon (decimal numbers, metric units).	smma_lo_00805
		Find a fraction of an hour in minutes ($\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, or $\frac{3}{4}$ hour).	smma_lo_00817
		Convert units of time (seconds, minutes, hours, days, weeks, months, and years).	smma_lo_00837
		Identify the most reasonable answer to a division problem involving money.	smma_lo_01279
		Solve a division problem about money with extra information (round quotient to the nearest whole number).	smma_lo_01585
		Estimate the total cost of four items by rounding to the nearest dollar (sums to \$15.00).	smma_lo_01591
		Solve an addition problem in context (3 three-digit addends, regrouping).	smma_lo_01597
		Find the change from one dollar (item costs 55 to 99 cents).	smma_lo_01598
		Solve a decimal subtraction problem in context (tenths, regrouping).	smma_lo_01599
		Solve a problem in context that involves adding three amounts expressed as dollars and cents.	smma_lo_01608
		Find the change from one dollar for two to four items (each 10, 15, or 20 cents).	smma_lo_01609
		Given the ending time and the elapsed time, find the starting time.	smma_lo_01613
		Determine the number of dollar bills needed to buy three to five items.	smma_lo_01623
		Estimate the difference by rounding to the nearest dollar (minuends \$5.00 to \$20.00, subtrahends \$3.00 to \$15.00).	smma_lo_01669
		R: Express yards and feet as an equivalent number of feet, or feet and inches as an equivalent number of inches.	smma_lo_00166
		R: Solve an addition problem by finding the total cost of two items (prices expressed as decimals, total < \$0.50, no regrouping).	smma_lo_00181
		R: Identify the fraction of a dollar a coin is worth (penny to half-dollar).	smma_lo_00809
R: Identify the most reasonable answer to a multiplication problem involving money.	smma_lo_01278		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
4.MD.3	Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.	Find the area of a rectangle using a formula.	smma_lo_00810
4.MD.5	Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.	R: Choose a title for a line plot and label the units.	smma_lo_01643
4.MD.6	Explain the classification of data from real-world problems shown in graphical representations including the use of terms range and mode with a given set of data.	Determine the mode of a set of data.	smma_lo_01765
4.MD.7	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand the following concepts of angle measurement:	R: Match the labeled angles to the correct angle notation.	smma_lo_00617
4.MD.7a	Measure and draw angles in whole number degrees using a protractor. Estimate and sketch angles of specified measure.	Use a protractor to measure an angle in a triangle or quadrilateral; then find the sum of all the angles in the figure.	smma_lo_00650
4.MD.8	Measure and draw angles in whole number degrees using a protractor. Estimate and sketch angles of specified measure.	Given the measure of an angle (initial side at 0 degrees, measure 10 to 180 degrees).	smma_lo_00631
		Use a protractor to measure an angle.	smma_lo_00636
		Measure an angle using the appropriate protractor.	smma_lo_00646
		Measure complementary or supplementary angles and find the sum of the angle measures.	smma_lo_00661
		Measure angles in degrees using a protractor.	smma_lo_00663
		R: Select the appropriate protractor to measure an angle.	smma_lo_00644
		R: Identify the better estimate for an angle measure.	smma_lo_00657
4.MD.9	Recognize angle measure as additive. When an angle is divided into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems (e.g., by using an equation with a symbol for the unknown angle measure).	Use a protractor to measure an angle in a triangle or quadrilateral; then find the sum of all the angles in the figure.	smma_lo_00650

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
4.NBT.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.	Identify the value of a given digit in a four-digit number.	smma_lo_01062
4.NBT.2	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on the value of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	Identify a number with a given digit in the ones, tens, hundreds, or thousands place.	smma_lo_01033
		Identify the expanded notation of a four-digit number.	smma_lo_01038
		Compare numbers (1,000 to 9,999).	smma_lo_01039
		Order four numbers from least to greatest (1,000 to 9,999).	smma_lo_01040
		Identify a word name for a four-, five- or six-digit numbers.	smma_lo_01043
		Identify a number with a given digit in the ones to hundred thousands place.	smma_lo_01045
		Identify the expanded notation of a five- or six-digit number.	smma_lo_01046
		Find a number equal to 1 to 9 thousands, 0 to 9 hundreds, 0 to 9 tens, and 0 to 9 ones.	smma_lo_01051
		Identify a number with a given digit in the thousands to hundred millions place.	smma_lo_01064
		Enter the number for a word name (1000 to 9999).	smma_lo_01065
		Enter a number in a place-value chart (10,000 to 999,999).	smma_lo_01070
		Identify a number that is one or two greater than or less than a five- or six-digit number.	smma_lo_01072
		Enter each individual digit in a place-value chart for a five- to nine-digit number given the name of the number.	smma_lo_01075
		Identify the number when given the word name (10,000 to 999,999).	smma_lo_01076
		Identify the digits in the period (hundreds, thousands, millions, and billions).	smma_lo_01083
		Express a number in expanded notation or determine the number from an expanded notation.	smma_lo_01097
		Order five numbers from least to greatest (three to six-digit numbers).	smma_lo_01710
		Compare two whole numbers (three to seven-digit numbers).	smma_lo_01711
		R: Show a four-digit number with base-ten blocks.	smma_lo_01032
		4.NBT.3	Use place value understanding to round multi-digit whole numbers to any place using a variety of estimation methods; be able to describe, compare, and contrast solutions.
Estimate the sum by rounding to the nearest hundred (three-digit addends).	smma_lo_01621		
R: Identify the multiple of 5 that is closest to a given number.	smma_lo_01005		
R: Identify the multiple of 5 that is closer to a number (25 to 94).	smma_lo_01006		
4.NBT.4	Fluently add and subtract multi-digit whole numbers using any algorithm.	Add two addends (student choice, three-digit addends, sums 1000 to 1899, regrouping).	smma_lo_00077

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID		
	Verify the reasonableness of the results.	Add two addends (student choice, three-digit addends, sums 1010 to 1898, regrouping).	smma_lo_00091		
		Add two addends (student choice, three-digit addends, sums 1000 to 1989, regrouping).	smma_lo_00093		
		Add two addends (student choice, three-digit addends, sums 1000 to 1998, regrouping in all places).	smma_lo_00096		
		Add three addends (student choice, a two-digit and 2 three-digit addends, sums 211 to 2097, regrouping in all places).	smma_lo_00097		
		Add three addends (student choice, three-digit addends, sums 311 to 2997, regrouping in all places).	smma_lo_00098		
		Add two addends (student choice, a three-digit and a four-digit addends, sums 1111 to 10998, regrouping in all places).	smma_lo_00099		
		Add two addends (student choice, four-digit addends, sums 2111 to 19998, regrouping in all places).	smma_lo_00100		
		Use logical reasoning to complete an addition puzzle with two three-digit addends.	smma_lo_01261		
		Subtract a three-digit number from a four-digit number (regrouping from the tens place).	smma_lo_01493		
		Subtract a three-digit number from a four-digit number (regrouping from the tens and thousands places).	smma_lo_01494		
		Subtract a three-digit number from a four-digit number (regrouping from the tens and thousands places).	smma_lo_01495		
		Subtract a three-digit number from a four-digit number (regrouping from the tens and hundreds places).	smma_lo_01496		
		Subtract a three-digit number from a four-digit number (regrouping from the tens and hundreds places).	smma_lo_01497		
		Find the difference of two whole numbers (student choice, four-digit numbers, regrouping from tens and hundreds places).	smma_lo_01498		
		Subtract a three-digit number from a four-digit number (student choice, regrouping from tens, hundreds, and thousands places).	smma_lo_01499		
		Subtract a three-digit number from a four-digit number (student choice, regrouping from tens, hundreds, and thousands places).	smma_lo_01500		
		Find the difference of two whole numbers (student choice, four-digit numbers, regrouping from tens and thousands places).	smma_lo_01501		
		Subtract across zero (student choice, four-digit minuends with a 0 in the tens place, regrouping from the tens, hundreds, and thousands places).	smma_lo_01502		
		4.NBT.4	Fluently add and subtract multi-digit whole numbers using any algorithm. Verify the reasonableness of the results.	Subtract across zero (student choice, four-digit minuends with a 0 in the tens place, regrouping from the tens, hundreds, and thousands places).	smma_lo_01503

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
		Find the difference of two whole numbers (student choice, four-digit numbers, regrouping from tens, hundreds, and thousands places).	smma_lo_01504
4.NBT.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Multiply a two-digit number by a one-digit number (products 10×1 to 12×4).	smma_lo_00869
		Multiply whole numbers (student choice, products 10×2 to 15×5).	smma_lo_00870
		Multiply whole numbers (products 10×2 to 12×12).	smma_lo_00871
		Multiply whole numbers (student choice, products 16×2 to 19×5).	smma_lo_00872
		Multiply whole numbers (student choice, products 10×6 to 15×9).	smma_lo_00874
		Multiply whole numbers (products 2×12 to 12×12).	smma_lo_00875
		Multiply whole numbers (student choice, products 16×6 to 19×9).	smma_lo_00876
		Multiply whole numbers (student choice, products 21×2 to 99×9).	smma_lo_00880
		Multiply whole numbers (student choice, products 100×2 to 990×9 , multiples of 10).	smma_lo_00882
		Multiply whole numbers (student choice, products 10×10 to 15×90 , multiples of 10).	smma_lo_00884
		Multiply whole numbers (student choice, products 101×2 to 999×9).	smma_lo_00886
		Multiply whole numbers (products 20×20 to 90×90 , multiples of 10).	smma_lo_00889
		Multiply whole numbers (student choice, products 1000×2 to 9999×9).	smma_lo_00892
		Find the missing factor (products 20×20 to 90×90 , multiples of 10).	smma_lo_00893
		Multiply whole numbers (products 13×1 to 19×5).	smma_lo_00894
		Multiply whole numbers (products 12×6 to 19×9).	smma_lo_00896
		Multiply whole numbers (student choice, products 11×11 to 15×99).	smma_lo_00899
		Multiply whole numbers (student choice, products 16×11 to 19×99).	smma_lo_00901
		Estimate the product by rounding the second factor.	smma_lo_01603
		Identify equivalent arrays with different factors (two-digit factors).	smma_lo_01733
Use an area model to solve a multiplication problem (two-digit factors).	smma_lo_01734		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
4.NBT.6	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Divide using the long division algorithm (one-digit divisor, no remainder).	smma_lo_00290
		Divide using the long division algorithm (one-digit divisor, remainder).	smma_lo_00292
		Divide using the long division algorithm (one-digit divisor, no remainder).	smma_lo_00294
		Divide using the long division algorithm (one-digit divisor, remainder).	smma_lo_00295
		Divide using the long division algorithm (three-digit dividend, one-digit divisor, no remainder).	smma_lo_00296
		Divide using the long division algorithm (three-digit dividend, one-digit divisor, remainder).	smma_lo_00297
		Divide using the long division algorithm (three-digit dividend, one-digit divisor, remainder).	smma_lo_00298
		Divide using the long division algorithm (four-digit dividend, one-digit divisor, remainder).	smma_lo_00300
		Find the quotient of b divided by a (combinations 6 x 13 to 9 x 19).	smma_lo_00312
		R: Estimate the quotient to the nearest ten (three-digit dividends, one-digit divisors).	smma_lo_00314
		4.NF.1	Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
Find the missing numerator or denominator in an equivalent fraction (simplified fractions $1/2$ to $7/8$).	smma_lo_00453		
Determine if a fraction can be simplified; simplify if possible (simplified fractions $1/2$ to $7/8$).	smma_lo_00454		
Write a fraction in simplest form (simplified fractions $1/2$ to $7/8$).	smma_lo_00455		
Determine if a fraction can be simplified; simplify if possible (simplified fractions $1/2$ to $7/8$).	smma_lo_00456		
Find an equivalent fraction of a simplified fraction (simplified fractions $1/2$ to $8/9$).	smma_lo_00457		
Find three equivalent fractions (simplified fractions $1/2$ to $8/9$).	smma_lo_00458		
Identify the figures with the equivalent fractional parts shaded.	smma_lo_00483		
Generate a table of equivalent fractions for a fraction in simplest form.	smma_lo_01791		
Generate a table of equivalent fractions for a fraction not in simplest form.	smma_lo_01792		
Identify the fraction equivalent to the given fraction.	smma_lo_01793		
R: Determine the least common denominator of two fractions.	smma_lo_00493		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
4.NF.2	Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$). Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions (e.g., by using a visual fraction model).	Use a model to compare two fractions (halves to eighths, unlike denominators).	smma_lo_00429
		Compare fractions to 1 on the number line (halves to eighths).	smma_lo_00432
		Using models, compare fractions (unlike denominators, halves to sixteenths).	smma_lo_00436
		Identify the fraction that is greater than a given fraction (unlike denominators, halves to eighths).	smma_lo_00437
		Using models, compare fractions (unlike denominators, halves to eighths).	smma_lo_00438
		Order three fractions from least to greatest (unlike denominators, halves to twelfths).	smma_lo_00440
		Compare fractions to 1 (halves to sixteenths).	smma_lo_00448
		Compare fractions (unlike denominators).	smma_lo_00462
		Identify the greatest or least fraction in a problem (unlike denominators).	smma_lo_00482
		Compare fractions (unlike denominators).	smma_lo_00495
		Identify a list of fractions that is ordered from least to greatest.	smma_lo_00497
		Identify the fraction that is between two fractions.	smma_lo_00503
4.NF.3a	Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	Identify the difference when a fraction is subtracted from 1 (fourths to twelfths).	smma_lo_00445
		Add fractions with like denominators (no simplifying).	smma_lo_01709
4.NF.3b	Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions (e.g., by using a visual fraction model). For example: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.	Using a model, rewrite a whole number as a fraction (halves to eighths).	smma_lo_00443
		Rewrite a fraction as a mixed number (halves to eighths).	smma_lo_00449
		Determine addition expressions that are equivalent to a given fraction.	smma_lo_02146
4.NF.3c	Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	Add mixed numbers; no simplifying (like denominators, thirds to twelfths).	smma_lo_00460
		Subtract mixed numbers; no simplifying (like denominators, thirds to twelfths).	smma_lo_00461
		Add mixed numbers; simplify if necessary (like denominators, halves to sixteenths).	smma_lo_00463
		Add mixed numbers within a context; simplify if necessary (like denominators).	smma_lo_00480
		Subtract mixed numbers in context; simplify if necessary (like denominators).	smma_lo_00481
		Subtract mixed numbers; simplify if necessary (like denominators).	smma_lo_00485
		Add mixed numbers with like denominators in context; simplify if necessary.	smma_lo_01624
		R: Using a model, rewrite a mixed number as a fraction (halves to eighths).	smma_lo_00446
		R: Rewrite a mixed number as a fraction (fifths to ninths).	smma_lo_00450
		4.NF.3d	Understand addition and subtraction of fractions as joining and

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
	separating parts referring to the same whole.	Using models, subtract fractions, no simplifying (like denominators, halves to eighths).	smma_lo_00442
		Add mixed numbers within a context; simplify if necessary (like denominators).	smma_lo_00480
		Subtract mixed numbers in context; simplify if necessary (like denominators).	smma_lo_00481
		Add mixed numbers with like denominators in context; simplify if necessary.	smma_lo_01624
		Use a model and an equation to solve word problems involving the addition of fractions with like denominators.	smma_lo_02004
		Use a model and an equation to solve word problems involving the subtraction of fractions with like denominators.	smma_lo_02016
4.NF.4a	Understand a fraction a/b as a multiple of $1/b$.	Use fraction models to relate a fraction to a whole number times a unit fraction. Then, write an equation for this relationship.	smma_lo_02005
4.NF.4b	Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number.	Use fraction models to rewrite the product of a whole number and a fraction as the product of a whole number and a unit fraction. Then, find the product.	smma_lo_02006
4.NF.4c	Solve word problems involving multiplication of a fraction by a whole number (e.g., by using visual fraction models and equations to represent the problem). Check for the reasonableness of the answer. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?	Determine the sale price of an item when the price is reduced by one-half, one-third, or one-fourth.	smma_lo_01285
4.NF.5	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.	Express a fraction with denominator 10 as an equivalent fraction with denominator 100. Then, add that fraction to another fraction with denominator 100.	smma_lo_02007
4.NF.6	Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.	Match a fraction to a decimal (tenths, 0.1 to 0.9).	smma_lo_00184
		Determine the fraction and decimal that represent a model (base-ten blocks, tenths, 0.1 to 0.9).	smma_lo_00185
		Mark the point on a number line that represents a decimal number (0.1 to 0.9).	smma_lo_00186
		Enter a decimal number for a mixed number (tenths, 1.1 to 9.9).	smma_lo_00187
		Find the missing decimal number on a number line (tenths, 0.1 to 0.9).	smma_lo_00188
4.NF.6	Use decimal notation for fractions with denominators 10 or 100. For	Enter the decimal equivalent for a mixed number (hundredths, 0.10 to 9.99).	smma_lo_00205

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
	example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.	Determine the equivalent fraction for a decimal (the denominator is a factor of 100).	smma_lo_00259
4.NF.7	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions (e.g., by using a visual model).	Compare decimal numbers (0.1 to 9.9).	smma_lo_00191
		Order three decimal numbers (tenths to hundredths).	smma_lo_00218
		R: Compare two decimal numbers (10.01 to 99.99).	smma_lo_00216
		R: Graph and interpret rainfall data in a chart.	smma_lo_01328
4.OA.1	Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 groups of 7 and 7 groups of 5 (Commutative property). Represent verbal statements of multiplicative comparisons as multiplication equations.	Translate a verbal statement of a multiplicative comparison into a multiplication equation.	smma_lo_02008
		Interpret a multiplication equation by writing a comparison statement.	smma_lo_02025
4.OA.2	Multiply or divide to solve word problems involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem or missing numbers in an array). Distinguish multiplicative comparison from additive comparison.	Use a model to represents a word problem involving multiplicative comparison. Then, use an equation to represent the solution to the word problem.	smma_lo_02009
4.OA.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Identify a reasonable answer for a division problem.	smma_lo_00246
		Use a picture to solve an addition problem with three addends.	smma_lo_01286
		Predict the effect of changing temperatures on the weather.	smma_lo_01312
		Measure topsoil in a soil sample; calculate how long it took to form.	smma_lo_01323
		Solve a division problem in context by rounding the quotient to the next whole number (model shown).	smma_lo_01573
		Make a picture to solve a multistep addition and multiplication problem in context.	smma_lo_01592
		Solve an addition problem using data in a table (sums 100 to 198).	smma_lo_01595
		Solve a division problem in context (remainder).	smma_lo_01616
		Interpret the quotient and remainder of a division problem in context (three-digit dividends).	smma_lo_01617
		Identify the best estimate for a sum using data in a table (three- and four-digit addends).	smma_lo_01620
4.OA.3	Solve multistep word problems posed with whole numbers and	Share a set of objects equally to show a division problem (6, 7, 10, or 12 objects).	smma_lo_01663

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
	having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Estimate the sum by rounding to the nearest hundred (three-digit addends).	smma_lo_01675
		R: Choose a method to solve a two-step problem.	smma_lo_01289
		R: Identify all the towns with temperatures below 32 degrees Fahrenheit on a weather map.	smma_lo_01311
		R: Determine the number of calories in multiple servings given data in a chart.	smma_lo_01333
		R: Identify the expression that gives the best estimate for an addition or subtraction problem in context (two-digit numbers).	smma_lo_01566
		R: Estimate the sum or difference in a money problem by rounding to the nearest 10 (two-digit sums and differences).	smma_lo_01580
		R: Identify the most reasonable quantity for a context (order of magnitude differs).	smma_lo_01586
		R: Solve a multiplication problem in context (one-, two-, and three-digit factors).	smma_lo_01604
		R: Estimate the difference of 2 four-digit numbers to the nearest thousand.	smma_lo_01614
4.OA.4	<ul style="list-style-type: none"> Find all factor pairs for a whole number in the range 1–100. Explain the correlation/differences between multiples and factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite. 	Identify the number that is divisible by a given factor (numbers 2 to 81, factors 2 to 9).	smma_lo_01066
		Identify numbers that are multiples of a given number.	smma_lo_01069
		Identify the complete set of factors for a number (2 to 25).	smma_lo_01071
		Find the factors of a number and determine if the number is prime or composite (3 to 30).	smma_lo_01073
		Identify prime and composite numbers (one- or two-digit).	smma_lo_01105
		Determine three factors of a given number.	smma_lo_01107
		Identify sets of prime and composite numbers.	smma_lo_01119
		R: Identify which numbers are divisible by another number (divisors 2 to 10).	smma_lo_01101
4.OA.5	Generate a number, shape pattern, table, t-chart, or input/output function that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. Be able to express the pattern in algebraic terms. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.	R: Identify an even or odd number (2 to 99).	smma_lo_01050
		R: Identify the expression whose sum is odd or even (basic facts).	smma_lo_01053
		R: Identify odd or even numbers (two- and three-digit).	smma_lo_01054
		R: Describe the relationship between two sets of numbers in a relation or function using multiplication, addition, or subtraction.	smma_lo_01653
4.OA.6	Extend patterns that use addition, subtraction, multiplication, division or symbols, up to 10 terms, represented by models (function machines), tables, sequences, or in	Determine the output of a one-function machine, given an input and sample inputs and outputs (combinations 2 x 2 to 9 x 9).	smma_lo_00358
		Count by 2's, 3's, or 10's (11 to 209, not multiples of 2, 3, 10).	smma_lo_01056

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
	problem situations. (L)	Count by 5's, 6's, or 7's (through 70).	smma_lo_01058
		Count by 8's or 9's (up to 90).	smma_lo_01061
		Find a missing number in a geometric sequence (first number 1 to 5, factors 2 to 5).	smma_lo_01117
		Look for a pattern to solve a problem.	smma_lo_01276
		Describe the relationship between two sets of numbers in a relation or function using subtraction (minuends 30 to 50, subtrahends 2 to 5).	smma_lo_01654
		Describe the relationship between two sets of numbers in a relation or function using multiplication (factors 2 - 5).	smma_lo_01655
		Extend a geometric pattern.	smma_lo_01691
5.G.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	Find the coordinates for a point on a grid.	smma_lo_01077
		Identify a point on a coordinate grid given the ordered pair.	smma_lo_01092
		R: Identify a point on a grid given an ordered pair, or identify the ordered pair for a point shown on the grid.	smma_lo_01057
5.G.2	Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	Identify a point on a coordinate grid given the ordered pair.	smma_lo_01092
		Find the amount of increase or decrease between two points in a line graph.	smma_lo_01178
		Read and interpret a line graph.	smma_lo_01206
		Interpret a line graph with time and temperature data, and add a point to line graph.	smma_lo_01324
		Given the survival needs for a bug, interpret a line graph with time and temperature data.	smma_lo_01325
		Graph a point on a coordinate grid (Quadrant I).	smma_lo_01735
		Graph a set of ordered pairs from a table on a coordinate plane (Quadrant I).	smma_lo_01808
		R: Find the coordinates for a point on a grid.	smma_lo_01077
		R: Create a line graph using data from a table.	smma_lo_01697
		R: Create a line graph.	smma_lo_01771

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
5.G.4	Classify two-dimensional (plane) figures in a hierarchy based on attributes and properties.	Identify the regular polygons.	smma_lo_00651
		Identify the true statement about a relationship among quadrilaterals.	smma_lo_00656
		Identify equilateral, isosceles, and scalene triangles.	smma_lo_00658
5.MD.1	Identify, estimate measure, and convert equivalent measures within systems English length (inches, feet, yards, miles) weight (ounces, pounds, tons) volume (fluid ounces, cups, pints, quarts, gallons) temperature (Fahrenheit) Metric length (millimeters, centimeters, meters, kilometers) volume (milliliters, liters), temperature (Celsius), (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real-world problems using appropriate tools.	Add metric measurements with unlike units and express the sum in terms of the smaller unit.	smma_lo_00168
		Add metric measurements with unlike units and express the sum in terms of the larger unit.	smma_lo_00172
		Read a thermometer to the nearest 10 degrees (Fahrenheit).	smma_lo_00768
		Convert customary units of length (inches, feet, and yards).	smma_lo_00791
		Convert customary units of capacity (cups, pints, quarts, and gallons).	smma_lo_00796
		Convert between customary units of weight (ounces and pounds).	smma_lo_00797
		Compare unlike customary units of weight and identify the correct statement (ounces and pounds).	smma_lo_00801
		Convert metric units of length (mm, cm, m, and km; whole numbers).	smma_lo_00814
5.MD.5a	A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	Identify a unit cube and what attribute it is used to measure.	smma_lo_02041
5.MD.5b	A solid figure that can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	Find the volume of a prism by packing the prism with unit cubes.	smma_lo_02042
5.MD.6	Estimate and measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units.	Find the volume of a rectangular solid by counting cubes.	smma_lo_00829
		Find the volume of a rectangular solid by counting cubes.	smma_lo_00833
5.MD.7a	Estimate and find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Demonstrate the associative property of multiplication by using the product of three whole numbers to find volumes (length \times width \times height).	Find the volume of a prism by packing the prism with unit cubes.	smma_lo_02042
5.MD.7b	Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real-world and mathematical problems.	Determine the volume of a box given the height, width, and length (60 to 480 customary or metric cubic units).	smma_lo_00174
		Compute the volume of right rectangular prisms using formulas.	smma_lo_02043

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
5.MD.7c	Recognize volume as additive. Find volumes of solid figures composed of two nonoverlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems.	Find the volume of a three-dimensional figure by decomposing that figure into two right rectangular prisms and then adding those prisms' volumes.	smma_lo_02044
5.NBT.1	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	Identify the place and the value of a digit in a number; for that value, identify the number 10 times as much and the number 1/10 as much.	smma_lo_02045
5.NBT.2	Explain and extend the patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain and extend the patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	Explain patterns in the number of zeros of the product and in the placement of the decimal point when multiplying a number by powers of ten.	smma_lo_02046
		R: Multiply whole numbers (multiples of 10 or 100).	smma_lo_00911
5.NBT.3	Read, write, and compare decimals to thousandths.	R: Enter a decimal number on a number line (1.11 to 9.89).	smma_lo_00213
		R: Find the missing decimal number on a number line (1.0 to 9.89).	smma_lo_00215
5.NBT.3a	Read and write decimals to thousandths using base-ten numerals, number names, and expanded form [e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 (1/10) + 9 (1/100) + 2 (1/1000)$].	Match the word name with the decimal number (0.10 to 9.99).	smma_lo_00204
		Match a decimal number to an equivalent fraction (tenths to thousandths).	smma_lo_00224
		Match a decimal number to its word name (to thousandths).	smma_lo_00227
		Identify the place value of a digit in a decimal number (tenths to ten thousandths).	smma_lo_00241
		Enter a decimal number in a place-value chart (tenths to thousandths).	smma_lo_01089
		R: Identify the decimal number with a 0 to 9 in the tenths or hundredths place.	smma_lo_00202
		R: Match a decimal number to a model (thousandths).	smma_lo_00242
5.NBT.3b	Compare two decimals to thousandths place based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	Compare decimal numbers (to thousandths).	smma_lo_00225
		Order three decimals from least to greatest (to thousandths).	smma_lo_00236
		Identify the symbol ($<$ or $>$) needed to complete the inequality.	smma_lo_00254
		Identify a list of decimal numbers ordered from least to greatest.	smma_lo_01103
5.NBT.4	Use place values understanding to round decimals to any place.	Round a decimal to the nearest tenth, hundredth, or whole number.	smma_lo_00230

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
5.NBT.5	Fluently multiply multi-digit whole numbers using the standard algorithm.	Multiply whole numbers (products 10,000 x 2 to 99,999 x 9).	smma_lo_00900
		Multiply whole numbers (student choice, products 100 x 20 to 990 x 90, multiples of 10).	smma_lo_00902
		Multiply whole numbers (student choice, products 21 x 11 to 99 x 99).	smma_lo_00903
		Multiply whole numbers (student choice, products 101 x 20 to 999 x 90, multiples of 10).	smma_lo_00904
		Multiply whole numbers (student choice, products 100 x 21 to 990 x 90, multiples of 10).	smma_lo_00905
		Multiply (student choice, products 1000 x 20 to 9999 x 90, multiples of 10).	smma_lo_00906
		Multiply whole numbers (student choice, products 101 x 21 to 999 x 99).	smma_lo_00907
		Multiply by a multiple of 10 (student choice, 10,000 x 20 to 99,999 x 90).	smma_lo_00908
		Multiply whole numbers (student choice, products 1000 x 21 to 9999 x 99).	smma_lo_00909
		Multiply whole numbers (student choice, 10,000 x 21 to 99,999 x 99).	smma_lo_00910
		Estimate the product of two numbers (factors 101 to 949).	smma_lo_00912
		Multiply one- to five-digit whole numbers by powers of ten (10 to 100,000).	smma_lo_01078
		Estimate the product by rounding each factor.	smma_lo_01622
		R: Estimate the product of three factors (1,000 to 350,000).	smma_lo_01099
		5.NBT.6	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, number lines, real life situations, and/or area models.
Divide (combinations 6 x 20 to 9 x 90).	smma_lo_00293		
Multiply multiples of 10 using mental math (20 x 20 to 90 x 90).	smma_lo_00299		
Find the missing dividend or divisor (combinations 20 x 20 to 90 x 90).	smma_lo_00303		
R: Choose the best estimate for a long division problem (three-digit dividends, two-digit divisors).	smma_lo_00315		
R: Estimate the sum, difference, product or quotient to solve a problem in context (round to the nearest thousand).	smma_lo_01109		
5.NBT.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between the operations. Relate the strategy to a written method and explain their reasoning in getting their answers.	Subtract metric length or weight measurements expressed as decimals (to tenths, difference 1.2 to 8.9, regrouping).	smma_lo_00159
		Add decimals using addition facts (sums 0.02-0.99).	smma_lo_00206
		Subtract decimals numbers (minuends and subtrahends 0.01 to 9.99).	smma_lo_00207
		Subtract money amounts (sums less than \$17.00, regrouping).	smma_lo_00208
		Add or subtract decimals using mental math (sums less than 1.00, with or without regrouping).	smma_lo_00210
		Align the decimal numbers in a vertical addition problem; then solve (hundredths, regrouping).	smma_lo_00211

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
5.NBT.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between the operations. Relate the strategy to a written method and explain their reasoning in getting their answers.	Align the decimal numbers in a vertical subtraction problem; then solve (hundredths, regrouping).	smma_lo_00212
		Subtract money amounts (sums less than \$50.00, regrouping).	smma_lo_00214
		Add decimal numbers using mental math (sums 1.0 to 99.8, regrouping).	smma_lo_00217
		Find the missing factor and quotient in two related number sentences (products 0.2×2 to 0.9×5).	smma_lo_00219
		Find the missing decimal number on a number line; then count by multiples of tenths to find the product.	smma_lo_00220
		Multiply a decimal and a whole number displayed horizontally (0.02×2 to 0.09×5).	smma_lo_00221
		Multiply two decimals or multiply a decimal by a whole number (tenths to hundredths).	smma_lo_00223
		Multiply decimals displayed horizontally (0.2×0.6 to 0.9×0.12).	smma_lo_00232
		Multiply decimals by 10, 100, or 1000.	smma_lo_00235
		Divide a decimal by a decimal (horizontal division; dividends to tenths).	smma_lo_00237
		Divide a decimal by a whole number.	smma_lo_00239
		Determine the missing factor in the multiplication number sentence (decimals, to ten-thousandths).	smma_lo_00240
		Divide decimals (0.3×0.3 to 0.9×0.09).	smma_lo_00245
		Divide decimals (0×2 to 2×5).	smma_lo_00251
		Multiply a whole number or a decimal by 0.1, 0.01, or 0.001.	smma_lo_00252
		Find the missing decimal number in a pattern.	smma_lo_00253
		Divide a decimal by 0.1, 0.01, or 0.001.	smma_lo_00263
		Divide a decimal by 0.1, 0.01, or 0.001 (dividends 0.001 to 0.999).	smma_lo_00267
		Find the perimeter of a polygon (decimal numbers, metric units).	smma_lo_00790
		Measure the amount of rainfall for the week; then complete the chart and determine the total amount of rainfall for the month.	smma_lo_01327
		Find the number of dollar bills needed to buy two to four items (each \$1.79 to \$3.99 each).	smma_lo_01629
		Solve a one-step equation with decimals in context (addition and subtraction).	smma_lo_01799
		Identify the rule for an iterative pattern.	smma_lo_01840
		R: Add two decimal numbers (tenths, sums 1.0 to 2.0, regrouping).	smma_lo_00192
		R: Add two decimal numbers using mental math (sums 1.1 to 9.9, no regrouping).	smma_lo_00193
		R: Subtract decimal numbers using mental math (minuends and subtrahends 0.1 to 9.9, no regrouping).	smma_lo_00195
		R: Add two decimal numbers using mental math (sums 10.1 to 99.9, no regrouping).	smma_lo_00196

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
5.NBT.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between the operations. Relate the strategy to a written method and explain their reasoning in getting their answers.	R: Subtract decimal numbers using mental math (minuends and subtrahends 10.1 to 99.9, no regrouping).	smma_lo_00197
		R: Subtract decimal numbers (minuends 2.0 to 9.9, subtrahends 0.1 to 0.9, regrouping).	smma_lo_00198
		R: Add decimal numbers (sums less than 10.0, regrouping).	smma_lo_00199
		R: Add two decimal numbers (sums 1.0 to 98.9, regrouping).	smma_lo_00201
		R: Subtract decimal numbers (minuends and subtrahends 0.1 to 99.9, with or without regrouping).	smma_lo_00203
		R: Identify the location of the decimal point of the product of two decimals (factors, tenths to hundredths).	smma_lo_00222
		R: Identify the best estimate of a sum, difference, or product.	smma_lo_00231
		R: Identify the best estimate for a quotient (decimal divided by a whole number).	smma_lo_00238
		R: Identify the probable error in a multiplication calculation with decimals.	smma_lo_00250
		5.NF.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
Add fractions; no simplifying (unlike denominators).	smma_lo_00465		
Subtract fractions; no simplifying (unlike denominators).	smma_lo_00466		
Add fractions; no simplifying (unlike denominators).	smma_lo_00467		
Subtract fractions; no simplifying (unlike denominators).	smma_lo_00468		
Add fractions; simplify if necessary (unlike denominators).	smma_lo_00471		
Subtract fractions; simplify if necessary (unlike denominators).	smma_lo_00472		
Add fractions; simplify if necessary (unlike denominators).	smma_lo_00473		
Subtract fractions; simplify if necessary (unlike denominators).	smma_lo_00474		
Add mixed numbers; simplify if necessary (like denominators).	smma_lo_00484		
Determine the equivalent fractions using the least common denominator of two given fractions.	smma_lo_00494		
Add mixed numbers; simplify if necessary (unlike denominators).	smma_lo_00499		
Subtract mixed numbers; simplify if necessary (unlike denominators).	smma_lo_00500		
Add mixed numbers; simplify if necessary (unlike denominators).	smma_lo_00504		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
5.NF.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.	Subtract mixed numbers; simplify if necessary (unlike denominators).	smma_lo_00505
		Add mixed numbers within a context; simplify if necessary (unlike denominators).	smma_lo_00509
		Subtract mixed numbers within a context; simplify if necessary (unlike denominators).	smma_lo_00510
		Add two fractional parts of whole numbers in context.	smma_lo_01640
5.NF.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models or equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and check the reasonableness of answers.	Estimate the sum, product, or quotient in problems with fractions.	smma_lo_01095
		Subtract two fractions from a whole within a context.	smma_lo_01634
		Use addition to find an equivalent fraction for $\frac{1}{2}$.	smma_lo_01706
		Estimate the difference of two fractions.	smma_lo_01707
5.NF.3	Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers (e.g., by using visual fraction models or equations to represent the problem).	Model a division word problem that results in a rational quotient; then express the word problem with an equation.	smma_lo_02047
5.NF.4a	Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)	Model multiplication of a whole number by a fraction; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	smma_lo_02048
		Model the multiplication of two fractions; complete an equation to show the product; interpret a real-world context that can be modeled by this equation.	smma_lo_02054
5.NF.4b	Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	Find the area of a rectangle with fractional side lengths in two ways: by multiplying its side lengths and by tiling it with smaller rectangles.	smma_lo_02049
5.NF.5a	Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.	Determine whether multiplying a number by a factor results in scaling the number up or down.	smma_lo_02050

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
5.NF.5b	Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1. (Division of a fraction by a fraction is not a requirement at this grade.)	Determine whether multiplying a number by a factor results in scaling the number up or down.	smma_lo_02051
5.NF.6	Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	Find the fractional part of a recipe (multiply a fraction and a mixed number).	smma_lo_00835
		R: Multiply mixed numbers; simplify if necessary.	smma_lo_00501
5.NF.7a	Interpret division of a unit fraction by a nonzero whole number, and compute such quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.	Model the division of a unit fraction by a nonzero whole number, and compute the quotient.	smma_lo_02052
5.NF.7b	Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.	Divide a whole number by a fraction; simplify if necessary.	smma_lo_01787
5.NF.7c	Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions (e.g., by using visual fraction models and equations to represent the problem). For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?	Use models to solve real-world problems involving division of unit fractions by nonzero whole numbers and division of whole numbers by unit fractions.	smma_lo_02053
		Use models to solve real-world problems involving division of unit fractions by nonzero whole numbers.	smma_lo_02156
5.OA.1	Use parentheses to construct numerical expressions, and evaluate numerical expressions with these symbols.	Evaluate an expression using the order of operations.	smma_lo_01091

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
6.EE.1	Write and evaluate numerical expressions involving whole-number exponents.	Give the value of a number (1 to 10) raised to a power (1 to 5).	smma_lo_01098
		Match expressions with repeated factors to numbers in exponential form to create equations.	smma_lo_01100
6.EE.2a	Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as $5 - y$.	Identify the expression that is a translation of the written phrase.	smma_lo_01759
		Identify the written phrase that is a translation of a expression or inequality.	smma_lo_01815
		Translate an expression into a written phrase (two-step).	smma_lo_01816
		Write expressions that record operations with numbers and variables.	smma_lo_02056
6.EE.2b	Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.	Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).	smma_lo_02057
6.EE.2c	Evaluate expressions and formulas. Include formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order with or without parentheses. (Order of Operations)	Given the value for the variable, evaluate an addition expression (sums 4 to 12).	smma_lo_01683
		Evaluate an expression with variables using substitution and a value chart (addition, sums to 18).	smma_lo_01685
		Evaluate the expression $mx + c$ or $mx - c$.	smma_lo_01739
		Evaluate an expression within a context (multiplication).	smma_lo_01740
		Generate a table of values given a one-step rule.	smma_lo_01755
6.EE.3	Apply the properties of operations to generate equivalent expressions. Model (e.g., manipulatives, graph paper) and apply the distributive, commutative, identity, and inverse properties with integers and variables by writing equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$.	Identify an equivalent expression for $a \times (b + c)$ with variables.	smma_lo_00129
		Apply the properties of operations to generate equivalent expressions.	smma_lo_02059
		R: Use the commutative and associative properties of addition to find the missing number.	smma_lo_01090
6.EE.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).	Choose all expressions that are equivalent to a given expression.	smma_lo_02060
6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	smma_lo_02061

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
6.EE.6	Use variables to represent numbers and write expressions when solving a realworld or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	Write an expression to represent a real-world problem, using variables to represent numbers.	smma_lo_02062
6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.	Solve for a or b in $a \times b = c$ (products 6×2 to 9×12).	smma_lo_00357
		Solve for a or b in $a \div b = c$ (combinations $2 \div 10$ to $5 \div 12$).	smma_lo_00359
		Solve for a or b in $a \div b = c$ (combinations $6 \div 10$ to $9 \div 12$).	smma_lo_00361
		Solve for a or b in $a \times b = x$ (products 2×10 to 12×12).	smma_lo_00363
		Solve for a or b in $a \div b = c$ (combinations $6 \div 20$ to $9 \div 90$, multiples of 10).	smma_lo_00365
		Solve for a or b in $a \times b = x$ (products 2×20 to 12×90 , multiples of 10).	smma_lo_00366
		Solve for a or b in $a + b = c$ (decimals to tenths, no regrouping).	smma_lo_00367
		Solve for a or b in $a - b = c$ (decimals to tenths, regrouping).	smma_lo_00368
		Solve for a or b in $a \times b = c$ (products from 0.2×0.6 to 0.9×0.9).	smma_lo_00369
		Solve for a or b in $a \div b = c$ (combinations 0.6×0.6 to 0.9×0.9).	smma_lo_00370
		Solve for a , b , or c in $a \times b/c = d/e$ (combinations to 12×12).	smma_lo_00371
		Solve for a or b in $a + b = c$ (decimals to hundredths).	smma_lo_00373
		Solve for a or b in $a - b = c$ (decimals to hundredths, regrouping).	smma_lo_00374
		Solve for a or b in $a \times b = c$ (products from 0.02×0.13 to 0.09×0.19).	smma_lo_00376
		Solve for a or b in $a \div b = c$ (up to 4-digit decimals).	smma_lo_00378
		Solve for a in $a + b = c$ or $a - b = c$ in steps (whole number sums and differences 2 to 20).	smma_lo_00379
		Solve for x in $ax = c$ in steps (products 4×4 to 9×10).	smma_lo_00380
		Complete the steps to solve for a in $a \div b = c$ (combinations 4×4 to 9×10).	smma_lo_00381
		Identify related multiplication and division number sentences that can be used to solve a problem.	smma_lo_01080
		Solve a one-step equation (subtraction).	smma_lo_01688
Solve a one-step equation (multiplication).	smma_lo_01690		
Solve a one-step equation (division).	smma_lo_01692		
Solve a one-step equation in context (addition, two-digit whole numbers).	smma_lo_01743		
Solve a one-step equation in context (subtraction, two-digit whole numbers).	smma_lo_01744		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.	Solve a one-step equation in context (division, two-digit whole numbers).	smma_lo_01745
		Solve a one-step equation in context (division, two-digit whole numbers).	smma_lo_01747
		Solve one-step equations (multiplication, fractions).	smma_lo_01795
		Solve one-step equations (subtraction fractions).	smma_lo_01796
		Solve a one-step equation (multiplication, decimals).	smma_lo_01797
		Solve for a , b , or c in $a \times b/c = d/e$ (combinations to 12×12).	smma_lo_01798
		Solve a one-step equation (fractions, multiplication and division).	smma_lo_01847
		Solve a one-step equations (fractions, addition and subtraction).	smma_lo_01868
		R: Identify the one-step equation that is a translation of the written phrase within a context.	smma_lo_01813
6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint in a real-world problem.	smma_lo_02064
		Write an inequality of the form $x > c$ or $x < c$ to represent a constraint in a real-world problem. Then represent the solution on a number line.	smma_lo_02065
6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.	Identify an expression to describe the pattern generated by a table.	smma_lo_01741
		Complete a table given a two-step rule (single-digit whole numbers).	smma_lo_01750
		Complete a table given a two-step rule (whole numbers).	smma_lo_01751
		Generate a table of values given a two-step rule.	smma_lo_01756
		R: Complete an input/output table given a two-step rule; then plot the ordered pairs on coordinate grid.	smma_lo_01758
		R: Make a table and a graph when given a rule in the form $y = ax$ or $y = x + a$.	smma_lo_02139
6.G.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing or decomposing into other polygons (e.g., rectangles and triangles). Apply these techniques in the context of solving real-world and mathematical problems.	R: Multiply mixed numbers to determine the area of a rectangle or triangle; simplify if necessary.	smma_lo_00508

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
6.G.2	Apply the standard formulas to find volumes of prisms. Use the attributes and properties (including shapes of bases) of prisms to identify, compare or describe three-dimensional figures including prisms and cylinders.	R: Identify geometric solids (prisms, pyramids, cones, or spheres).	smma_lo_00667
6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	Identify the set of faces for a geometric solid.	smma_lo_00664
		Identify the net for a geometric solid.	smma_lo_00675
		Identify the net that forms a three-dimensional solid.	smma_lo_01772
		R: Identify faces, edges, and vertices of solids.	smma_lo_00632
		R: Count the vertices, edges, or faces of a prism or pyramid.	smma_lo_00643
		R: Complete sentences about bases, faces, edges, and vertices of geometric solids.	smma_lo_00652
		R: Classify and sort three-dimensional solids based on attributes using formal geometric language.	smma_lo_02138
6.G.5	Identify, compare or describe attributes and properties of circles (radius, and diameter).	Identify parts of a circle (center, radius, and diameter).	smma_lo_00633
		Identify a part of a circle (center, radius, chord, or diameter).	smma_lo_00653
6.NS.1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions (e.g., by using visual fraction models and equations to represent the problem).	Divide fractions; simplify if necessary.	smma_lo_00487
		Divide a fraction by a mixed number; simplify if necessary.	smma_lo_00491
		Divide a whole number by a fraction.	smma_lo_00492
		Divide a mixed number by a whole number; simplify if necessary.	smma_lo_00502
		Divide a fraction by a fraction; simplify if necessary.	smma_lo_01788
		Divide a mixed number by a fraction; simplify if necessary.	smma_lo_01789
		Divide a mixed number by a mixed number; simplify if necessary.	smma_lo_01790
6.NS.2	Fluently multiply and divide multidigit whole numbers using the standard algorithm. Express the remainder as a whole number, decimal, or simplified fraction; explain or justify your choice based on the context of the problem.	Divide using the long division algorithm (three-digit number, two-digit divisor, remainder).	smma_lo_00304
		Extend an iterative pattern.	smma_lo_01754
		R: Estimate the quotient in a long division problem (three-digit dividend, two-digit divisor, remainder).	smma_lo_00301
6.NS.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. Express the remainder as a terminating decimal, or a repeating decimal, or rounded to a designated place value.	Align the decimal numbers for a vertical addition problem; then solve (to thousandths).	smma_lo_00226
		Align the decimal numbers for a vertical subtraction problem; then solve (to thousandths).	smma_lo_00228
		Align the decimal numbers in a vertical subtraction problem; then solve (decimals to thousandths).	smma_lo_00233
		Multiply decimals (to thousandths x hundredths).	smma_lo_00234

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
6.NS.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. Express the remainder as a terminating decimal, or a repeating decimal, or rounded to a designated place value.	Subtract decimals with regrouping (to ten-thousandths).	smma_lo_00243
		Multiply decimals (to ten-thousandths x ten-thousandths).	smma_lo_00244
		Move the decimal point in the divisor and dividend in a long division problem.	smma_lo_00247
		Divide a decimal by a whole number.	smma_lo_00248
		Move the decimal point in the divisor and dividend in a long division problem; then find the quotient.	smma_lo_00249
		Find a decimal number that is either greater than or less than two decimal numbers.	smma_lo_01118
		Add the decimal numbers provided on a data table.	smma_lo_01785
		Subtract the decimal numbers provided on a data table.	smma_lo_01786
6.NS.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$.	Given the prime factorization of two numbers, find the common multiple.	smma_lo_01108
		Find the greatest common factor for two to three numbers.	smma_lo_01110
		Find the least common multiple of two or three numbers.	smma_lo_01112
		R: Identify a common factor of two numbers (4 to 81).	smma_lo_01088
		R: Identify the common multiples for two to three numbers (2 to 20).	smma_lo_01096
6.NS.5	Understand that positive and negative numbers describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explain the meaning of 0 in each situation.	Read the temperature on a thermometer to nearest degree (-10 to 10 degrees).	smma_lo_00804
		Read and interpret data in a table to determine the time it would take for skin to freeze.	smma_lo_01314
		Read and interpret data in a table to determine the time it would take for skin to freeze.	smma_lo_01315
		Use positive and negative numbers together to represent quantities having opposite directions or values.	smma_lo_02066
		R: Evaluate $-(a + b)$, where $9 < a < 19$, $1 < b < 9$.	smma_lo_00127
6.NS.6a	Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; Recognize that the opposite of the opposite of a number is the number itself [e.g., $-(-3) = 3$] and that 0 is its own opposite.	Evaluate the expression $-(-a)$, where a has values 1 to 99.	smma_lo_01518
6.NS.6b	Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	Given two points, describe how the points are related: reflected across the x-axis, reflected across the y-axis, or reflected across both axes.	smma_lo_02108

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
6.NS.6c	Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.	Locate the missing integer on a number line (-3 to -12).	smma_lo_00101
		Graph a set of ordered pairs from a table on a coordinate plane.	smma_lo_01809
		Graph a set of ordered pairs from a table on a coordinate plane.	smma_lo_01810
6.NS.7a	Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.	Complete statements of order for rational numbers in real-world contexts.	smma_lo_02110
		R: Compare hundredths to multiples of $\frac{1}{4}$.	smma_lo_00209
		R: Determine the least or greatest integer (-10 to 10).	smma_lo_01102
6.NS.7b	Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .	Compare rational numbers in real-world contexts.	smma_lo_02109
6.NS.7c	Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $ -30 = 30$ to describe the size of the debt in dollars.	Identify absolute value as a distance from zero on a number line.	smma_lo_01823
		Evaluate the absolute value of a number.	smma_lo_01824
6.NS.7d	Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.	Compare the absolute values of positive and negative quantities in a real-world situation.	smma_lo_02111
6.NS.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	Graph points on a coordinate plane based on a real-world context.	smma_lo_02112
		Find distances between points with the same first coordinate or the same second coordinate by using coordinates and absolute value.	smma_lo_02113

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
6.RP.1	Write and describe the relationship in real life context between two quantities using ratio language. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."	Identify the ratio.	smma_lo_01712
		Write a ratio in three different forms.	smma_lo_01825
6.RP.2	Understand the concept of a unit rate (a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship) and apply it to solve real-world problems (e.g., unit pricing, constant speed). For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."	Find the unit price of an item (products 2×6 to 25×32).	smma_lo_00830
		Identify two unit rates for a given word problem.	smma_lo_02114
6.RP.3a	Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios, and understand equivalencies.	Find missing values in a table that represents a proportional relationship, and plot the pairs of values on the coordinate plane.	smma_lo_02115
		Complete a comparison statement based on the ratios in two tables.	smma_lo_02116
6.RP.3b	Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?	Solve time and distance problems (whole numbers).	smma_lo_00842
		Solve a proportion problem in context.	smma_lo_01284
		Given the rate and time, find the distance.	smma_lo_01575
		Find the number of hours worked given the hourly rate and total earned.	smma_lo_01625
		Find the amount of an ingredient needed to make two, three, or four times a recipe.	smma_lo_01627
		Find the total money earned, given the number of hours worked and the hourly rate.	smma_lo_01630
		Solve a problem in context using proportions.	smma_lo_01635
6.RP.3c	Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole, given a part and the percent.	Find a percent of a money amount (\$0.80 to \$10.80).	smma_lo_00270
		Find a percent of a number (the percent is greater than or equal to 100).	smma_lo_00275
		Find the percent given the whole and the part.	smma_lo_00276
		Find the whole given the percent and the part.	smma_lo_00277
		Determine the percent (100 total items).	smma_lo_01713
6.RP.3d	Use ratio reasoning to convert measurement units between given measurement systems (e.g., convert kilometers to miles); manipulate and transform units appropriately when multiplying or dividing quantities.	Convert measurement units either by making a table or by multiplying by a unit rate.	smma_lo_02117

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
6.SP.2	Understand that a set of data has a distribution that can be described by its center (mean, median, or mode), spread (range), and overall shape and can be used to answer a statistical question.	Determine a student's grade point average based on five grades.	smma_lo_00179
6.SP.3	Recognize that a measure of center (mean, median, or mode) for a numerical data set summarizes all of its values with a single number, while a measure of variation (range) describes how its values vary with a single number.	Find the range of a set of data.	smma_lo_01166
		R: Identify the mode of a set of data.	smma_lo_01164
6.SP.4	Display numerical data in plots on a number line, including dot or line plots, histograms and box (box and whisker) plots.	Find the five values (upper and lower extremes, median, and upper and lower quartiles) from a set of data that are needed to create a box-and-whiskers plot.	smma_lo_01199
		Identify the box-and-whiskers plot that matches a given set of data.	smma_lo_01201
		R: Identify data sets that match the data represented in a given box-and-whiskers plot.	smma_lo_01202
6.SP.5c	Giving quantitative measures of center (median and/or mean) and variability (interquartile range), as well as describing any overall pattern and any outliers with reference to the context in which the data were gathered.	Find the average of 3 numbers.	smma_lo_00151
		Determine a student's grade point average based on five grades.	smma_lo_00179
		Determine the mean of a data set of three to five customary weights or metric masses.	smma_lo_00836
		Find the range of a set of data.	smma_lo_01166
		Identify the median of a data set with an odd number of items.	smma_lo_01168
		Identify the median of a data set with an even number of items and the two middle values are not equal.	smma_lo_01170
		Determine the range of a set of data represented in a line graph.	smma_lo_01176
		Determine the range, mean, median, and mode (one-digit numbers).	smma_lo_01210
		Determine the mode of a data set.	smma_lo_01719
		Determine the median of a data set.	smma_lo_01726
		Determine the mean of a data set.	smma_lo_01727
		Determine the range of a set of data.	smma_lo_01766
		Determine the median of a set of data.	smma_lo_01768
		R: Identify the median of a data set with an even number of items and the two middle values are equal.	smma_lo_01169
R: Solve a problem in context by finding the average (mean) of three to seven numbers.	smma_lo_01619		
6.SP.7	Solve or identify solutions to problems involving possible combinations (e.g., if ice cream sundaes come in 3 flavors with 2 possible toppings, how many different sundaes can be made using only one flavor of ice cream with one topping?)	Determine the number of arrangements that can be made from two groups with two items.	smma_lo_01717
		Determine the arrangements that can be made with a group of two and a group of three items.	smma_lo_01718
		Determine the number of routes between two locations on a map.	smma_lo_01737

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.EE.1	Apply properties of operations as strategies to add, subtract, factor, expand, and simplify linear expressions with rational coefficients.	Apply properties of operations to add two linear expressions.	smma_lo_02149
7.EE.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.	Identify the equivalent expression for a fraction, whole number, or a mixed numbers being divided by a fraction, a whole number, or a mixed number.	smma_lo_00511
		Rewrite an expression from context by factoring and combining like terms.	smma_lo_02150
7.EE.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form and assess the reasonableness of answers using mental computation and estimation strategies.	Solve for a, b, c, or d in $a/b \times c/d = e/f$ (combinations to 12×12).	smma_lo_00372
		Solve for a, b, or c in $a/b \div c = d/e$ (combinations to 12×12).	smma_lo_00375
		Solve for a, b, c, or d in $a/b \div c/d = e/f$.	smma_lo_00377
7.EE.4a	Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence o	Solve for a or c in $a/b + c/b = d/b$ (sums $2/3$ to $11/12$).	smma_lo_00356
		Solve for a or c in $(a/b - c/b = d/b$ (minuends $2/3$ to $11/12$).	smma_lo_00360
		Solve for a or c in $a/b - c/b = d/b$ (improper fractions, minuends $4/3$ to $35/12$).	smma_lo_00362
		Solve for a or c in $a/b + c/b = d/b$ (improper fractions, sums $4/3$ to $35/12$).	smma_lo_00364
		Complete the steps to solve for x in $ax + b = c$ in steps.	smma_lo_00382
		Complete the steps to solve for x in $ax + b = c$.	smma_lo_00383
		Solve for x in $ax + b = c$.	smma_lo_00384
		Identify the equation that translates the written phrase ($ax + b = c$).	smma_lo_00385
		Identify the equation that translates the written phrase ($ax + b = c$).	smma_lo_00386
		Solve for a in $a + b = c$ (a is from -20 to -1).	smma_lo_00388
		Solve for a in $a - b = c$ (differences from -19 to 11).	smma_lo_00389
		Solve for x in $ax = b$ (products from $-(4 \times 4)$ to $-(9 \times 9)$).	smma_lo_00390
		Solve for a in $a/b = c$ (products from $-(4 \times 4)$ to $-(9 \times 9)$).	smma_lo_00391
		Complete the steps to solve for x in $ax + b = c$ (x is from -9 to -1).	smma_lo_00392
		Complete the steps to solve for x in $ax - b = c$ (x is from -9 to 2).	smma_lo_00393
		Complete the steps to solve for x in $ax - b = c$ (x is from -9 to 9).	smma_lo_00394
		Solve for x in $-x = a$ (numbers from -99 to 99).	smma_lo_00395
		Complete the steps to solve for x in $a - x = b$.	smma_lo_00396
Determine whether a given value for x is a solution for $ax + b = c$ (x is from -9 to 9).	smma_lo_00397		
Solve for a two-step equation in context.	smma_lo_01638		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.EE.4a	Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence o	Solve a one-step equation (multiplication and division, integers).	smma_lo_01800
		Solve a one-step equation (addition and subtraction, one-digit integers).	smma_lo_01801
		Solve a one-step equation (two-digit integers, addition and subtraction).	smma_lo_01844
		Solve a one-step equation (integers, multiplication and division).	smma_lo_01845
		Solve a two-step equation (integers).	smma_lo_01846
		Solve a one-step equation (fractions, addition and subtraction).	smma_lo_01848
		Solve a one-step equation (decimals, multiplication and division).	smma_lo_01849
		Solve a two-step equation (fractions, multiplication).	smma_lo_01850
		Solve a two-step equation (decimals).	smma_lo_01851
		R: Identify the two-step equation that is a translation of the written phrase within a context.	smma_lo_01814
		R: Identify the equation translated from a written phrase.	smma_lo_01852
7.EE.4b	Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	Write an inequality of the form $px + q > r$ or $px + q < r$ to represent a constraint in a real-world problem.	smma_lo_02083
		Solve an inequality of the form $px + q > r$ or $px + q < r$; then graph the solution on a number line.	smma_lo_02084
		R: Identify the inequality translated from a written phrase.	smma_lo_01853
		R: Identify the written phrase translated from an inequality.	smma_lo_01869
		R: Identify the written phrase translated from an inequality.	smma_lo_01870
7.G.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	Identify the scale factor in similar shapes to find the missing corresponding sides.	smma_lo_00513
		Determine distances from scale drawings (inches to miles, cm to km).	smma_lo_00815
		Interpret scale drawings (metric and customary units of length).	smma_lo_00846
7.G.3	Describe the two-dimensional figures, i.e., cross-section, that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	Identify the cross section of a three-dimensional figure.	smma_lo_00668
7.G.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	Find the circumference, given the length of the diameter or the radius ($\pi = 3.14$).	smma_lo_00828
		Measure the diameter of a circle, and then determine the circumference.	smma_lo_01779
		Measure the radius of a circle, and then determine the circumference.	smma_lo_01780
		Measure the diameter of a circle, and then determine the area.	smma_lo_01781

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.G.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	Measure the radius of a circle, and then determine the area.	smma_lo_01783
		Determine the most accurate representation of the circumference of a circle.	smma_lo_01784
		Given the radius, find the circumference of a circle within context.	smma_lo_01855
		Given the diameter, find the circumference of a circle within context.	smma_lo_01856
7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	Establish that vertical angles are congruent.	smma_lo_00670
		Find the measure of the missing angle in a diagram.	smma_lo_00674
		Solve a problem involving equal angle measures.	smma_lo_00677
7.G.6	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	Find the area of a triangle (2 to 72 square inches).	smma_lo_00176
		Use a formula to find the area of a parallelogram.	smma_lo_00824
		Find the area of a triangle using a formula.	smma_lo_00827
		Find the volume of a rectangular or triangular prism.	smma_lo_00838
		Choose the best estimate for the volume of a rectangular prism.	smma_lo_00848
		Solve for a variable in the formula for volume of a rectangular prism (whole numbers and mixed numbers).	smma_lo_01817
		Calculate the volume of a rectangular prism; then convert the cubic feet or cubic meters into gallons or liters.	smma_lo_01819
7.NS.1a	Show that a number and its opposite have a sum of 0 (additive inverses). Describe situations in which opposite quantities combine to make 0.	Describe situations that can be represented by opposite quantities.	smma_lo_02086
7.NS.1b	Understand addition of rational numbers ($p + q$ as the number located a distance $ q $ from p as the number located a distance $ q $ from $p + q$ as the number located a distance $ q $ from depending on whether q is positive or negative). Interpret sums of rational numbers by describing real-world contexts.	Find the missing one-digit addend in a number sentence (positive or negative integers, sums are 0).	smma_lo_00102
		Add two negative integers (sums -20 to 0).	smma_lo_00107
		Add a positive and a negative integer (one-digit addends, sums -9 to 9).	smma_lo_00108
		Add two integers using addition facts (addends -10 to 10, sums -20 to 20).	smma_lo_00109
		Evaluate $-(-a + b)$, where $1 < a, b < 9$.	smma_lo_00128
		Find a missing number in an arithmetic sequence (-200 to 200, intervals 3 to 8).	smma_lo_01115
		Represent addition and subtraction of rational numbers on a number line.	smma_lo_02085
		R: Determine if the sum is positive or negative (one- and two-digit addends).	smma_lo_00106

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID		
7.NS.1c	Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	Locate an integer on the number line (differences -5 to 1).	smma_lo_01505		
		Subtract integers (minuends 0 to 10, subtrahends 1 to 10, differences negative).	smma_lo_01506		
		Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).	smma_lo_01507		
		Subtract integers (minuends 0 to 19, subtrahends 1 to 20, negative differences).	smma_lo_01508		
		Subtract integers (minuends 0 to 20, subtrahends 1 to 40).	smma_lo_01510		
		Subtract integers using a number line.	smma_lo_01511		
		Subtract integers (minuends -20 to -10, subtrahends 0 to 10).	smma_lo_01513		
		Identify $a - b$ as equivalent to $a + (-b)$, where a and b are 1 to 20.	smma_lo_01514		
		Identify $-a - b$ as equivalent to $-a + (-b)$ (minuends -20 to -1).	smma_lo_01515		
		Subtract integers (minuends -20 to 20, subtrahends 0 to -20).	smma_lo_01516		
		Identify $a - (-b)$ as equivalent to $a + b$ (minuends 1 to 10).	smma_lo_01517		
		Subtract an integer from 0 (subtrahends -20 to 20).	smma_lo_01519		
		Subtract integers (minuends 0 to 20, subtrahends -10 to -1).	smma_lo_01520		
		Identify $-a - (-b)$ as equivalent to $-a + b$ (minuends and subtrahends -9 to 9).	smma_lo_01521		
		Subtract integers (minuends -10 to 0, subtrahends -10 to -1).	smma_lo_01522		
		Subtract integers (minuends -10 to 10, subtrahends -10 to 10).	smma_lo_01525		
		Subtract integers (minuends -20 to 20, subtrahends -20 to 20).	smma_lo_01526		
		Identify $-(a - b)$ as equivalent to $-a + b$ with variables.	smma_lo_01529		
		Identify $-(-a - b)$ as equivalent to $a + b$ with variables.	smma_lo_01530		
		Evaluate the expression $-(a - b)$, where a and b have values from 1 to 9.	smma_lo_01531		
		Evaluate the expression $-(-a - b)$, where a and b have values from 1 to 9.	smma_lo_01532		
		Represent subtraction of integers on a number line.	smma_lo_02152		
		Represent addition and subtraction of rational numbers (fractions) on a number line.	smma_lo_02153		
		Represent addition and subtraction of rational numbers (decimals) on a number line.	smma_lo_02154		
		7.NS.1d	Apply properties of operations as strategies to add and subtract rational numbers.	Identify an equivalent expression of commutativity for addition of integers.	smma_lo_00114
				Find the sum of four integers when two are additive inverses (a , b , c , and d have absolute values 1 to 20).	smma_lo_00119
				Compare two expressions using the additive inverse property.	smma_lo_00120
R: Identify an equivalent expression with integers (four one-digit addends).	smma_lo_00117				

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.NS.2a	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	Identify an equivalent variable expression $-(a + b) = -a + (-b)$.	smma_lo_00124
		Identify $a \times (b - c)$ as equivalent to $(a \times b) - (a \times c)$.	smma_lo_00130
		Multiply a negative integer by a positive integer (products -144 to -4).	smma_lo_00914
		Multiply two negative integers (products 4 to 144).	smma_lo_00915
		Determine the sign of the products of two integers (one and two-digit integers).	smma_lo_00916
		Multiply a negative integer by a positive integer (products $-(20 \times 2)$ to $-(90 \times 9)$).	smma_lo_00917
		Determine the sign of the product of four factors.	smma_lo_00919
7.NS.2b	Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.	Divide integers (combinations 6×10 to -9×12 , dividend or divisor is negative).	smma_lo_00316
		Divide integers (combinations 4×6 to 12×12).	smma_lo_00317
		Divide integers (combinations 6×13 to 9×19 , all signs).	smma_lo_00319
		Identify fractions that are equivalent to a given negative fraction.	smma_lo_02087
		Interpret quotients of rational numbers by describing real-world contexts.	smma_lo_02088
7.NS.2c	Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.	Identify $-(a + b)$ as equivalent to $-a - b$, where a and b are 1 to 9.	smma_lo_00118
		Identify $-(a - b)$ as equivalent to $-a + b$ (a and b from 1 to 9).	smma_lo_01523
		Identify $-(-a - b)$ as equivalent to $a + b$ (a and b from 1 to 9).	smma_lo_01524
		Identify $a \times (b - c)$ as equivalent to $(a \times b) - (a \times c)$ with variables.	smma_lo_01533
		Identify $a \times (b - c)$ as equivalent to $(a \times b) - (a \times c)$.	smma_lo_01534
7.NS.2d	Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	Divide to convert from a fraction to a decimal equivalent.	smma_lo_00258
		Express a mixed number as a decimal.	smma_lo_00260
		R: Identify the division problem that can be used to rewrite a fraction as a decimal.	smma_lo_00257
7.NS.2e	Convert between equivalent fractions, decimals, or percents.	Find an equivalent mixed number for a decimal (tenths to ten thousandths).	smma_lo_00255
		Determine the decimal and percent that is represented by a model (base-ten blocks, hundredths).	smma_lo_00256
		Express a percent as a fraction and simplify.	smma_lo_00269
		Identify decimals or fractions that are not equivalent to a given decimal or fraction.	smma_lo_01094
		Identify equivalent representations of numbers.	smma_lo_01114
		Identify a number not equivalent to four others.	smma_lo_01116
		Express a fraction as a percent (denominator is 100).	smma_lo_01714
Complete the equivalence table by expressing a decimal number as a fraction and a percent.	smma_lo_01820		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.NS.2e	Convert between equivalent fractions, decimals, or percents.	Complete the equivalence table by expressing a decimal number as a fraction and a percent (round answer to the nearest hundredth).	smma_lo_01821
		Complete the equivalence table by expressing a fraction as a decimal number and a percent (round answer to the nearest hundredth).	smma_lo_01822
7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)	Find the missing two-digit addend in a number sentence (sums are 0).	smma_lo_00103
		Find the missing two-digit addend in a number sentence (sums are 0).	smma_lo_00104
		Find the missing negative addend in a number sentence (sums 1 to 8).	smma_lo_00105
		Find the missing addend in a number sentence (missing addends -10 to 10, sums -20 to 20).	smma_lo_00110
		Add three integers (sum -10 to 10).	smma_lo_00111
		Add integers in an associative expression $((a + b) + c, \text{ three addends } -10 \text{ to } 10)$.	smma_lo_00113
		Identify $-(a + b)$ as equivalent to $-a + (-b)$, where a and b are 1 to 9.	smma_lo_00115
		Identify $-(a + b)$ as equivalent to $-a - b$, where a and b are 1 to 9.	smma_lo_00116
		Add two integers (-20 to 20).	smma_lo_00121
		Find the missing addend in a number sentence (sums -20 to 20).	smma_lo_00122
		Find the missing addend in a number sentence (three addends, -10 to 10).	smma_lo_00123
		Find the missing dividend or divisor (combinations 2×13 to 5×19).	smma_lo_00309
		Finding the missing dividend or divisor (combinations 6×13 to 9×19).	smma_lo_00310
		Find the missing dividend or divisor in a number sentence (combinations 7×13 to 9×19 , all signs).	smma_lo_00320
		Solve for a , b , or c in $a/b \div c = d/e$ (combinations to 12×12).	smma_lo_00375
		Solve for a , b , c , or d in $a/b \div c/d = e/f$.	smma_lo_00377
		Divide fractions; simplify.	smma_lo_00512
		Estimate the missing factor in a number sentence (round to the nearest ten, products 2,010 to 81,090).	smma_lo_00913
		Find the missing positive or negative factor in a number sentence.	smma_lo_00918
		Multiply three integers (one-digit factors with absolute values 2 to 10).	smma_lo_00920
		Find the missing subtrahend in a number sentence (minuends 0 to 10, subtrahends 2 to 11, negative differences).	smma_lo_01509
		Find the missing subtrahend in a number sentence (minuends -9 to 0, differences -9 to 0).	smma_lo_01512
		Evaluate a numerical expression $(a) + (b) - (c)$, where a , b , and c have values from -9 to 9.	smma_lo_01527
Compare sums and difference of positive and negative integers (-5 to 5).	smma_lo_01528		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)	Solve a two-step addition problem to find a person's age 5 to 20 years from now.	smma_lo_01631
		Find the final temperature given the initial temperature and the temperature increase.	smma_lo_01632
		Find three consecutive integers when given their sum.	smma_lo_01639
		Extend an arithmetic sequence for three more terms.	smma_lo_01803
		Evaluate an algebraic expression with exponents (integers -10 to 10).	smma_lo_01818
		Evaluate an algebraic expression (integers -10 to 10).	smma_lo_01842
		Evaluate an algebraic expression with three variables (-5.9 to 5.9).	smma_lo_01843
7.RP.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.	Identify the correct proportion for the context, and then solve.	smma_lo_01826
7.RP.2a	Decide whether two quantities are in a proportional relationship.	Form a proportion that can be used to solve for the height of an object.	smma_lo_00660
		Determine the fraction needed to complete the proportion.	smma_lo_01827
7.RP.2b	Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	Identify the unit rate given a table, a graph, an equation, a diagram, or a word problem.	smma_lo_02001
		Identify the constant of proportionality given a table, a graph, an equation, a diagram, or a word problem.	smma_lo_02002
7.RP.2c	Represent proportional relationships by equations and multiple representations such as tables, graphs, diagrams, sequences, and contextual situations.	Identify an equation that can be used to solve a two-step problem in context.	smma_lo_01297
		Given the number of kilowatt-hours used and a price, find the total cost of power.	smma_lo_01336
		Convert light years to kilometers and kilometers to light years.	smma_lo_01339
7.RP.2d	Understand the concept of unit rate and show it on a coordinate plane. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.	Interpret the meaning of a point on the graph of a proportional relationship in terms of the situation; use this information to answer questions about the situation.	smma_lo_02089
7.RP.3	Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	Find the total cost, given an amount and the sales tax percentage.	smma_lo_00178
		Find the percent of increase.	smma_lo_00278
		Identify a correct expression to solve a problem about sales tax.	smma_lo_00845
		Find the number of grams that represents a percentage of the total weight (whole numbers).	smma_lo_01636
		Find total earnings for two to four weeks given the weekly salary, commission percentage, and total sales (whole number percents).	smma_lo_01637
		Solve for a variable in the formula for simple interest (whole numbers and decimals).	smma_lo_01805

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.SP.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.	Make predictions based on a sample.	smma_lo_01223
7.SP.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	Find and compare the average variation of two sets of data.	smma_lo_01221
7.SP.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	Determine whether a chronological event is certain or impossible.	smma_lo_01137
		Given information about a current situation, classify a future event as being certain, possible, or impossible.	smma_lo_01139
		Given a sentence describing an observed event, label a future occurrence as certain, possible, or impossible.	smma_lo_01143
		Within the context of selecting without replacement from a cup containing three balls, each of a different color, label a given event prior to each selection as certain, possible, or impossible.	smma_lo_01147
		Create a set of colored balls whose contents are specified by whether it is certain, possible, or impossible to select a particular color.	smma_lo_01153
		Given a graphical representation of an urn containing balls of three colors, determine qualitatively which event is more probable to occur (5 to 8 times as many balls of one color as of the other color).	smma_lo_01157
		Given a graphical representation of an urn containing balls of two colors, determine qualitatively which color is more probable to be randomly selected (2 to 4 times as many balls of one color as of the other color).	smma_lo_01159
		Using a graphical representation of an urn and a set of balls of two colors, modify a random experiment so that the qualitative probability of getting one color is greater than that of getting the other color.	smma_lo_01161
		Given a graphical representation of an urn containing balls of three colors, determine qualitatively which event is more probable to occur.	smma_lo_01163
Given the graphical representation of a bowl containing marbles of two colors, represent on a qualitative ordinal scale the probability of an event (6 to 11 marbles in the bowl).	smma_lo_01165		

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.SP.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	Given a graphical representation of a bowl containing marbles of two colors, represent on a qualitative ordinal scale the probability of an event and its complement.	smma_lo_01171
		Given a graphical representation of two urns containing different compositions of balls of two colors, select the urn in which an event is qualitatively determined to have a high probability.	smma_lo_01173
		Express an event as a ratio of the number of favorable outcomes to the total number of outcomes (bowl containing marbles of two colors).	smma_lo_01179
		Determine the probability of an event.	smma_lo_01197
		Given a random experiment represented graphically by a spinner, prepare an equivalent random experiment using a representation based on an urn and colored balls.	smma_lo_01200
		Using a graphical representation of a bowl containing marbles of four colors, begin to apply the addition rule for computing the probabilities of inclusive classes using light and dark colored marbles.	smma_lo_01203
		Given a graphical representation of a spinner partitioned into sectors of different sizes, each containing one of several possible pictures, label events as certain or impossible or pairs of events as more, less, or equally likely.	smma_lo_01212
		Given a graphical representation of two spinners, select the spinner for which a given event has the highest probability of occurring.	smma_lo_01216
		Given a coordinate grid to represent outcomes of tossing a pair of number cubes, compute theoretical probability of an event defined by the sum of a pair of outcomes.	smma_lo_01220
		Given information about a situation in which items are selected from a container without replacement, label the probabilities of given outcomes in a first and second selection.	smma_lo_01226
	Write a fraction to express the probability of an event.	smma_lo_01667	
7.SP.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its longrun relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.	Determine the event that is most or least likely; then conduct a simulation in which the results are recorded so that theoretical and experimental probability can be compared.	smma_lo_01738

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
7.SP.7a	Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	In the context of randomly selecting a card that has one of two pictures on it, compute the probability of each picture being selected from a set of cards (total of 4 to 7 cards).	smma_lo_01211
		In the context of randomly selecting a card that has a certain name on it, compute the probability of each name being selected from a set of cards.	smma_lo_01215
7.SP.8a	Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	Identify the probability of two independent outcomes, and then determine the probability of the combination of the two outcomes occurring simultaneously.	smma_lo_01224
		R: Given a graphical representation of a spinner, count the number of possible outcomes and complete a list of all the outcomes.	smma_lo_01209
		R: Given a graphical representation of two spinners, count all the possible outcomes for spinning each spinner once.	smma_lo_01665
7.SP.8b	Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.	Given a coordinate grid to represent outcomes of tossing a pair of number cubes, identify the point that represents a given pair of outcomes.	smma_lo_01218
		Given a coordinate grid to represent outcomes of tossing a pair of number cubes, identify all points that represent the sum given for a pair of outcomes.	smma_lo_01219
8.EE.1	Apply the properties (product, quotient, power, zero, negative exponents, and rational exponents) of integer exponents to generate equivalent numerical expressions.	Multiply or divide two numbers with exponents (same base, exponents less than 18).	smma_lo_01104
		Find the missing exponent in a multiplication or division number sentence.	smma_lo_01111
8.EE.2	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	Find the square root of a number using a calculator (numbers to 4000).	smma_lo_01120
8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	Write very small numbers in scientific notation.	smma_lo_02070
		Write very large numbers in scientific notation.	smma_lo_02071
		Compare numbers written in scientific notation.	smma_lo_02072

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
8.EE.4	Perform operations with numbers expressed in scientific notation, including problems where both standard notation and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.	Express a number in scientific notation (exponents 1 to 6).	smma_lo_01113
		Given the scientific notation, determine the standard notation of a number (the power of 10 has an exponent of 1 to 6).	smma_lo_01121
		Find the missing exponent for a number written in scientific notation (the exponent is 1 to 6).	smma_lo_01122
8.EE.5	Graph linear equations such as $y = mx + b$, interpreting m as the slope or rate of change of the graph and b as the y -intercept or starting value. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	Graph proportional relationships and interpret the unit rate as the slope of the graph.	smma_lo_02073
		Compare a proportional relationship represented as a graph to a proportional relationship represented as a table.	smma_lo_02074
8.EE.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .	Use similar triangles to explain why the slope m is the same between any two distinct points on a nonvertical line in the coordinate plane.	smma_lo_02075
		Derive the equation $y = mx$ for a line through the origin, and $y = mx + b$ for a line intercepting the vertical axis at b .	smma_lo_02076
8.EE.7a	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).	Transform a given multi-step equation into a simpler form.	smma_lo_02079
8.EE.7b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Generate and solve an equation with variables on both sides of the equal sign in a real-world context.	smma_lo_02145
8.EE.8a	Show that the solution to a system of two linear equations in two variables is the intersection of the graphs of those equations because points of intersection satisfy both equations simultaneously.	Identify the solution to a system of linear equations by locating the point of intersection on its graph.	smma_lo_02080

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
8.EE.8b	Solve systems of two linear equations in two variables and estimate solutions by graphing the equations. Simple cases may be done by inspection.	If a system of linear equations has 0 or infinitely many solutions, solve it by inspection. If it has 1 solution, solve it either algebraically or by graphing.	smma_lo_02133
8.EE.8c	Solve real-world and mathematical problems leading to two linear equations in two variables.	Model a real-world problem with a system of linear equations. Then solve it by locating the intersection point of the graphs of the two equations.	smma_lo_02134
8.F.1	Understand that a function is a rule that assigns to each input (the domain) exactly one output (the range). The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. For example, use the vertical line test to determine functions and non-functions.	Given a list of ordered pairs of a relation, identify two ordered pairs that show the relation is not a function.	smma_lo_01811
		Given a graph of a relation, identify two ordered pairs on the graph that show the relation is not a function.	smma_lo_01812
		Given a set of graphs of relations, identify which graphs represent functions.	smma_lo_01835
		R: Identify the addition or subtraction rule of the function.	smma_lo_01682
		R: Identify the multiplication or division rule of the function.	smma_lo_01684
		R: Identify the one-step rule in the relation or function (addition and subtraction).	smma_lo_01722
		R: Identify the one-step rule in the relation or function (multiplication and division).	smma_lo_01723
		R: Generate a table of values given a rule.	smma_lo_01724
		R: Identify an expression to describe the pattern generated by a table.	smma_lo_01742
		R: Identify a two-step expression to describe the pattern generated by a table (input = 100).	smma_lo_01752
		R: Identify a two-step expression to describe the pattern generated by a table (input = 1000).	smma_lo_01753
		R: Complete an input/output table given a one-step rule; then plot the ordered pairs on a coordinate grid.	smma_lo_01757
		R: Complete a table of values and graph the equation of a quadratic function.	smma_lo_01836
R: Complete a table of values and graph the equation of a linear function.	smma_lo_01837		
8.F.2	Compare properties of two functions, each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	Identify the rate of change and the y-intercept of two linear functions, one represented graphically, and one represented either algebraically or in a table.	smma_lo_02101
		Identify the rate of change and the y-intercept of two linear functions, one represented in a verbal description, and one represented either graphically or algebraically.	smma_lo_02102
		Identify the rate of change and the y-intercept of two linear functions, one represented in a table, and one represented either algebraically or in a verbal description.	smma_lo_02103

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
8.F.3	Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	Identify if an equation is a linear or exponential function.	smma_lo_01828
		Identify if an equation is a linear or quadratic function.	smma_lo_01829
		Identify whether graphs are linear or quadratic.	smma_lo_01831
		Identify whether graphs are linear or nonlinear.	smma_lo_01832
		Identify if an equation is a linear or nonlinear function.	smma_lo_01833
		Determine if a table values represents a linear or nonlinear function.	smma_lo_01834
		Determine if a table values represents a linear or exponential function.	smma_lo_01881
		Determine if a table values represents a linear or quadratic function.	smma_lo_01882
		Identify the function that is represented by a table of values (linear and nonlinear).	smma_lo_01883
8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Complete an input/output table and identify the algebraic equation that describes the one-step rule.	smma_lo_01806
		Complete an input/output table and identify the algebraic equation that describes the two-step rule.	smma_lo_01807
8.F.5	Given a verbal description between two quantities, sketch a graph. Conversely, given a graph, describe a possible real-world example.	Identify whether graphs are linear or exponential.	smma_lo_01830
8.G.1	Through experimentation, verify the properties of rotations, reflections, and translations (transformations) to figures on a coordinate plane).	R: Identify a figure as a slide, reflection (flip), or turn of another figure.	smma_lo_00599
		R: Identify congruent angles.	smma_lo_00637
		R: Identify a set of geometric figures that show a reflection (flip).	smma_lo_00648
		R: Identify a reflection, a rotation, and a translation of a geometric figure.	smma_lo_00665
		R: Identify a transformation as a slide, flip, or a turn.	smma_lo_01776
8.G.1a	Lines are taken to lines, and line segments to line segments of the same length.	Rotate a figure by 90, 180, or 270 degrees clockwise or counterclockwise on a coordinate plane.	smma_lo_02104
		Reflect a figure on a coordinate plane over the x-axis, the y-axis, or the line $y = x$.	smma_lo_02105
8.G.1b	Angles are taken to angles of the same measure.	Translate a figure on a coordinate plane.	smma_lo_02120
		Rotate a figure on a coordinate plane; verify properties of the rotation.	smma_lo_02121
8.G.1c	Parallel lines are taken to parallel lines.	Reflect a figure on a coordinate plane over the x-axis, the y-axis, or the line $y = x$; verify properties of the rotation.	smma_lo_02122
		Translate a figure on a coordinate plane; verify properties of the rotation.	smma_lo_02123

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
8.G.2	Demonstrate understanding of congruence by applying a sequence of translations, reflections, and rotations on two dimensional figures. Given two congruent figures, describe a sequence that exhibits the congruence between them.	Given two congruent figures, transform one figure so that it lines up with the other. Then, identify the sequence of transformations used.	smma_lo_02124
		R: Identify the figure that is the same size and shape as a given figure.	smma_lo_00600
		R: Identify congruent figures on a geoboard.	smma_lo_00606
8.G.3	Describe the effect of dilations, translations, rotations, and reflections on twodimensional figures using coordinates.	Reflect a figure, find the coordinates of the reflected figure, and describe the effect of the reflection on the coordinates.	smma_lo_02125
		Determine the algebraic expression used to find the coordinates of the image of a figure under a dilation with the origin as the center of dilation.	smma_lo_02142
		R: Determine the missing coordinate of a vertex of a triangle in a transformation.	smma_lo_01736
8.G.4	Demonstrate understanding of similarity, by applying a sequence of translations, reflections, rotations, and dilations on two-dimensional figures. Describe a sequence that exhibits the similarity between them.	Identify the polygon that is not similar to the others.	smma_lo_00645
		Identify the example that is a counterexample to a statement.	smma_lo_00649
		Identify similar triangles or rectangles on a geoboard.	smma_lo_00847
		R: Identify similar polygons.	smma_lo_00610
		R: Identify two figures as being similar, congruent, or neither.	smma_lo_00618
8.G.5	Justify using informal arguments to establish facts about <ul style="list-style-type: none"> the angle sum of triangles (sum of the interior angles of a triangle is 180°), measures of exterior angles of triangles, angles created when parallel lines are cut by a transversal (e.g., alternate interior angles), and angle-angle criterion for similarity of triangles. 	Establish that alternate interior angles are congruent for parallel lines.	smma_lo_00672
		Arrange statements to write a proof of a fact about either the angle sum or the exterior angle of a triangle.	smma_lo_02126
		In a figure in which parallel lines are cut by a transversal, identify the transformations that would line one angle up with another angle. Then, describe the relationship between the two angles.	smma_lo_02129
		Determine whether or not a diagram gives enough information to determine whether or not two triangles are similar. If so, identify the triangles as similar or not similar.	smma_lo_02130
		R: Count the points of intersection of two or more lines (0 to 5 intersection points).	smma_lo_00635
8.G.6	Explain the Pythagorean Theorem and its converse.	Explain a proof of the Pythagorean Theorem.	smma_lo_02131
		Explain a proof of the converse of the Pythagorean Theorem.	smma_lo_02132
8.G.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	Find the measurement of the hypotenuse using the Pythagorean theorem. (2D)	smma_lo_01854

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.

AK Standard	AK Standard Text	Item Description	Item ID
8.G.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	Given two points on a coordinate grid, draw a right triangle whose hypotenuse connects the two points. Then use the Pythagorean Theorem to find the distance between the two points.	smma_lo_02100
8.G.9	Identify and apply the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	Use a formula to find the volume of a cylinder.	smma_lo_00839
		Use a formula to find the volume of a cone or a sphere.	smma_lo_00844
8.NS.2	Order real numbers, using approximations of irrational numbers, locating them on a number line. For example, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.	Drag rational and irrational values to their correct positions on a number line.	smma_lo_02141
8.NS.3	Identify or write the prime factorization of a number using exponents.	Identify the prime factorization of a two-digit number.	smma_lo_01093
		R: Using a factor tree, find the prime factors of a number (2 to 32).	smma_lo_01087
8.SP.1	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	Identify positive, negative, or no association for sets of actual data.	smma_lo_01222
8.SP.3	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.	R: Choose an approximation based on a trend line for bivariate data.	smma_lo_02143

Copyright © 2020 Savvas Learning Company LLC All Rights Reserved.
Savvas™ and **Savvas Learning Company™** are the exclusive trademarks of Savvas Learning Company LLC in the US and in other countries.

"R" denotes a learning object that enables students to achieve readiness for a standard. These learning objects reinforce prerequisite skills needed for understanding and mastery of the content described in the standard.